



# Improving Overweight and Over-Dimensional Logistics and Truck Routing

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Kentucky Transportation Center  
College of Engineering, University of Kentucky, Lexington, Kentucky

in cooperation with  
Kentucky Transportation Cabinet  
Commonwealth of Kentucky

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**Research Report**  
KTC-18-09/SPR17-534-1F

**Improving Overweight and Over-Dimensional Logistics and Truck Routing**

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<b>16. Abstract</b> In 2012, the Kentucky Transportation Cabinet's (KYTC) Division of Motor Carriers (DMC) issued 98,196 overweight or over-dimensional (OW/OD) permits. To determine whether a route can accommodate an OW/OD vehicle, analysts must have current and accurate data on construction schedules, road conditions, and detour routes, among other factors. This study documents processes used by DMC for permitting and routing OW/OD vehicles. It includes detailed flowcharts that capture each aspect analysts follow during the decision-making process. As part of this project, state transportation agency representatives from states bordering Kentucky (Illinois, Indiana, Ohio, West Virginia, Virginia, Tennessee, and Missouri) were interviewed to identify potential best practices for permitting and routing OW/OD trucks. They collected information on how these states currently use Bentley SUPERLOAD software. Insights drawn from these interviews informed DMC's implementation of Bentley SUPERLOAD Version 4. Following the adoption of Bentley SUPERLOAD Version 4, a number of issues were identified by DMC staff. Key problems included software bugs which require staff to intervene and then restart the permitting process, staff being unable to view the status of permits sent to KYTC's Bridge Preservation section for review, and the distribution of automated notifications to carriers when restrictions are changed on their active permits, but which offer no details on how to amend the permit. A survey of transportation agency officials in states which have adopted Bentley SUPERLOAD Version 5 was developed and administered to determine if those problems have been resolved.			
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## Chapter 1 Introduction

The Kentucky Transportation Cabinet (KYTC) commissioned this study from the Kentucky Transportation Center (KTC) to document the current process for issuing overweight and over-dimensional (OW/OD) permits. Additionally, KYTC asked KTC researchers to identify methods for improving the OW/OD permitting process. In 2012, the Kentucky Division of Motor Carriers (DMC) issued 98,196 OW/OD permits to trucking companies seeking to transport overweight or over-dimensional loads throughout Kentucky. To determine whether loads can safely and efficiently be moved along a given route, state engineers and analysts must have access to current and reliable data about bridge clearances, construction schedules, detour routes, weight limits, limited lane widths, bridge classifications, local restrictions on movements of OW/OD loads, and any other relevant information to moving the load along its approved path. Given the safety hazards to motorists and the economic impact to industry when OW/OD loads become stranded, it is critical to improve the methods Kentucky's Department of Vehicle Regulation (DVR) employs to collect bridge, road, and construction information for routing purposes.

To establish best practices for issuing OW/OD permits, KTC researchers interviewed (on the telephone or using email) Department of Transportation representatives from each state bordering Kentucky (Indiana, Ohio, West Virginia, Virginia, Tennessee, Missouri, and Illinois). This study first reviews OW/OD permitting procedures used by other states to determine whether aspects of their processes could be applied in Kentucky to improve the overweight and over-dimensional permitting process. After reviewing best practices adopted by other states, this report proposes a strategy for the routine collection and updating of all relevant OW/OD data (including coal haul routes). It also outlines strategies and processes to strengthen communication between various stakeholders.

KTC also surveyed officials in states using the Bentley SUPERLOAD Version 5 software for OW/OD permitting processes — Michigan, Maryland, Illinois, West Virginia, New Jersey, and Ohio. Chapter 17 summarizes survey findings and includes details on how the software is being applied.

## Chapter 2 Overweight and Over-Dimensional Permitting in Kentucky

In 2012, the Division of Motor Carriers (DMC) issued 98,196 OW/OD permits to trucking companies wishing to move overweight or over-dimensional loads throughout Kentucky. Moving these loads safely and efficiently through the state requires engineers and analysts to have access to reliable data about bridge clearances, construction schedules, detour routes, weight limits, limited lane widths, bridge classifications, local restrictions on movements of OW/OD loads, and any other relevant information to moving the load along its approved path throughout the Commonwealth.

However, there are a number of obstacles to the DMC in successfully routing these loads. First, there is no real-time data for individuals to act on concerning these OW/OD routes. They have to have faith that dated bridge clearances, road classifications, bridge classifications, and any other size restrictions are accurate. Often the data is not. Second, attempts to incorporate even the existing, stale data the Cabinet does have into an automated routing system with a particular private-sector software vendor has been a failure. Third, there are currently communications issues that have yet to be resolved. Some highway districts are better than others about providing construction schedules and route impacts, but there is no uniform procedure for reporting this information and too little communication between construction contractors, the Department of Highways and the Department of Vehicle Regulation (DVR). For example, a recently updated map of coal haul routes shows a route through downtown Louisville under a well-known low-clearance bridge where on average one truck gets stuck per month. Given the safety hazards to motorists and the economic impact to industry when OW/OD loads get stranded, it is crucial to improve the way DVR collects bridge, road, and construction information for routing purposes. This study would primarily look at best practices in other states, devise a strategy for routine collection and updating of all relevant OW/OD data (including coal haul routes), and develop strategies and processes to strengthen communication between various stakeholders. Further, improvements to truck routing procedures for all types of truck will be investigated and analyzed.



## Chapter 3 Single Trip Permits

A single trip permit is a one-time trip permit that shows the origin and destination requested by an applicant. It is vehicle-, route-, and load-specific. The permit is valid for 10 days and carries a \$60 state fee (a 4% (\$2.40) credit card service fee is applicable).

There are four ways to apply for a single trip permit. To apply online for a permit, a user must first create an online account. To create an online account, fill out the TC 95-586 form and fax it to the Division of Motor Carriers with attention to the Overweight/Overdimensional (OW/OD) department. This form establishes an Automated Clearing House (ACH) debit account that lets the Commonwealth of Kentucky initiate debits from the applicant's checking account for the permit. Applying for an ACH debit account also lets the applicant avoid credit card service fees. The second way to apply for a single trip permit is to complete a TC 95-10 and fax it to the OW/OD department. This form provides all the information the Overweight/Over-Dimensional (OW/OD) section needs to issue a single trip permit. Faxed applications require a credit card payment and are subject to the additional fees mentioned above. A carrier/applicant cannot submit more than four faxed applications per year. The third way to apply for a single trip permit is to fill out the application in person at the One Stop Shop, which is located on the second floor of the Kentucky Transportation Cabinet office building in Frankfort. The final way to obtain a single trip permit is to use a permitting agency. Permitting agencies take care of all the necessary paperwork for the single trip permit for a fee.

The following diagram illustrates the application process for obtaining a single trip permit. Green pentagons represent the permit review process. The permit review process is discussed later in the document. One overarching question determines which path the application process takes. That question is whether the carrier is currently detained at a weigh station. If the carrier is stopped and detained at a weigh station, the Division of Motor Carriers (DMC) takes their information over the phone, executes a permit review, and either approves or denies the route. If the route is approved, the payment is processed over the phone and a permit is issued to the company. If the route is denied, the application must be modified and resubmitted. Frequency of travel through Kentucky is examined for applicants not detained at a weigh station. If the applicant has traveled through Kentucky more than four times in a given year they are required to establish an online account. If the account is approved, applicants apply online for the single trip permit, and it moves through the typical permit review process. If the account is not approved, applicants need to identify a third-party vendor to submit the application for a single trip permit on their behalf. If an applicant has not traveled through KY more than four times they can either complete a TC 95-10 form in person or download and fax it to the OW/OD group for approval. They may also fill out a TC 95-586 form to create an online account or use a third party vendor. Regardless of application method, the application goes through the same review process.

The narrative provided is not a complete description of the single trip permit process. Refer to Figure 3.1 to gain a better understanding of all of the processes in more detail.



Figure 3.1 Single Trip Permit Overview

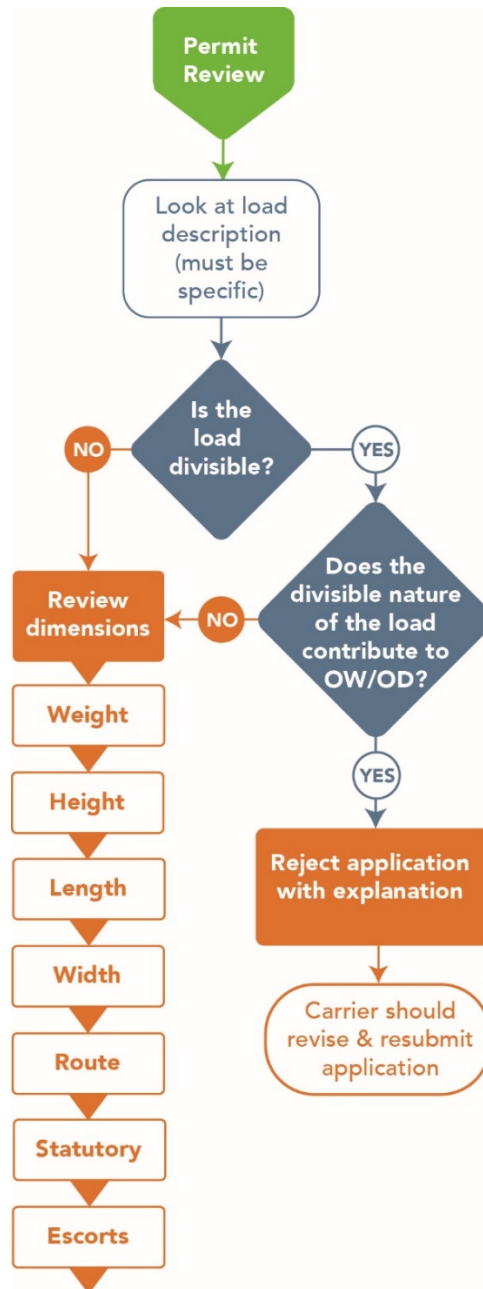
### 3.1 Single Trip Permit Review

To conduct a permit review, the OW/OD section examines information provided by the carrier when they apply for a single trip permit. The OW/OD group uses this information to determine whether the carrier should be allowed to haul a specified load on a designated route. If the OW/OD group permits the move, it provides any necessary restrictions to the carrier.

Figure 3.2 provides a high-level overview for the permit review process. Subsequent flowcharts contain detailed information on different review activities. Readers should consult these diagrams for a step-by-step breakdown of each activity. Permit reviews begin with the OW/OD examining the load description. The load description must be specific and contain enough information to determine if the load is divisible. A divisible load is one that can be separated into smaller units without affecting the integrity of the load. If the load is divisible, the OW/OD group must determine whether its divisibility contributes to the load being overweight or over-dimensional. If the load's divisibility contributes to it being overweight or over-dimensional, the OW/OD group rejects the application and provides a written justification for its decision. Using feedback provided by the OW/OD group, carriers should revise and resubmit rejected applications.

If a load is not divisible, or if its divisibility does not contribute to it being overweight or over-dimensional, the OW/OD group reviews the load's dimensions to determine whether it should be permitted on the route submitted by the applicant. If the dimensions of the load are permissible, the OW/OD group next evaluates the weight to establish whether it should be allowed on the requested route with the submitted truck configuration. If the weight is acceptable, the height is then checked to ensure the load does not exceed any vertical clearances on the designated route. If the load's height falls within specified tolerances, its length is checked to verify whether it can successfully navigate all turns on the route. The OW/OD group will also check for overhang in the front and back. Once the length is deemed permissible the width of the load is examined to ensure it does not exceed any lateral clearances on the route. If the width is allowable, the route is examined to verify that the origin and destination connect and identify possible restrictions. Statutory requirements for the applicant are reviewed once the route is approved. If the applicant complies with the statutory requirements, the final check is to determine whether escorts are needed.

If the application passes all of the previous checks, the permit is issued to the applicant. The method of application determines how the applicant will receive the permit.



**Figure 3.2** Permit Review Overview

## Chapter 4 Weight

Because vehicles can potentially damage existing infrastructure, load weight is an important consideration when applying for an overweight or over-dimensional permit. Not all roads or structures can handle the same weight configurations. Knowing the weight of the load helps the OW/OD group determine the appropriate route. Loads greater than or equal to 200,000 pounds are termed *super loads*. Permit applications for these loads are sent to the Bridge Maintenance/Preservation Branch for analysis. Loads under 200,000 pounds are the exclusive responsibility of the OW/OD group.

### 4.1 Weight Review

The most important question the OW/OD group must ask when analyzing a permit application is whether all the structures on the intended route are load capable, meaning can the structures on the route handle the load's weight in its current configuration. The OW/OD group performs a multi-step analysis to determine if the route can accommodate the load listed on the application. One of the first steps is to examine the route in Google Maps to identify structures the load will cross. OW/OD personnel then locate any posted restrictions that might prevent the load from crossing the structure. They also utilize a map of Kentucky that contains notes about various restrictions across the state. The OW/OD website contains a list of temporary and permanent restrictions (at <http://drive.ky.gov/motor-carriers/Pages/OWOD-Restrictions.aspx>) that can be used to determine if the intended route has any weight restrictions that would prevent the load from using the route.

On the weight review flowchart, the question about structures is highlighted in yellow because there is not always sufficient information for OW/OD personnel to review to determine if the structures are load capable. Currently, there is no database that houses information about structures and their load-carrying capabilities. As such, OW/OD personnel must rely on intuition or personal knowledge of previous loadings that did not fail and assume a structure remains capable of carrying the same load it handled previously. Without necessary information, the OW/OD group is making engineering decisions about bridge or structure loadings that are best made by the Bridge Maintenance/Preservation Branch.

If a route is deemed load capable, OW/OD personnel then examine how the load is distributed across the axles of the truck and trailer. The Kentucky Administrative Regulations (KAR) address overweight and over-dimensional motor vehicle load permits. Section 4 of 601 KAR 1:018, *Special Overweight or Over-Dimensional Motor Vehicle Load Permits*, specifies the allowable weights per axle or axle grouping. It speaks to the weight of the steer axle, any single axle, tandem axles, tridem axles, and combination units. As previously noted, the OW/OD section also considers the gross weight of the load and whether it is greater than or equal to 200,000 pounds. If a load meets this criterion, the OW/OD group requests a profile drawing from the carrier documenting axle weights and spacing. This drawing is sent to the bridge preservation group for analysis. If the carrier is unable or unwilling to provide the requested information, the application is rejected with an explanation. If all checks pass, the OW/OD group moves on to the next phase of review.

The box indicating bridge analysis needed is shaded blue on the flowchart. The blue shading indicates the OW/OD office cannot render a decision on the application until it receives outside information. When the loading information is sent to bridge preservation for analysis, the OW/OD group must wait for that group to provide feedback before the load can be approved for travel on the requested route. The amount of time needed for this review depends on the workload of the Bridge Maintenance/Preservation Branch. Because the provision of this information lies beyond the OW/OD group's control, the issuance of permits may be significantly delayed in some cases.

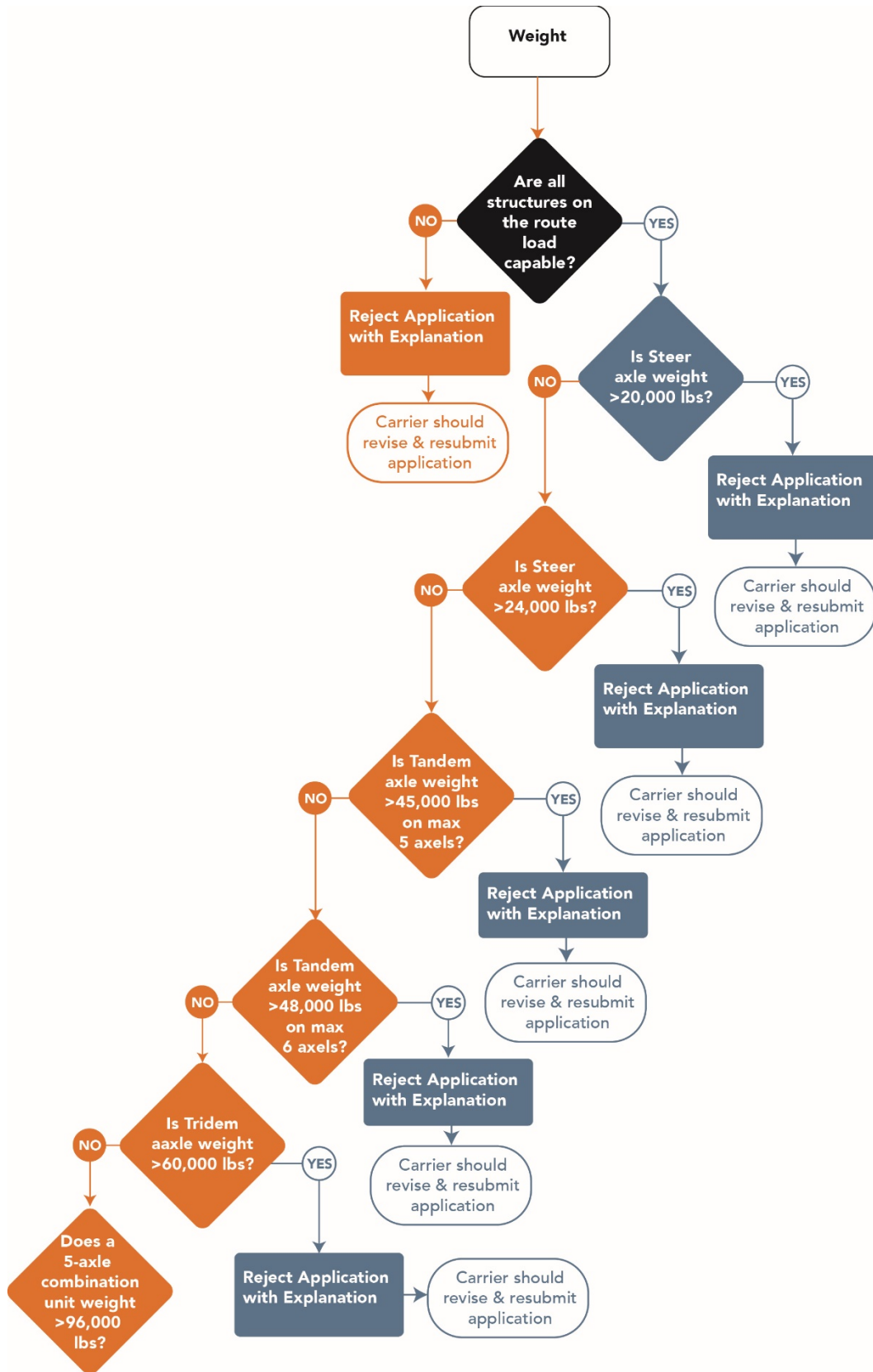


Figure 4.1 Weight Review A

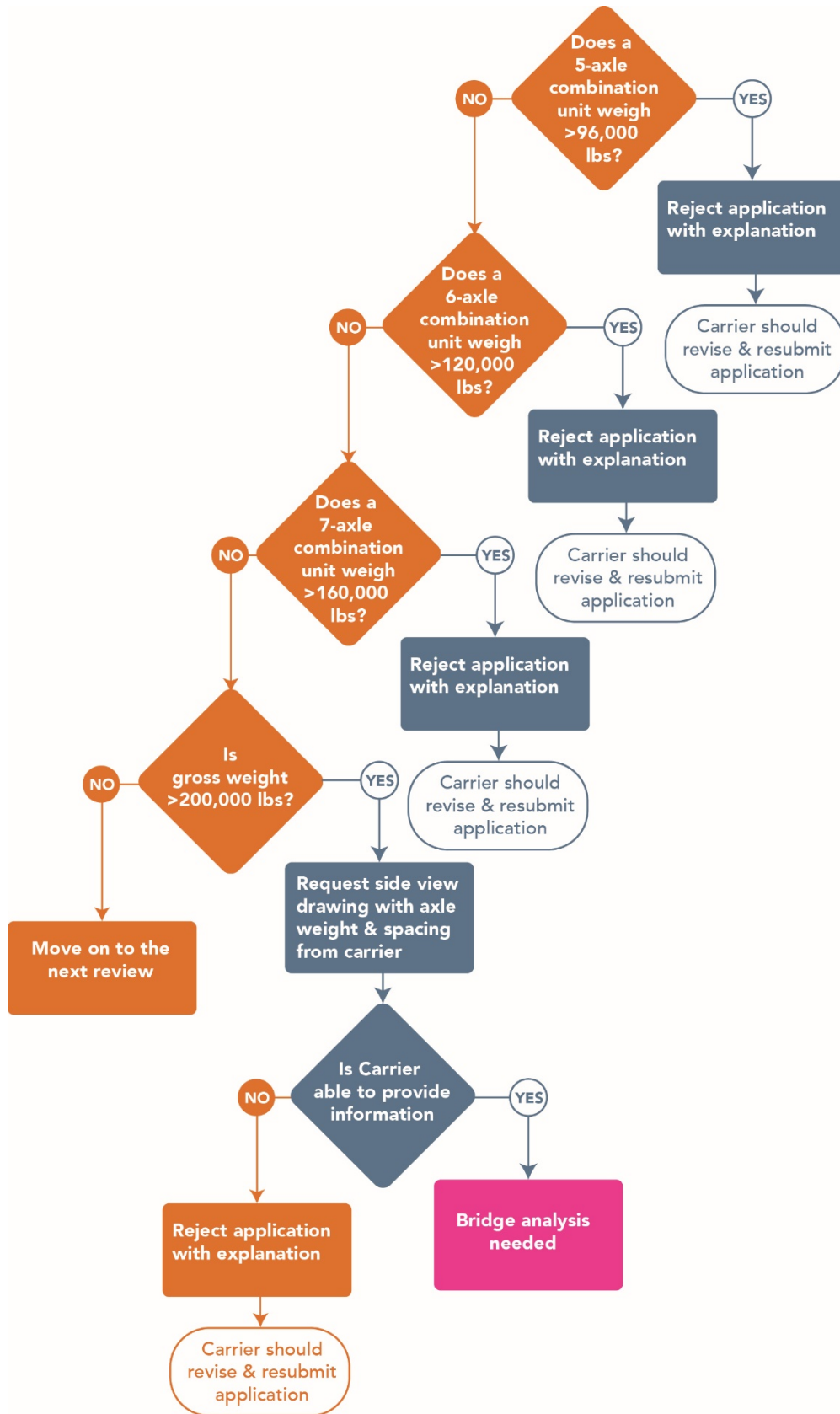


Figure 4.2 Weight Review B

## Chapter 5 Height

As the overweight and over-dimensional group continues to analyze the route provided on an application, they look at the height of the load and must check to see if it exceeds the vertical tolerances of the route. According to the Kentucky Revised Statutes (KRS 189.222), the legal height for trucks is 13 feet 6 inches on all highways. In order to move a load taller than this, a permit is required.

### 5.1 Height Review

On the height review flowchart (Figure 5.1), the question about vertical tolerances is highlighted in yellow because there is not always sufficient information for OW/OD personnel to determine if the structures have sufficient vertical clearances. Currently, there is no database that houses information about structures and their vertical clearances. As such, OW/OD personnel must rely on intuition or personal knowledge of previous loadings that did not fail and assume a structure retains sufficient clearance for the same size load it handled previously. Without necessary information, the OW/OD group is making engineering decisions about bridge or structure clearances that are best made by the Bridge Maintenance/Preservation Branch. The lack of information forces them to allow loads on a route that previously passed even though the vertical clearances could have changed. If the height of the load is found to be within the acceptable tolerances along the route the next check is performed.

The next check looks at the divisibility of the load. If the load is divisible and the divisible nature of the load contributes to the OW/OD, the application is rejected with an explanation. If the load is divisible and the divisible nature of the load does not contribute to it being overweight or over-dimensional, then the height is examined to determine if there are additional requirements. This is the same process for non-divisible loads. Please reference the height flowchart for clarification.

If the height of the load exceeds 15 feet 6 inches, the carrier must submit a TC 95-625 proposed route survey form. This form requires the carrier or a survey company to physically go and survey the route to ensure that the load at its highest point will clear all structures at their lowest point and note any obstructions along the route. This figure is shaded blue indicating it is a process outside of OW/OD's control and it can introduce lag time in obtaining a permit because they cannot proceed with the application without this information.

If the height does not exceed 15 feet 6 inches, it is checked to see if it exceeds 14 feet 11 inches. If it does, a front escort with a height pole is required. If the load does not exceed either of these two vertical dimensions, the OW/OD personnel move on to the next review.

Another potential problem arises if the vertical clearances have changed due to construction. There is not a clear-cut process for when the new measurements should be taken or how they should be taken and when the information should be updated, even though the OW/OD group needs this information on a daily basis for the safety and welfare of all motorists on the highway. Temporary restrictions due to construction are supposed to be reported to the OW/OD group by filling out a TC 63-70 form and emailing it to the group at least 10 business days in advance. The problem that is often encountered is that the form is either filled out incorrectly or not filled out at all. When this happens, over-dimensional trucks may be routed to a place where they cannot successfully navigate, possibly causing the truck to get stuck, injuring persons in a work zone, or damaging infrastructure. None of these results are acceptable.



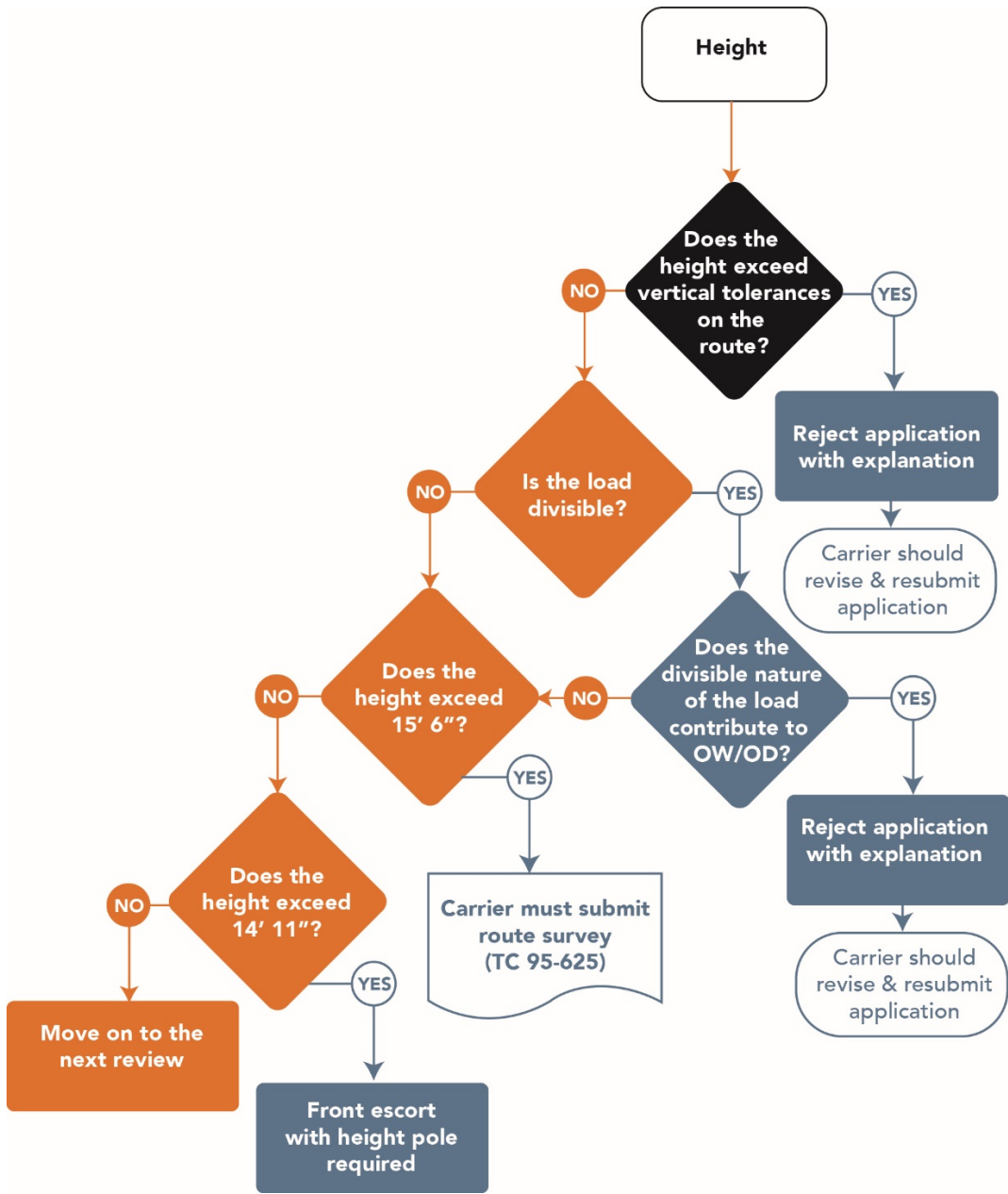


Figure 5.1 Height Review

## Chapter 6 Length

The next dimension to be reviewed in the OW/OD office is the length. The length of the loads is important for multiple reasons. One of the most obvious reasons is that excessive length can make it impossible to navigate some turns on the specified route. Another reason to examine the length is to check for excessive overhang in the front or back that could have an adverse effect on safety. Finally, load length determines what type of route the load is permitted to travel on and whether or not the load is bound to the National Network.

### 6.1 Length Review

The legal dimensions for trucks in Kentucky are divided into two categories: STAA and Non-STAA trucks. STAA refers to the Surface Transportation Assistance Act of 1982, which established the National Truck Network. This network permits trucks with larger dimensions and trucks with these dimensions are referred to as STAA trucks. STAA trucks are allowed a 53-foot trailer with any size tractor and Non-STAA trucks are allowed an overall length of 65 feet. The legal length for STAA straight trucks is 45 feet and Non-STAA straight trucks are allowed a length of 26-1/2 feet.

With this in mind, the first question to ask is if the load can navigate all turns and obstacles. If the load cannot navigate all turns and obstacles, the application is rejected along with an explanation. If the truck is able to navigate all turns and obstacles, then the OW/OD group must check for overhang. On the length review flowchart, the question about navigating all turns and obstacles is highlighted in yellow because there is not always sufficient information for OW/OD personnel to determine if the load is able to navigate all turns and obstacles. As such, OW/OD personnel must rely on intuition or their knowledge of previous loadings that were able to navigate all turns and obstacles along the same route and assume the geometry of these intersections has not changed in a way that would prevent the load from navigating all of the turns and obstacles from the origin to the destination.

If overhang is present, it needs to be determined if the unit is a single or combination unit. Combination units are not allowed to have overhang in the front and their applications are rejected with an explanation. They are however permitted to have overhang at the rear as long as it does not exceed 1/3 of the trailer length. If the rear overhang of a combination unit exceeds 1/3 of the trailer length, the application is rejected with an explanation.

Single units may have overhang in the front as long as it is not greater than 10 feet. If the front overhang on a single unit is greater than 10 feet, the application is rejected with an explanation. A single unit may have rear overhang as long as it does not exceed 1/3 of the trailer length. If the rear overhang exceeds 1/3 of the trailer length, the application is rejected with an explanation.

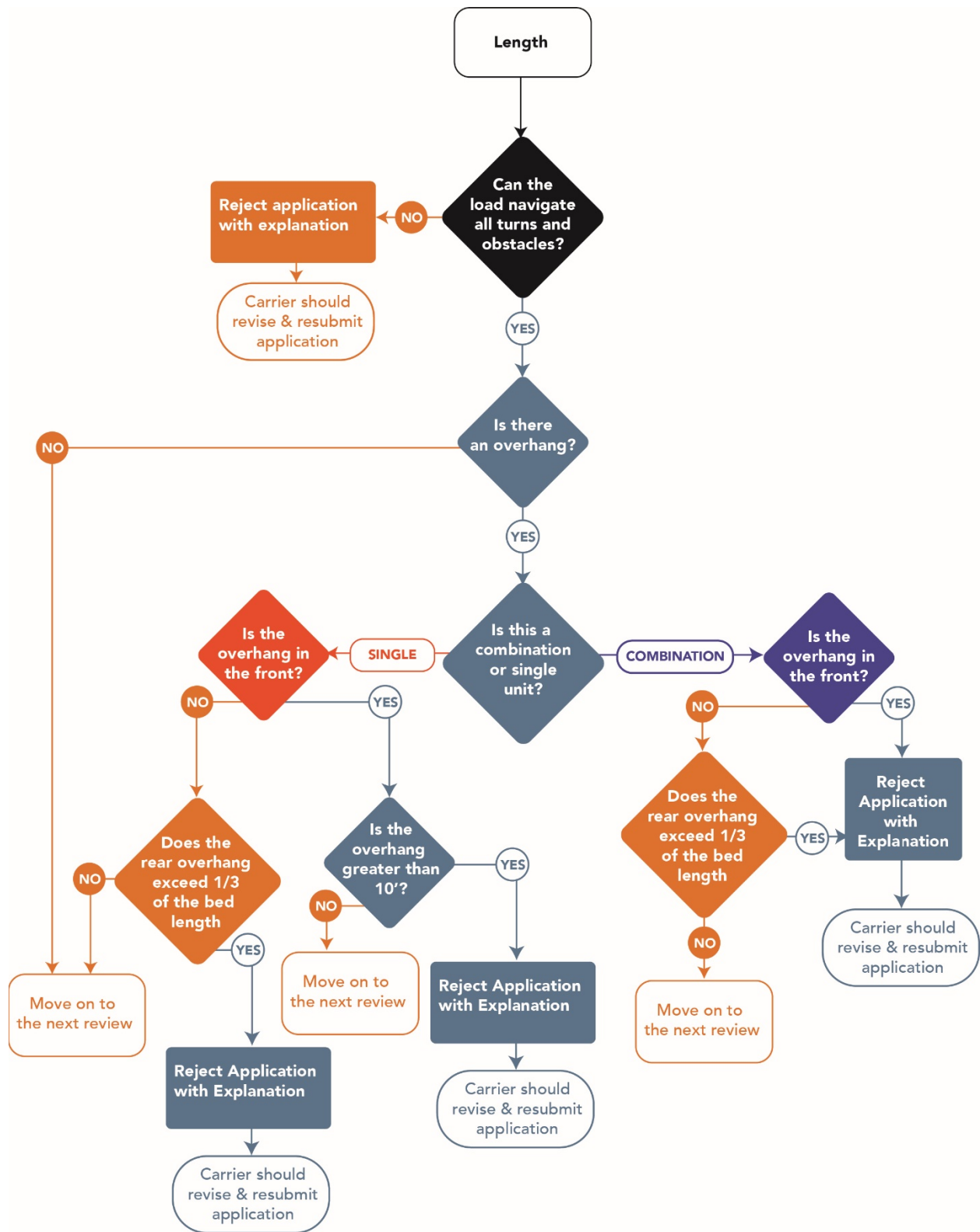


Figure 6.1 Length Review

## Chapter 7 Width

Width is the final dimension OW/OD personnel review. Load width is a critical element that must be considered in the review process. If the load exceeds the lateral clearance afforded by the highway it is traveling on, it cannot navigate the road safely by itself and must be examined in greater detail to determine if it needs escorts or can be moved safely at all. On Kentucky interstates and designated highways, the legal operating width is 8' 6". All other state-maintained highways have an operating width of 8 feet.

### 7.1 Width Review

If a load's width does not exceed the legal operating width of its route, the OW/OD office moves to the next check. If load width exceeds the legal operating width along its intended route, it must be checked for divisibility. If the load is divisible, the OW/OD office determines whether its divisibility contributes to it being over-dimensional. If the load's divisibility contributes to it being over-dimensional, the OW/OD office rejects the load and the carrier must revise and resubmit the application.

If the load exceeds the legal operating width for its route but is not divisible, OW/OD personnel check whether the load is more than 21 feet wide. If it is less than 21 feet wide, the office proceeds with the next check. But if the load exceeds 21 feet in width, a TC 95-625 route survey must be completed. If the route survey is considered legitimate, the OW/OD offices moves to the next check. If the survey is not deemed legitimate, the carrier must revise and resubmit the route survey. A legitimate route survey is one that has been filled out correctly and contains all of the required information on the TC 95-625 form. Figure 7.1 illustrates the workflow followed during a width review.

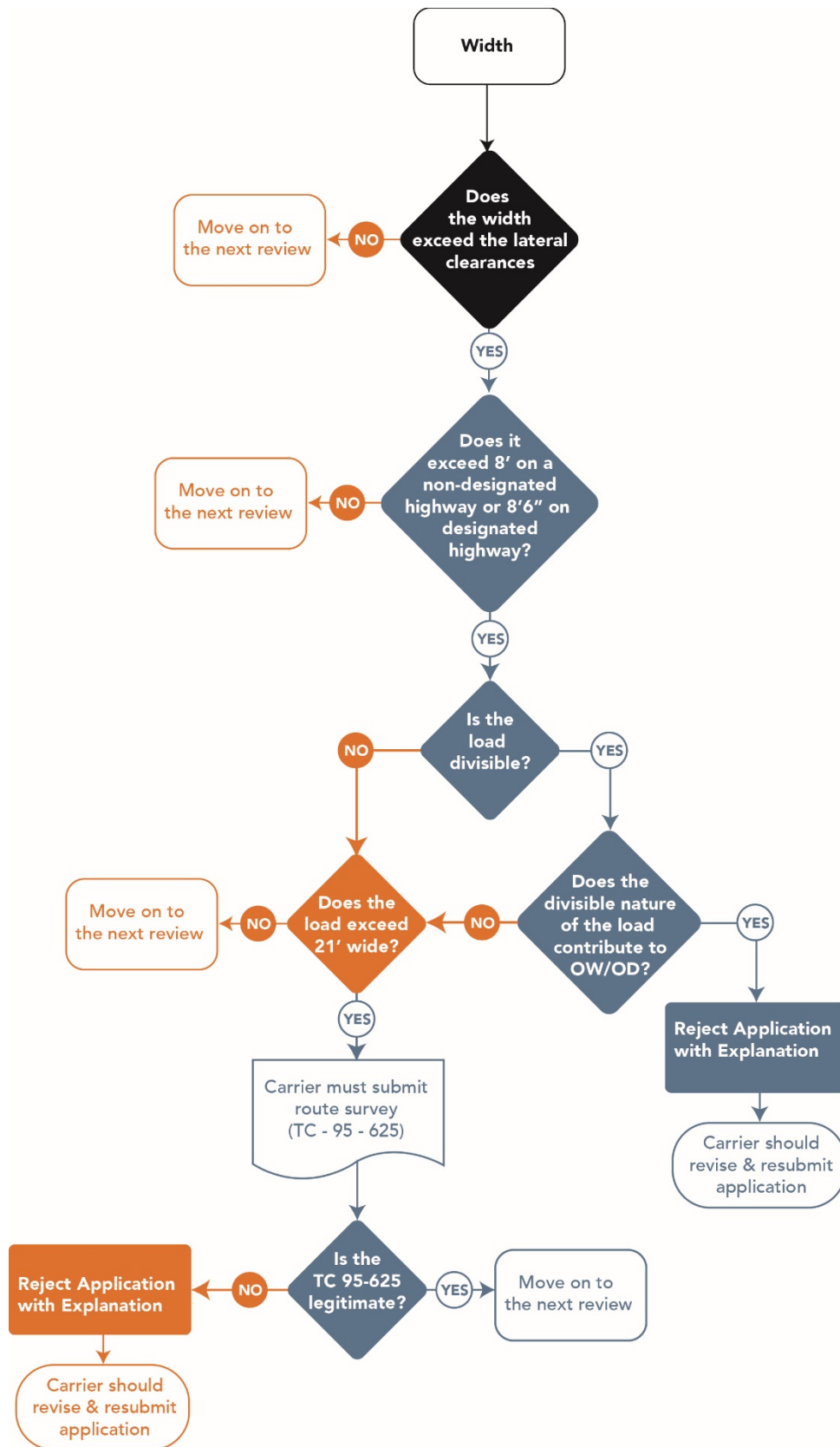


Figure 7.1 Width Review

## Chapter 8 Route

A truck's route dictates what load characteristics are acceptable. Interstates and designated highways generally support loads of greater length, width, and weight unless there are posted restrictions governing load dimensions.

### 8.1 Route Review

To make routing determinations, the OW/OD office first examines the origin and destination of the proposed route. If the proposed route does not connect origin and destination, the application is rejected and the carrier must revise and resubmit the application. If the route connects origin and destination, OW/OD personnel check for route restrictions. If there are no restrictions, they move to the next check. If restrictions exist, they check whether the load exceeds the restrictions. If the load exceeds the restrictions, it is rejected and the carrier must revise and resubmit the application. If the load does not exceed the restrictions but OW/OD personnel determine its presence on the route is detrimental to public safety or convenience, it is rejected and the carrier must revise and resubmit the application.

After questions about route restrictions are resolved, OW/OD personnel determine whether the route is on the National Truck Network. If it is on the National Network and is on the shortest path, they move to the next stage of review. If the route is off the National Truck Network, OW/OD personnel determine if it is on the shortest two-lane route available. If it is not the shortest two-lane route available, the application is rejected and the carrier must revise and resubmit the application.

If the route is off the National Truck Network and it is on the shortest two-lane route available, the OW/OD office evaluates whether the route has an AAA rating (80,000 pounds). If the route is AAA-rated, personnel check whether the load exceeds 160,000 pounds. If the load is over 160,000 pounds the application is sent to the Bridge Preservation group for analysis. The Bridge Preservation group determines if the route can handle the proposed load and sends the results to the OW/OD group. If the route cannot handle the proposed load, the application is rejected and the carrier must revise and resubmit the application. If the load does not exceed 160,000 pounds, OW/OD personnel reassess whether it is detrimental to public safety or convenience. If not, the OW/OD group moves to the next check. If it deems the load is detrimental to public safety or convenience, it is rejected and the carrier must revise and resubmit their application.

If the proposed route is not AAA-rated, OW/OD personnel check if it exceeds 80,000 pounds. If the load exceeds 80,000 pounds and there are bridges along the route, the application is sent to Bridge Preservation for analysis. If there are no bridges along the route, the OW/OD office investigates whether it is detrimental to public safety or convenience. If it is, the application is rejected and the carrier must revise and resubmit the application. If the load poses no adverse effects, the OW/OD group moves to the next check.

If the route is not AAA-rated and the load does not exceed 80,000 pounds, OW/OD personnel establish whether it is detrimental to public safety or convenience. If it is, the application is rejected and the carrier must revise and resubmit the application. If public safety or convenience are unaffected by the load and routing, the OW/OD group proceeds to statutory review. This process is summarized in Figures 8.1 and 8.2.

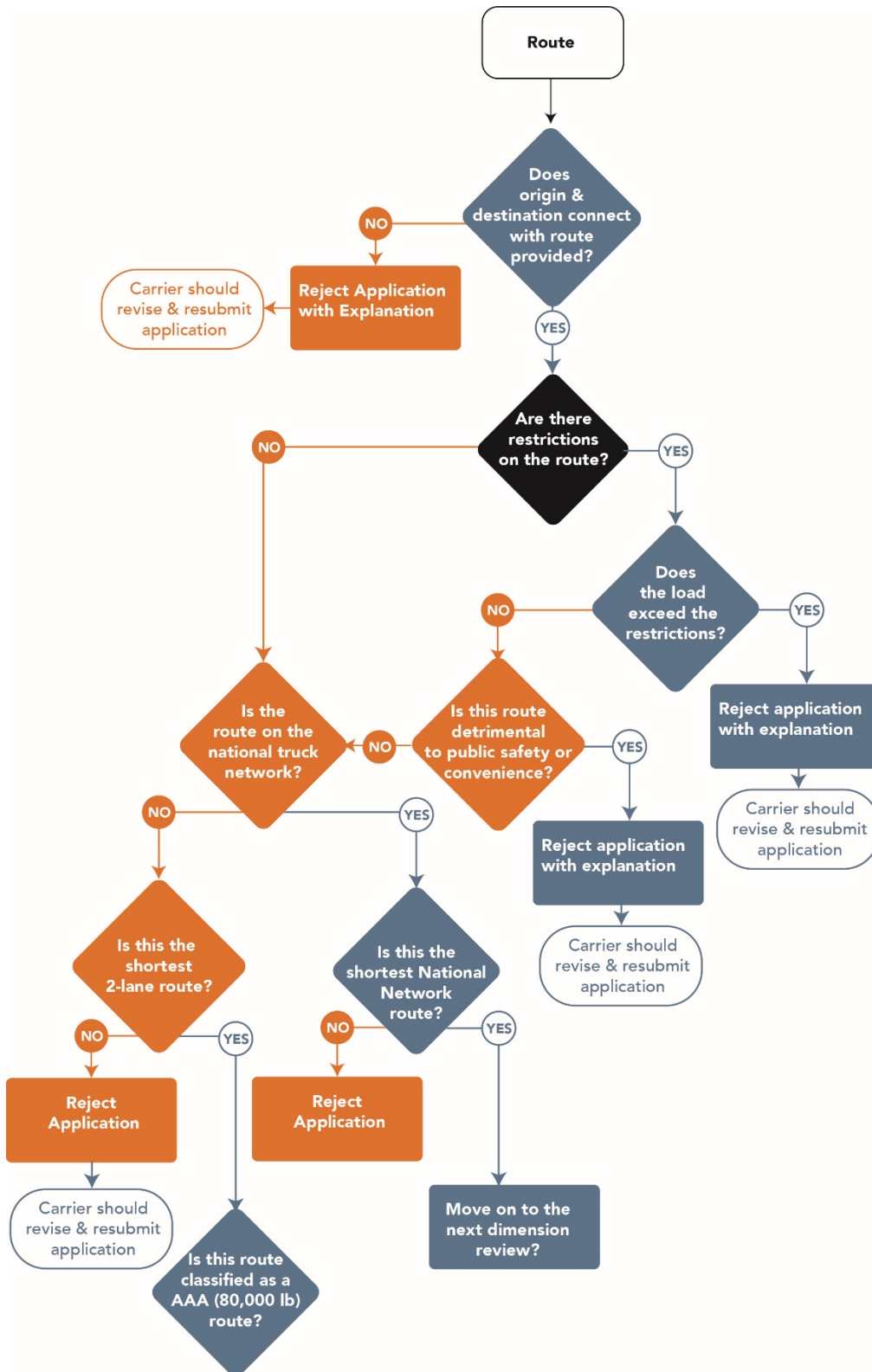


Figure 8.1 Route Review A

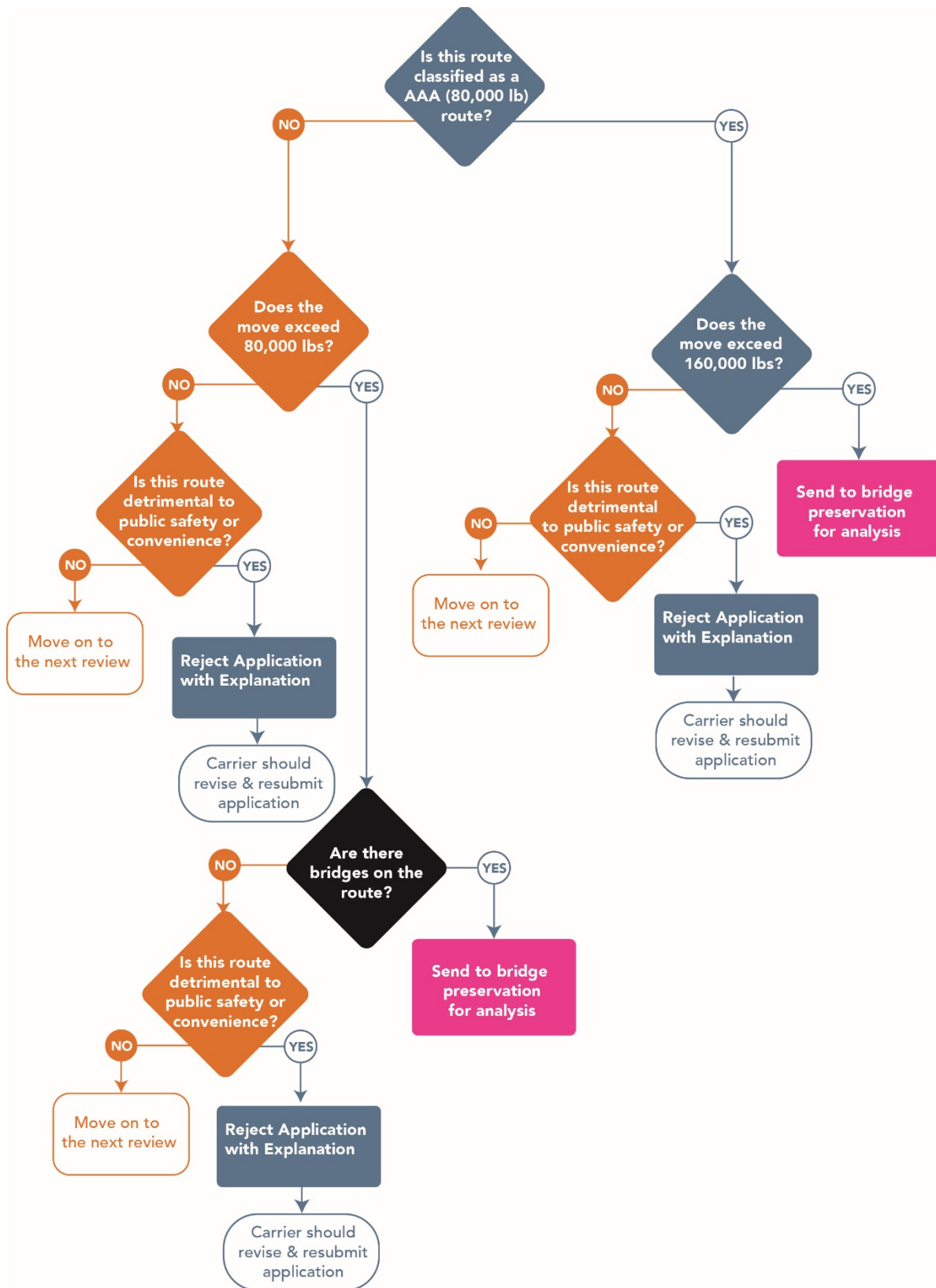


Figure 8.2 Route Review B



## Chapter 9 Statutory

Statutory checks are performed (via CVIEW) to ensure motor carriers are in compliance with all federal and state other laws, regulations and requirements not covered by the previous checks and has the appropriate credentials to operate in Kentucky. This check is performed to verify that the carrier has the following credentials: IRP (International Reciprocal Plan), KIT (Kentucky Intrastate Tax), KYU (Kentucky Weight Distance Tax), USDOT (United States Department of Transportation Number), UCR (Unified Carrier Registration), IFTA (International Fuel Tax Agreement), Insurance, and KY For - Hire (Kentucky Intrastate for For-Hire License). If the carrier is not required to have these credentials, the OW/OD office moves onto the next stage of review (Escorts). If the carrier has all necessary credentials, and they are all active and in good standing, the OW/OD group moves on to the next stage of review. If any credentials are not active, the application is rejected and the carrier must resubmit the application once the problem is corrected.

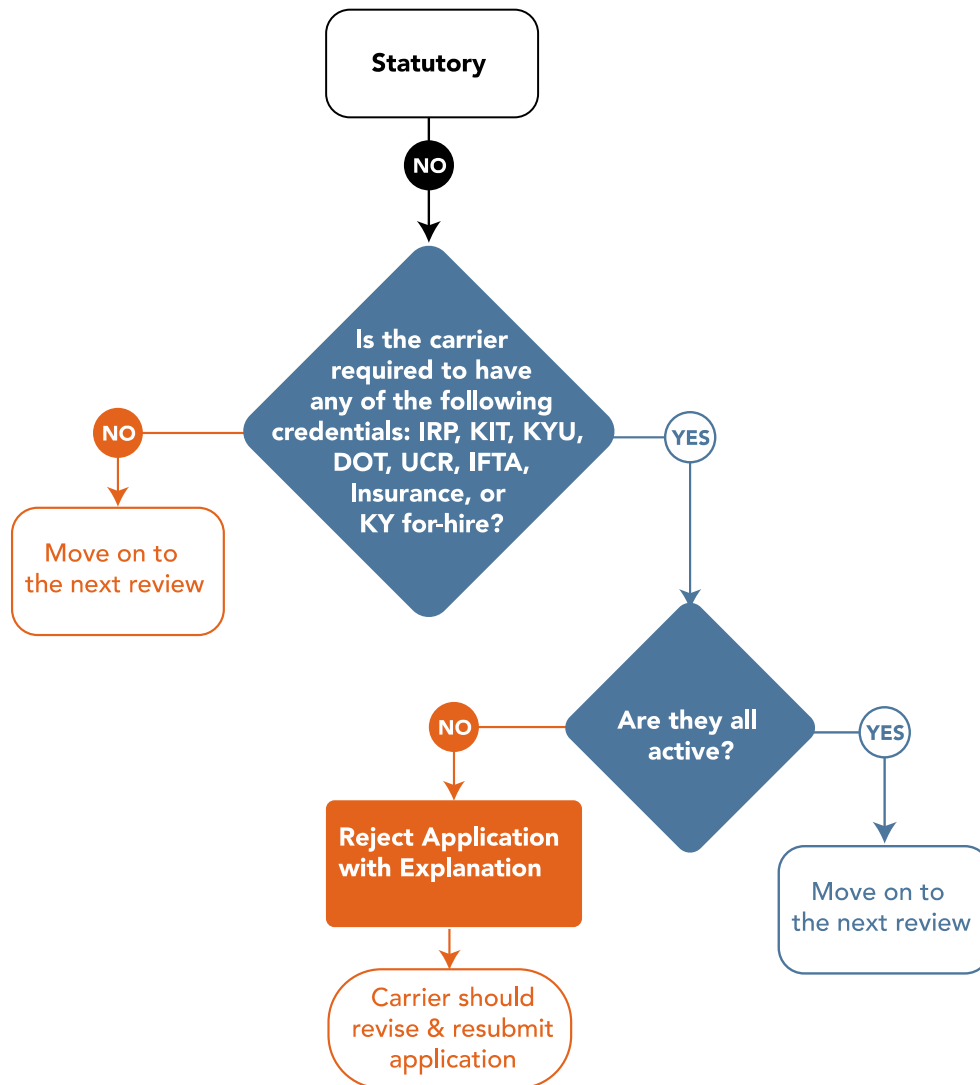


Figure 9.1 Statutory Review

## Chapter 10 Escorts

When the OW/OD group reviews a load to decide if escorts are needed, it first determines whether the load is a farm load. Farm loads have a different set of requirements than non-farm loads. If the load is a farm load, OW/OD personnel determine if the load will be traveling along a two-lane or four-lane road. If it is a two-lane road and the load is more than 12 feet wide, it needs a front escort. If the load is narrower than 12 feet, its length is examined to determine if it is over 85 feet. If the length exceeds 85 feet, it must have a rear escort. If the load does not exceed 12 feet in width or 85 feet in length, an escort is not required on a two-lane road. If the load is a farm load and the route is on a four-lane road, OW/OD staff must determine if the width exceeds 12 feet or if the length exceeds 110 feet. If either of these conditions are met, the load requires a rear escort.

If the load is not a farm load the OW/OD group answers several questions to determine what escorts, if any, are required. OW/OD staff first ask whether the non-farm load will travel on a two-lane or four-lane road. If the route is on a two-lane road, they determine if the rear overhang exceeds 10 feet. If it does, **one** rear escort is required. Width is checked next. If a load is more than 16 feet wide, it requires **two** front and **two** rear escorts. Height is examined after width. If a load exceeds 14 feet 11 inches in height, the load must have a front escort with a height pole. Next, OW/OD personnel examine the load length. If the load length exceeds 120 feet, it must be accompanied by **one** front and **two** rear escorts with a pivot/steerable dolly. Additionally, if the load is more than 12 feet wide **or** is greater than 85 feet long, it requires a front **and** rear escort. Finally, if a non-farm load traveling a two-lane road does not meet any of the above conditions, OW/OD staff check whether it exceeds 10 feet 6 inches in width or 75 feet in length. If either condition applies, a front escort is required. If none of the preceding scenarios apply, no escort is required on a two-lane road.

The decision tree for a non-farm load traveling on a four-lane road is similar to the preceding situation. First, OW/OD personnel determine if the non-farm load will be on a two- or four-lane road. If the route is on a four-lane road, they evaluate whether the rear overhang exceeds 10 feet. If it does, it requires **one** rear escort. Width is checked next. If it is more than 16 feet wide, **two** front and **two** rear escorts are required. After this, height is examined to determine whether it exceeds 14 feet 11 inches. If it does, a front escort with a height pole is required. OW/OD staff then check the load length to see if it exceeds 120 feet. If it does, **one** front and **two** rear escorts with a pivot/steerable dolly is required. On a four-lane road, if the load is more than 14 feet wide it must have a front escort. If the load exceeds 12 feet in width or 110 feet in length, it needs a rear escort. If none of the preceding scenarios apply, no escort is required on a four-lane road.

Figure 10.1 – 10.3 outline the process used to decide whether escorts are needed. It is important to remember that if a load satisfies one condition the user should not discontinue analysis. They must work through the flow chart from beginning to end to ensure that all appropriate requirements are met.

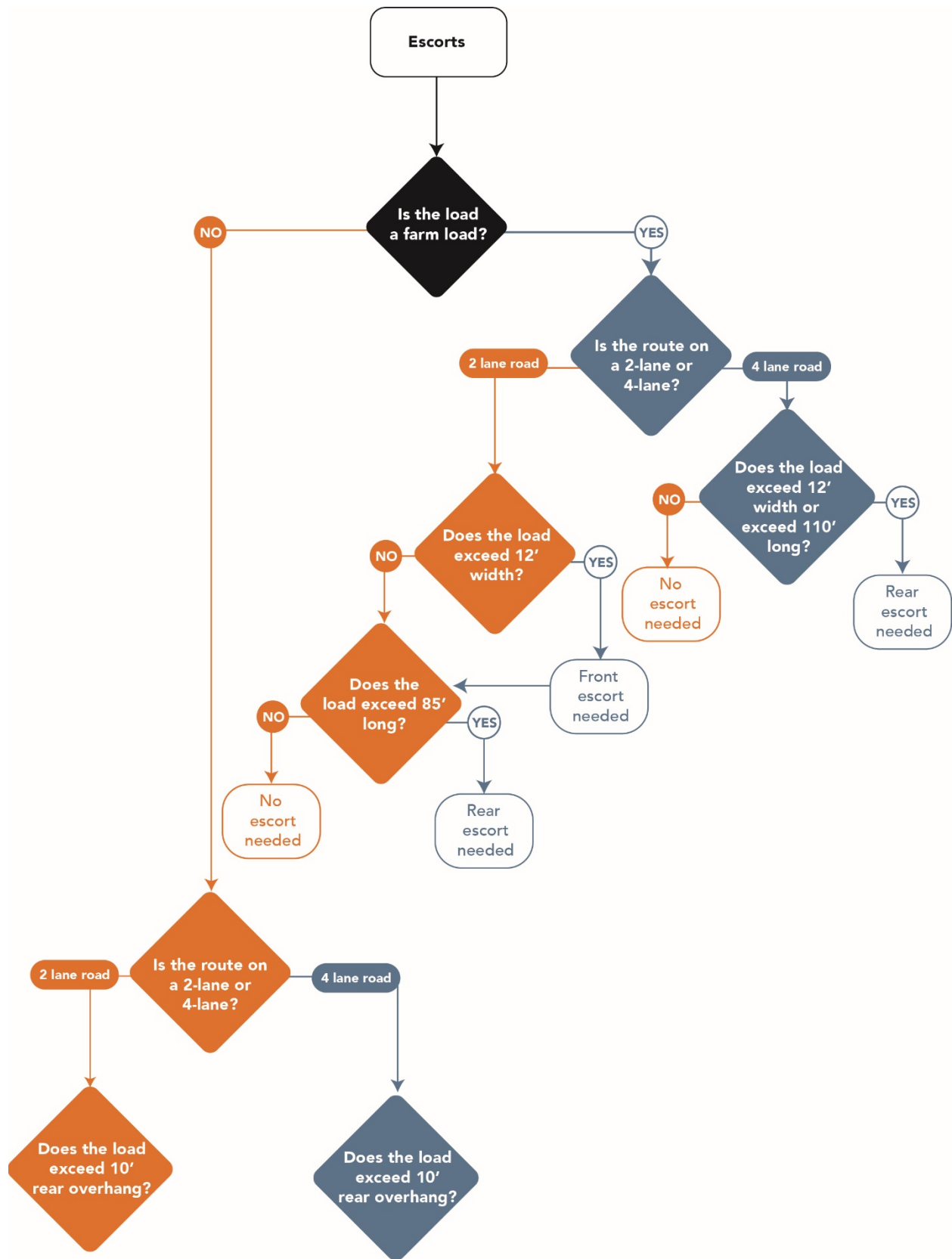


Figure 10.1 Escorts Review A

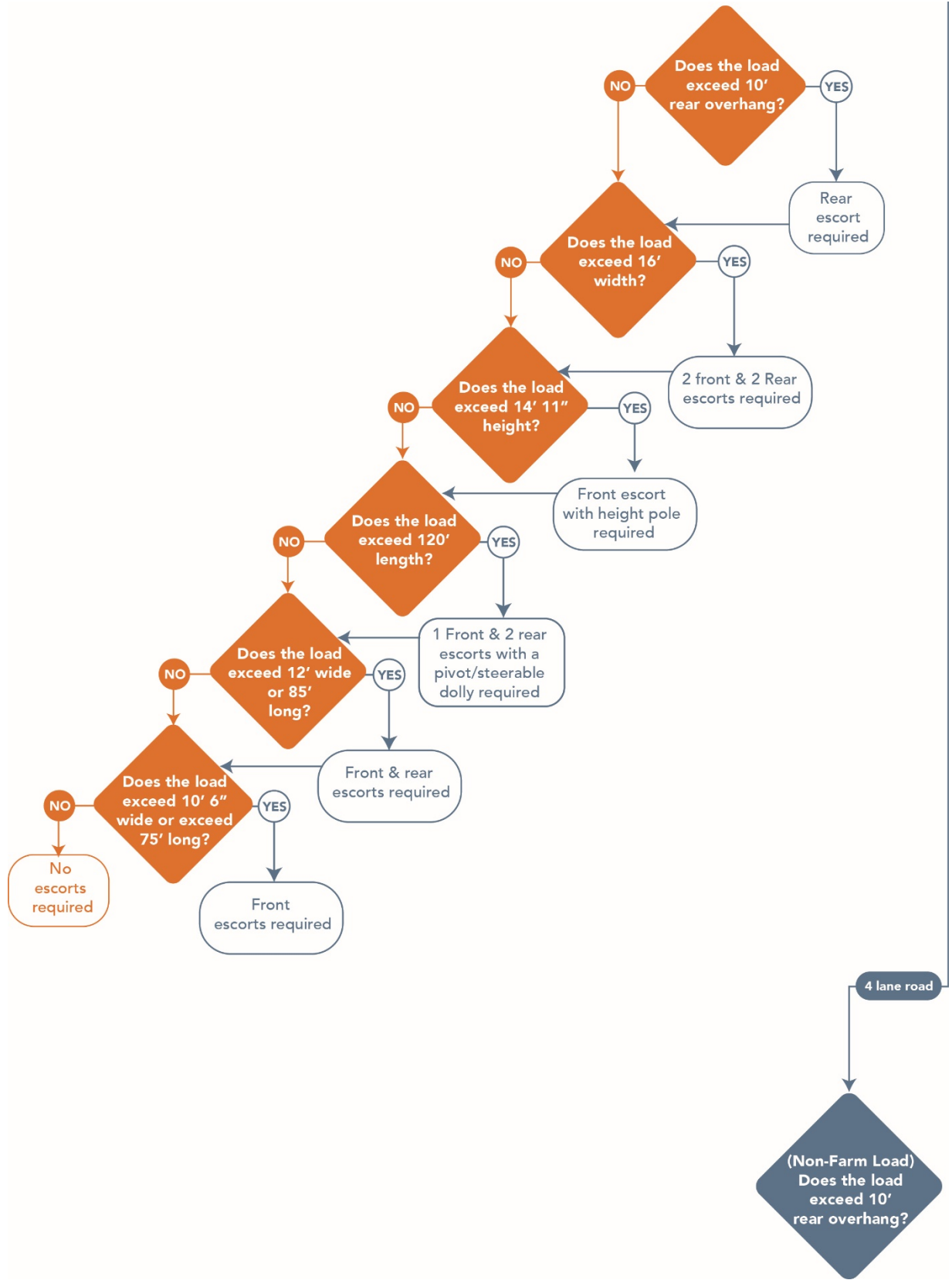


Figure 10.2 Escorts Review B

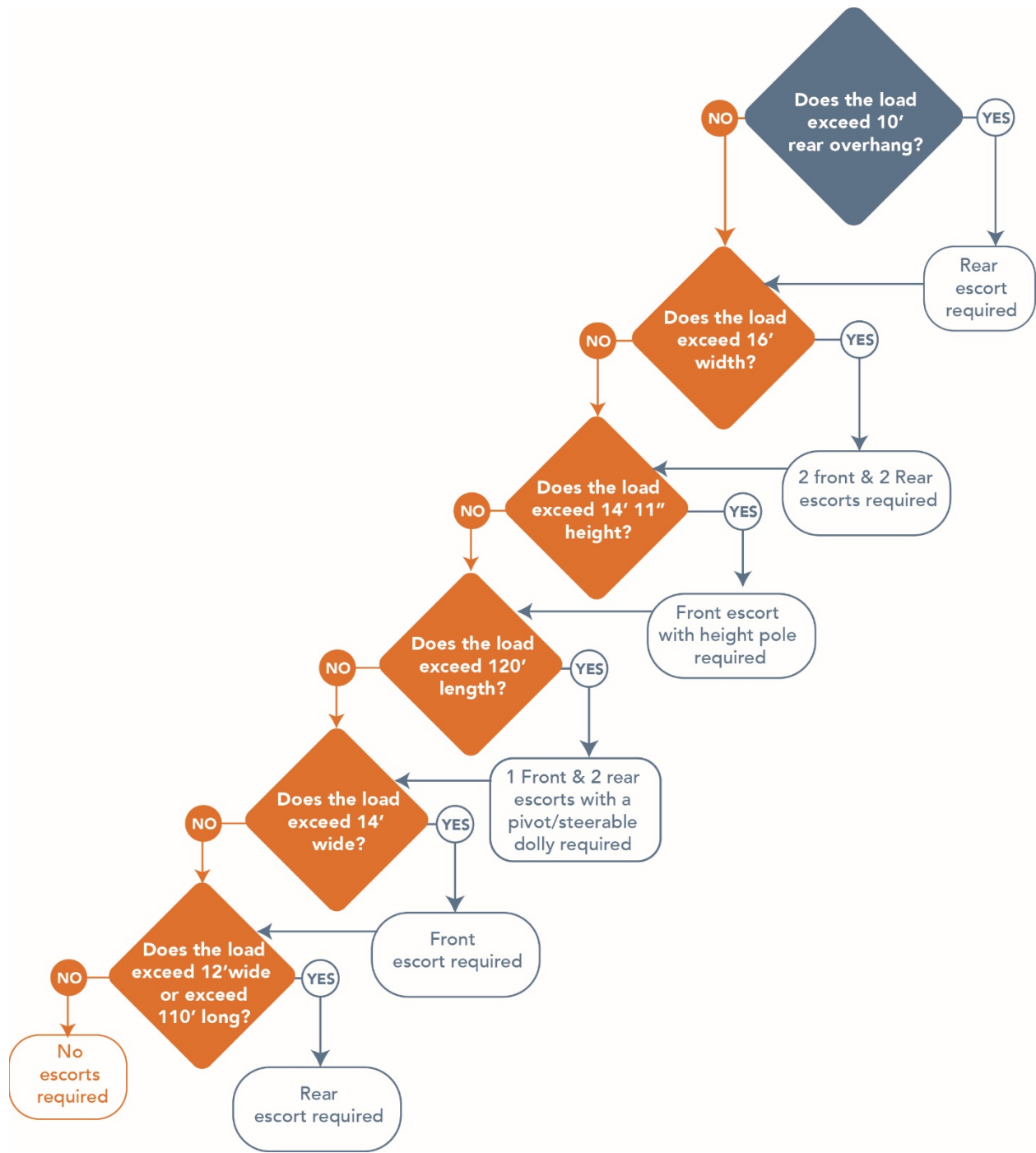


Figure 10.3 Escorts Review C

## Chapter 11 Annual Trip Permit

An annual permit is a truck-specific permit that allows a truck to move continuously throughout the state without having to contact the OW/OD office for approval. Annual permit applications may be submitted by fax, mail, or walk-in only. All annual permits are vehicle-specific. The original annual permit must be carried in the power unit at all times. It takes approximately 10-12 business days to process annual permit applications. The cost of an annual permit varies depending on the type of permit being applied for.

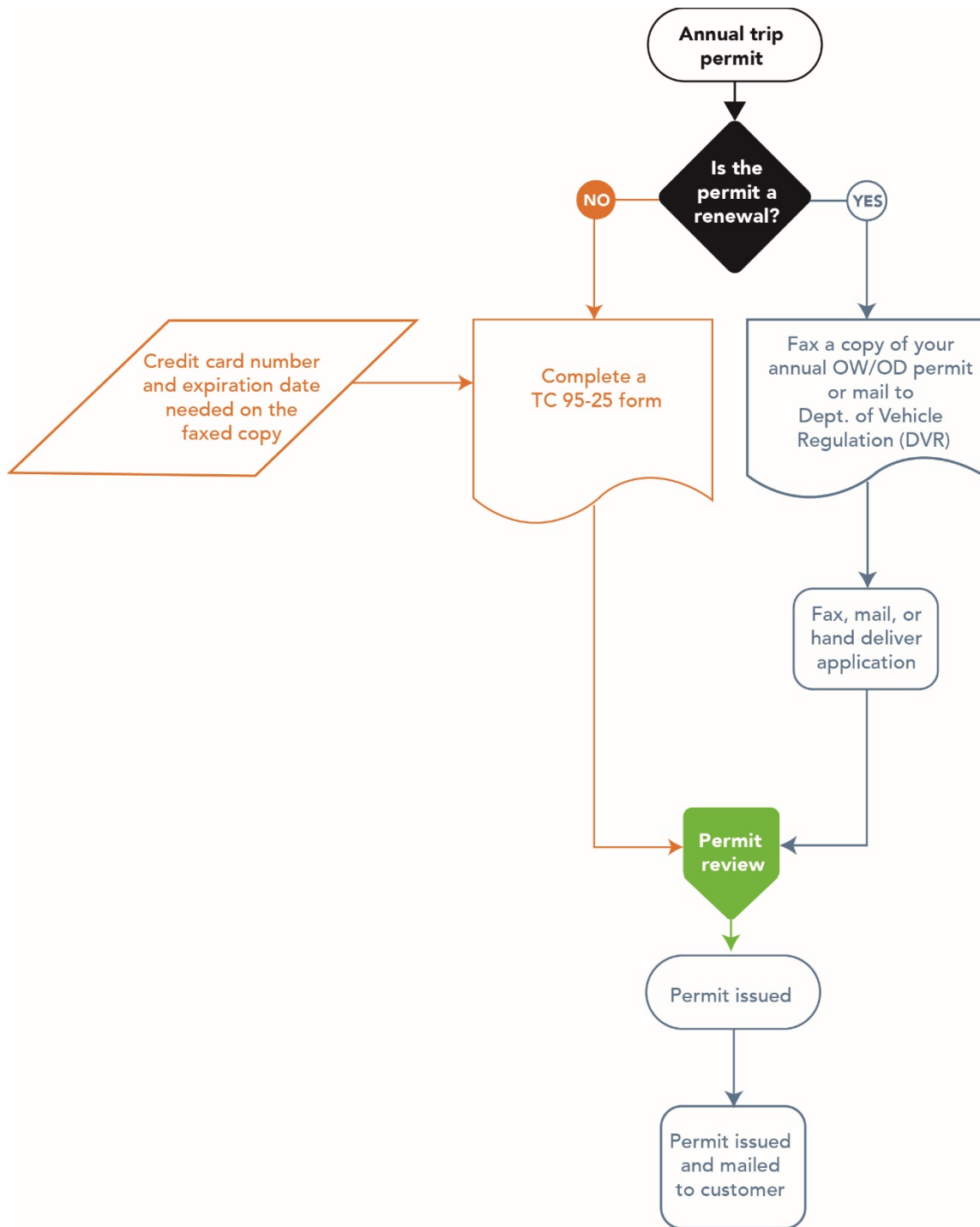
**Table 11.1** Annual Permit Types

Permit Type	Load Characteristics	Cost	Maximum Dimensions
A01	Non-divisible, less than 14 ft. wide	\$250	Width 13'11", Length 120'00", Height 13'06", Weight 160,000 lbs.
A02	Non-divisible, 14ft. to 16 ft. wide	\$500	Width 16'00", Length 120'00", Height 13'06", Weight 160,000 lbs.
A03	Farm, less than 14 ft. wide	\$80	Width 13'11" (All other dimensions and weight must be legal)
A04	Farm, 14ft. to 16 ft. wide	\$150	Width 16'00", Length 120'00", Height 13'06", Weight 160,000 lbs. (Dealerships Only)
A05	Metal Commodities Permit. Divisible or Non-Divisible	\$1,250	Weight Only: 120,000 lbs.
A06	Non-divisible steel, statewide (routes required)	\$500	Weight Only: 120,000 lbs.
A09	Feed Certificate	\$150	Weight Only: 88,000 lbs.
A10	Manufactured Homes	\$1,250	Width 16'00" wide, Length 120' 00", Height 15'00", Weight 160,000 lbs.

There are three ways to apply for an annual trip permit. The first way is to complete a TC 95-25 form and fax it to the OW/OD department. This form provides all the information the OW/OD group needs to issue an annual trip permit. Applications submitted via fax require a credit card payment and are subject to additional fees. The second application method is to fill out the application in person at the One Stop Shop, located on the second floor of the Kentucky Transportation Cabinet office building in Frankfort. The final application method is to fill out the TC 95-25 form and mail it to the Kentucky Transportation Cabinet Division of Motor Carriers OW/OD section.

Figure 11.1 illustrates the application process for obtaining an annual trip permit. Green pentagons represent the permit review process. The permit review process is discussed later in the document. One issue determines which path the application process takes — whether the permit is a renewal or new application. Current annual permit holders may fax a copy of their current permit along with a credit card information and expiration date to apply for a permit renewal. They may also mail a copy of their current permit along with credit card information and expiration date to renew their permit.

If the customer does not have a current annual permit, they may fill out a TC 95-25 form and fax, mail, or hand deliver it to the One Stop Shop at the Kentucky Transportation Cabinet. The application is reviewed. If approved, the permit is mailed to the customer.



**Figure 11.1** Annual Trip Permit Overview

### 11.1 Annual Trip Review

The annual trip permit review starts with statutory checks via CVIEW. Statutory checks determine whether the motor carrier is in compliance with all state and federal laws, requirements and regulations not covered in previous stages and has the appropriate credentials to operate in Kentucky. This check is performed to verify that the carrier has the following credentials: IRP (International Reciprocal Plan), KIT (Kentucky Intrastate Tax), KYU (Kentucky Weight Distance Tax), USDOT (United States Department of Transportation Number), UCR (Unified Carrier Registration), IFTA (International Fuel Tax Agreement), Insurance, and KY for Hire (Kentucky Intrastate For-Hire License).

The OW/OD office first checks to see if these credentials are needed. If they are, they check to see if they are all active. If any credentials are not active, the application is rejected and the carrier must resubmit the application once the problem is corrected. If the credentials are required and they are active, the next check is to determine if the load exceeds 120 feet in length. If it exceeds this length, the application is rejected and the carrier must revise and resubmit the application. If the load is less than 120 feet in length, the remaining checks are the same as for carriers who are not required to have the KIT, KYU, USDOT, UCR, IFTA, Insurance, and KY for Hire credentials.

If there is no requirement for the carrier to hold these credentials, the OW/OD office determines if the load exceeds a width of 16'. If so, the application is rejected and the carrier must revise and submit a new application. If the load does not exceed 16' in width, they check to see if the height exceeds 13'6". If it does, they determine if it is a manufactured home. If it is a manufactured home, an A10 Manufactured Home Annual Permit is issued with escorts assigned as needed. If not a manufactured home, the application is rejected and the carrier must revise and submit a new application. If the load does not exceed 13'6" in height, the next check is to determine whether the load is farm equipment. Figure 11.2 diagrams this process. The workflow for loads containing farm equipment is reviewed next.



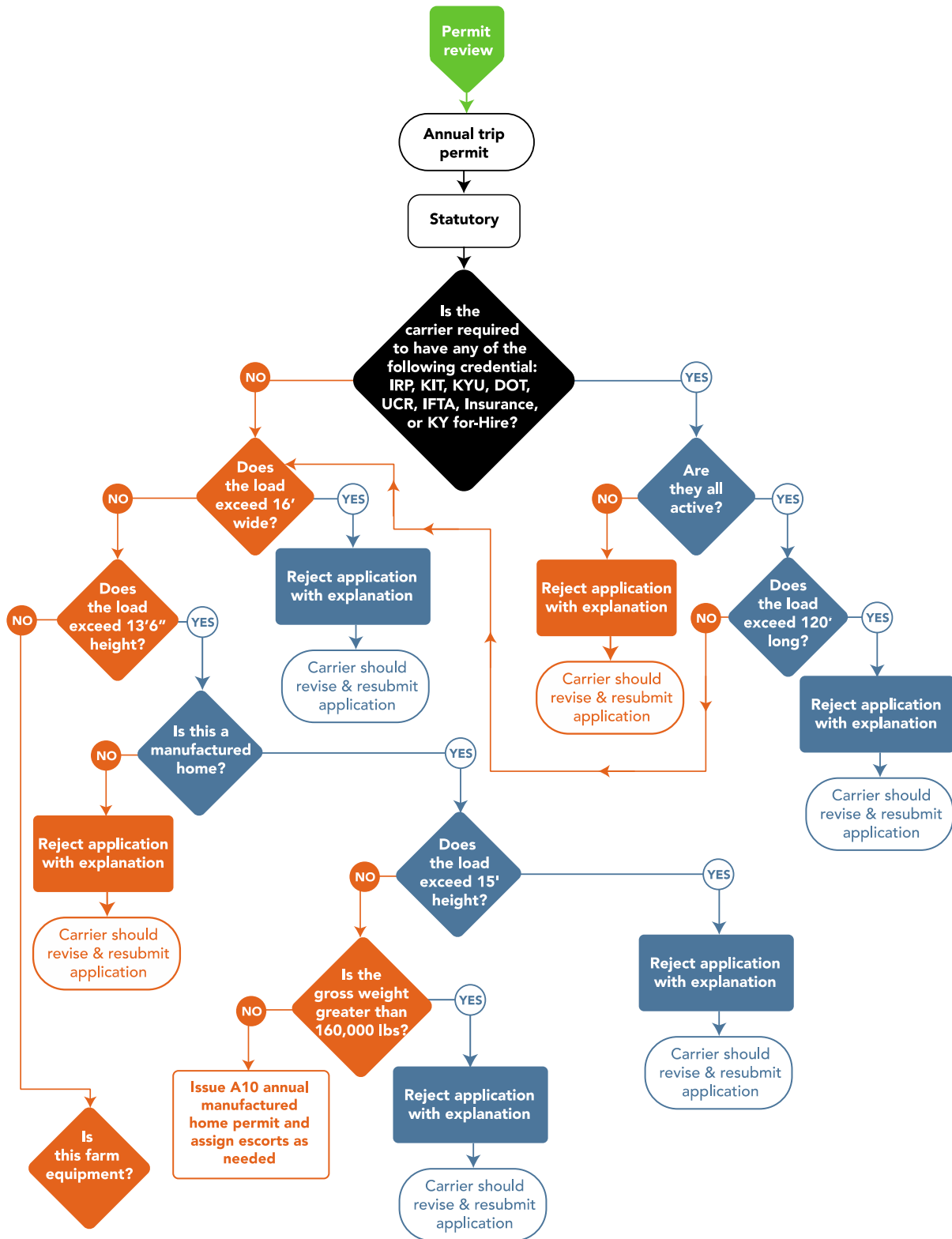


Figure 11.2 Annual Permit Review

### **11.2 Annual Trip Permit Review Farm Load Requirements**

If a load contains farm equipment, OW/OD staff first determine if the gross weight of the load is less than 160,000 pounds. If it is not, the application is rejected and the carrier must apply for a single trip permit. If the load is less than 160,000 pounds, the steer axle weight is checked to see if it is greater than 20,000 pounds. If it exceeds 20,000 pounds, the application is rejected and the carrier must revise and resubmit the application. If it does not exceed 20,000 pounds, the OW/OD staff move onto the next check.

Next, OW/OD personnel evaluate whether a single axle weight is greater than 24,000 pounds. If it is, the application is rejected and the carrier must revise and resubmit the application. If not, they check to see if a tandem axle weight is greater than 45,000 pounds on a maximum of five axles. If so, the application is rejected and the carrier must revise and resubmit the application. If not, tandem axles are checked to determine if they are greater than 48,000 pounds on a maximum of six axles. If they exceed 48,000 pounds, the application is rejected and the carrier must revise and resubmit the application. If a tandem axle does not exceed 48,000 pounds on 6 axles, the OW/OD group moves onto the next check.

The next check is to determine if a tridem axle weight is greater than 60,000 pounds. If it is, the application is rejected and the carrier must revise and resubmit the application. If the weight of a tridem axle does not exceed 60,000 pounds, the load is checked to determine if a five axle combination unit weighs more than 96,000 pounds. If it exceeds this weight, the application is rejected and the carrier must revise and resubmit the application. If it does not exceed 96,000 pounds, the OW/OD group checks to see if a six axle combination unit weighs more than 120,000 pounds. If it does, the application is rejected and the carrier must revise and resubmit the application. If the combination load does not exceed 120,000 pounds, OW/OD moves onto the next check.

The next check is to determine if the load is divisible. If the load is divisible, it must be determined if its divisibility contributes to it being overweight or over-dimensional. If yes, the application is rejected and the carrier must revise and resubmit the application. If the load is not divisible or if the load is divisible but its divisibility does not contribute to it being overweight or over-dimensional, it must be determined if the load is going to or originating from a dealership. If the load is going to or originating from a dealership, OW/OD staff checks whether the load exceeds 13'11" in width. If it does, the OW/OD personnel must refer to the flowchart for pilot car requirements. At this point, an A04 Annual Permit can be issued and escorts are assigned as needed. If the load exceeds the 13'11" width restriction, the application is rejected and the carrier must revise and resubmit the application.

If the load is not going to or originating from a dealership, the OW/OD group must still check to see if the load exceeds 13'11" wide. If the load is wider, the application is rejected and the carrier must revise and resubmit the application. If the load does not exceed this dimension, the OW/OD staff must refer to the escort requirements flowchart for pilot car requirements. At this point, an A03 Farm Annual Permit can be issued and escorts are assigned as needed. Figures 11.3 – 11.5 visualize this workflow.



Figure 11.3 Annual Permit Review with Farm Equipment A

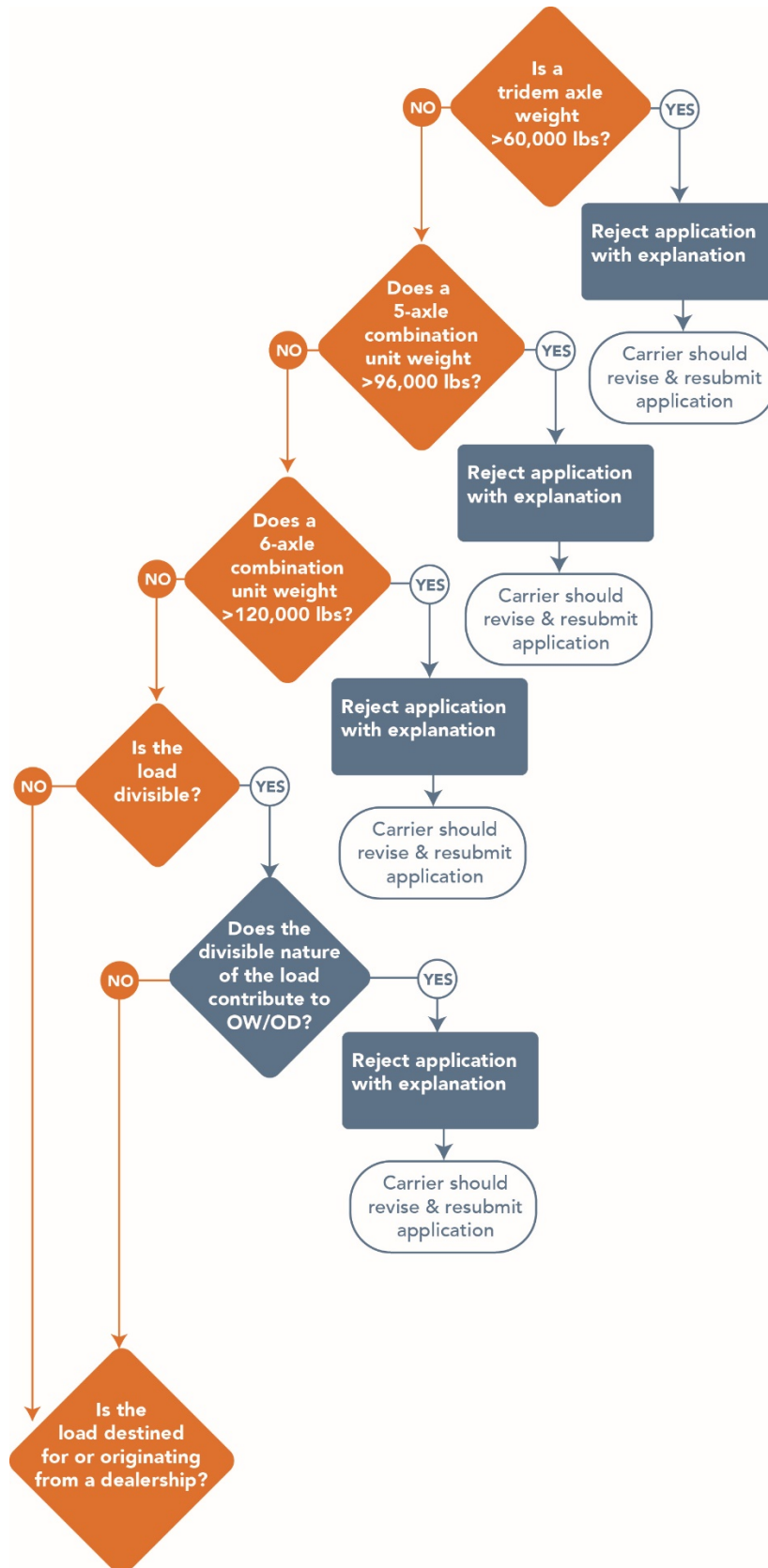


Figure 11.4 Annual Permit Review with Farm Equipment B

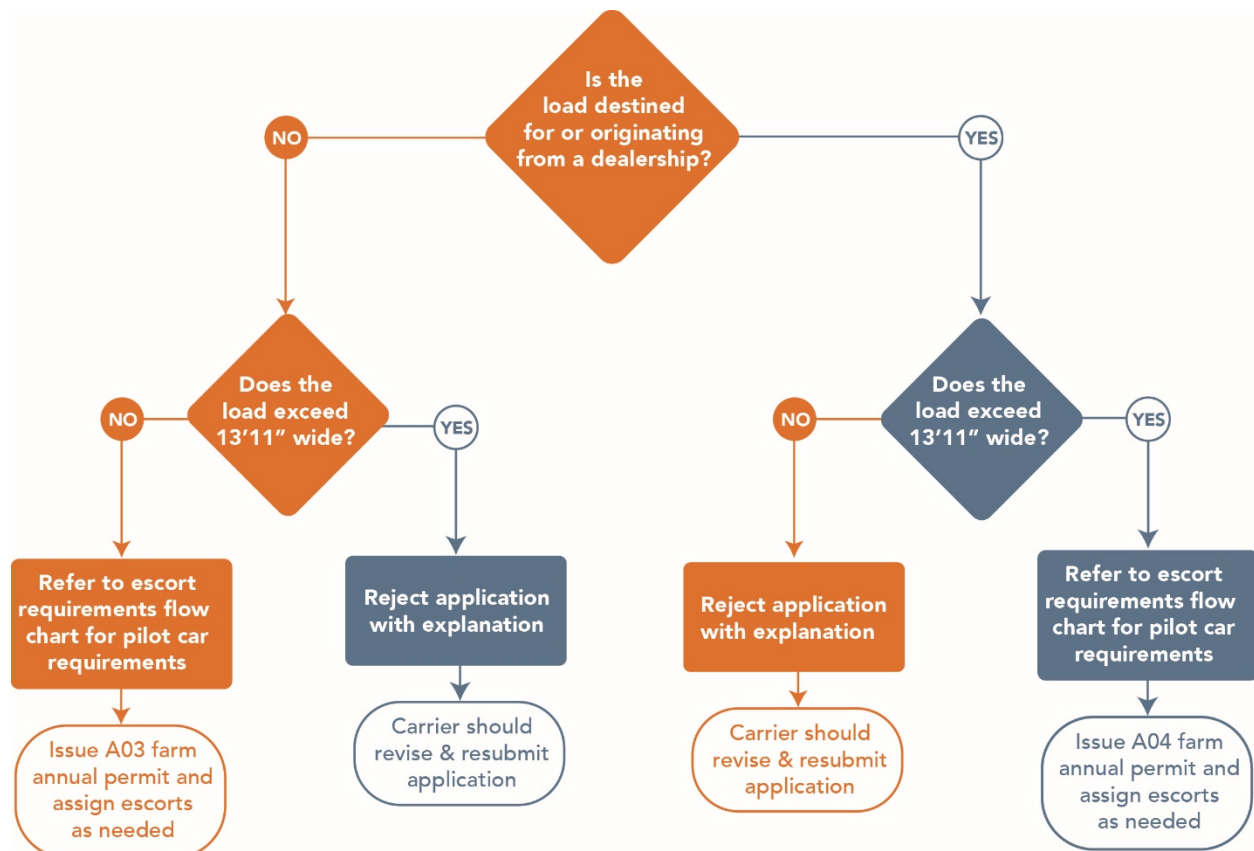


Figure 11.5 Annual Permit Review with Farm Equipment C

### **11.3 Annual Trip Permit Review Without Farm Equipment Load Requirements**

When the OW/OD office reviews an annual trip permit for loads that do not include farm equipment, it must determine if the load contains feed for livestock or poultry. If so, OW/OD staff determine if the load is going to a farm or a facility housing livestock or poultry. If it is not, the application is rejected and the carrier is to revise and resubmit the application. If the load is going to a farm or a facility housing livestock or poultry, OW/OD staff must evaluate whether the gross weight exceeds 88,000 pounds. If it does, the application is rejected and the carrier must revise and resubmit the application. If the gross weight does not exceed 88,000 pounds, the next check is to determine if the steering axle weight exceeds 20,000 pounds. If so, the application is rejected and the carrier must revise and resubmit the application. If the steering axle weight is less than 20,000 pounds, the permitting staff must check to see if a single axle weight is greater than 22,000 pounds. If the weight of any single axle exceeds 22,000 pounds, the application is rejected and the carrier needs to revise and resubmit the application. If not, OW/OD staff check to see if a tandem axle weight is greater than 37,400 pounds. If a tandem axle weight is greater than 37,400 pounds, the application is rejected and the carrier must revise and resubmit the application. If not, the next check is to determine if a tridem axle weight is greater than 52,800 pounds. If so, the application is rejected and the carrier is to revise and resubmit their application. If not, an A09 annual feed certificate permit is issued.

If the load does not contain feed for livestock or poultry, OW/OD staff must determine if the load contains steel materials. If so, OW/OD staff assess whether the load is over 8'6" in width. If it is, an A01 or A02 permit is issued. An A01 permit is issued for non-divisible loads less than 14 feet wide. An A02 permit is issued for non-divisible loads between 14 and 16 feet wide.

If the load is less than 8'6" wide, OW/OD personnel check whether the load is being delivered to or originates from a facility manufacturing products in Kentucky or a facility used to store products made in Kentucky. If not, the application is rejected and the carrier must revise and resubmit the application. If so, OW/OD staff assess whether the load is divisible. If the load is divisible, OW/OD staff must check to see if any trip within Kentucky will exceed 150 miles. If yes, the application is rejected and the carrier must revise and resubmit it.

If the load is divisible and no trips will exceed 150 miles, OW/OD personnel check to see if the gross weight exceeds 120,000 pounds. If it does, the application is rejected and the carrier must revise and resubmit it. If the load does not exceed 120,000 pounds, the steer axle weight is checked. If it exceeds 20,000 pounds, the application is rejected and the carrier must revise and resubmit the application. If the steer axle does not exceed 20,000 pounds, the axle weights are checked to see if a single axle weight is greater than 24,000 pounds. If a single axle exceeds 24,000 pounds, the application is rejected and the carrier must revise and resubmit it. If a single axle does not exceed 24,000 pounds, the OW/OD staff evaluate whether a tandem axle weight is greater than 45,000 pounds on a maximum of five axles. If the yes, the application is rejected and the carrier must revise and resubmit. If a tandem axle does not exceed 45,000 pounds on five axles, OW/OD staff check whether the tandem axle weight is greater than 48,000 pounds on six axles. If it is, the application is rejected and the carrier must revise and resubmit it. If a tandem axle weight does not exceed 48,000 pounds on six axles, OW/OD personnel determine if a tridem axle weight exceeds 60,000 pounds. If it does, the application is rejected and the carrier must revise and resubmit it. If a tridem axle weight does not exceed 60,000 pounds, the next check is whether a five axle combination unit weights more than 96,000 pounds. If so, the application is rejected and the carrier must revise and resubmit the application. If a five axle combination unit does not exceed 96,000 pounds, OW/OD staff check to see if a six axle combination unit weighs more than 120,000 pounds. If it does, the application is rejected and the carrier must revise and resubmit the application. If a six axle combination unit does not exceed 120,000 pounds, OW/OD staff refer to the escort requirement flow chart for pilot car requirements, issues an A05 steel annual permit, and assigns escorts as needed.

If the load is a steel load that is less than 8'6" wide and is being delivered to or originating from a facility that manufactures products in Kentucky or a facility used to store those products, and it is non-divisible, OW/OD staff check if the gross weight exceeds 120,000 pounds. If yes, the application is rejected and the carrier must revise and resubmit it. If the load does not exceed 120,000 pounds, the steer axle weight is checked. If steel axle weight is over 15,000 pounds, the application is rejected and the carrier must revise and resubmit the application. If the steer axle is less than 15,000 pounds, the axle weights are checked to determine if a single axle weight is greater than 20,000

pounds. If yes, the application is rejected and the carrier must revise and resubmit it. If a single axle does not exceed 24,000 pounds, the OW/OD staff check whether a tandem axle weight is greater than 40,000 pounds. If yes, the application is rejected and the carrier must revise and resubmit. If the tandem axle does not exceed 40,000 pounds, OW/OD personnel determine if a tridem axle weight exceeds 65,000 pounds. If so, the application is rejected and the carrier must revise and resubmit it. If a tridem axle weight does not exceed 60,000 pounds, the next check is whether a five axle combination unit weighs more than 96,000 pounds, if the yes, the application is rejected and the carrier must revise and resubmit the application. If a five axle combination unit does not exceed 96,000 pounds, OW/OD staff check to see if a six axle combination unit weighs more than 120,000 pounds. If a six axle combination unit is more than 120,000 pounds, the application is rejected and the carrier must revise and resubmit it. If a six axle combination unit does not exceed 120,000 pounds, OW/OD staff refer to the escort requirement flow chart for pilot car requirements, issues an A06 steel annual permit, and assigns the escorts as needed.

When the OW/OD office reviews an annual trip permit for a load without farm equipment that does not contain steel materials, it determines whether the gross weight is greater than 160,000 pounds. If it is, the office rejects the application and the carrier must revise and resubmit the application. If the gross weight does not exceed 160,000 pounds, OW/OD staff check whether the load is divisible. If the load is divisible and its divisibility contributes to it being overweight or over-dimensional, the application is rejected and the carrier must revise and resubmit it. If the load is non-divisible, they check the steer axle to assess if the weight is greater than 20,000 pounds. If the steer axle weight exceeds 20,000 pounds, they reject the application and the carrier must revise and resubmit the application.

If the load is not divisible and the steer axle weight does not exceed 20,000 pounds, or if the load is divisible but its divisibility does not contribute to the load being overweight or over-dimensional, the next check is of single axle weight to determine if one is more than 24,000 pounds. If a single axle weight exceeds 24,000 pounds, the application is rejected and the carrier must revise and resubmit. If a single axle does not exceed 24,000 pounds, the OW/OD staff check to see if a tandem axle weight is greater than 45,000 pounds on a maximum of five axles. If so, the application is rejected and the carrier must revise and resubmit. If the tandem axle does not exceed 45,000 pounds on five axles, evaluate whether a tandem axle weight is greater than 48,000 pounds on six axles. If a tandem axle weight is greater than 48,000 pounds on six axles, the application is rejected and the carrier must revise and resubmit it. If a tandem axle weight does not exceed 48,000 pounds on six axles, OW/OD personnel check to see if a tridem axle weight exceeds 60,000 pounds. If a tridem axle weight is over 60,000 pounds, the application is rejected and the carrier must revise and resubmit it. If a tridem axle weight does not exceed 60,000 pounds, OW/OD staff assess whether a five axle combination unit weighs more than 96,000 pounds. If yes, the application is rejected and the carrier must revise and resubmit the application. If a five axle combination unit does not exceed 96,000 pounds, they check to see if a six axle combination unit weighs more than 120,000 pounds. If a six axle combination unit exceeds 120,000 pounds, the application is rejected and the carrier must revise and resubmit it. If a six axle combination unit is less than 120,000 pounds, the OW/OD staff check to see if a seven axle combination unit weighs more than 160,000 pounds. If a seven axle combination unit exceeds 160,000 pounds, the application is rejected and the carrier must revise and resubmit. If a seven axle combination unit does not exceed 160,000 pounds, the OW/OD staff check the width to determine if it is less than 14 feet. If it is, they refer to the escort requirements flow chart for pilot car requirements, issue an A01 Annual Permit, and assign escorts as needed. If the width under 14 feet, the OW/OD personnel still refer to the escort requirements flow chart for pilot car requirements, issue an A02 Annual Permit, and assign escorts as needed. Refer to Figures 11.6 – 11.10 to see the flowcharts for non-farm equipment.

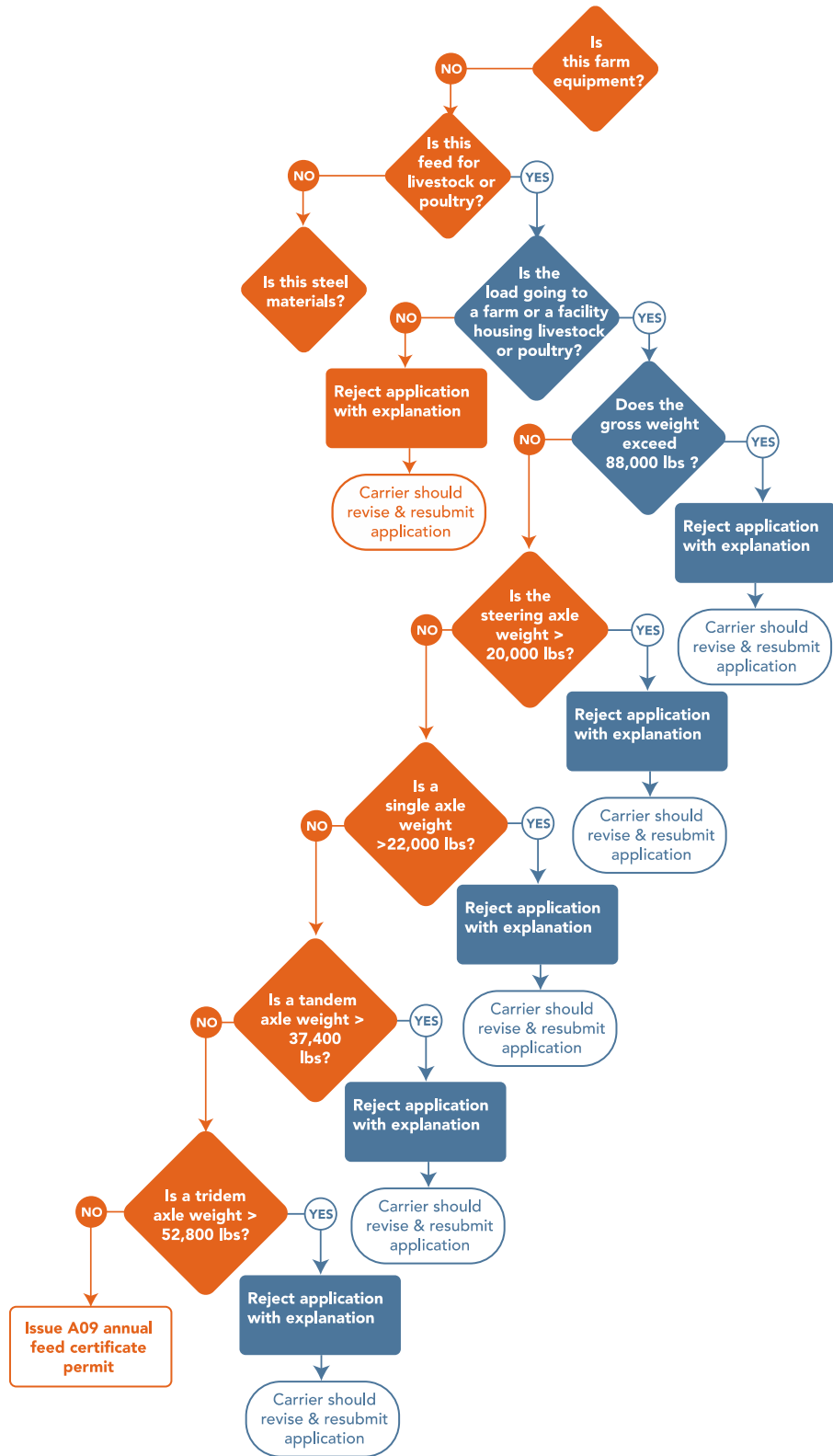


Figure 11.6 Annual Permit Review without Farm Equipment A







Figure 11.8 Annual Permit Review without Farm Equipment C

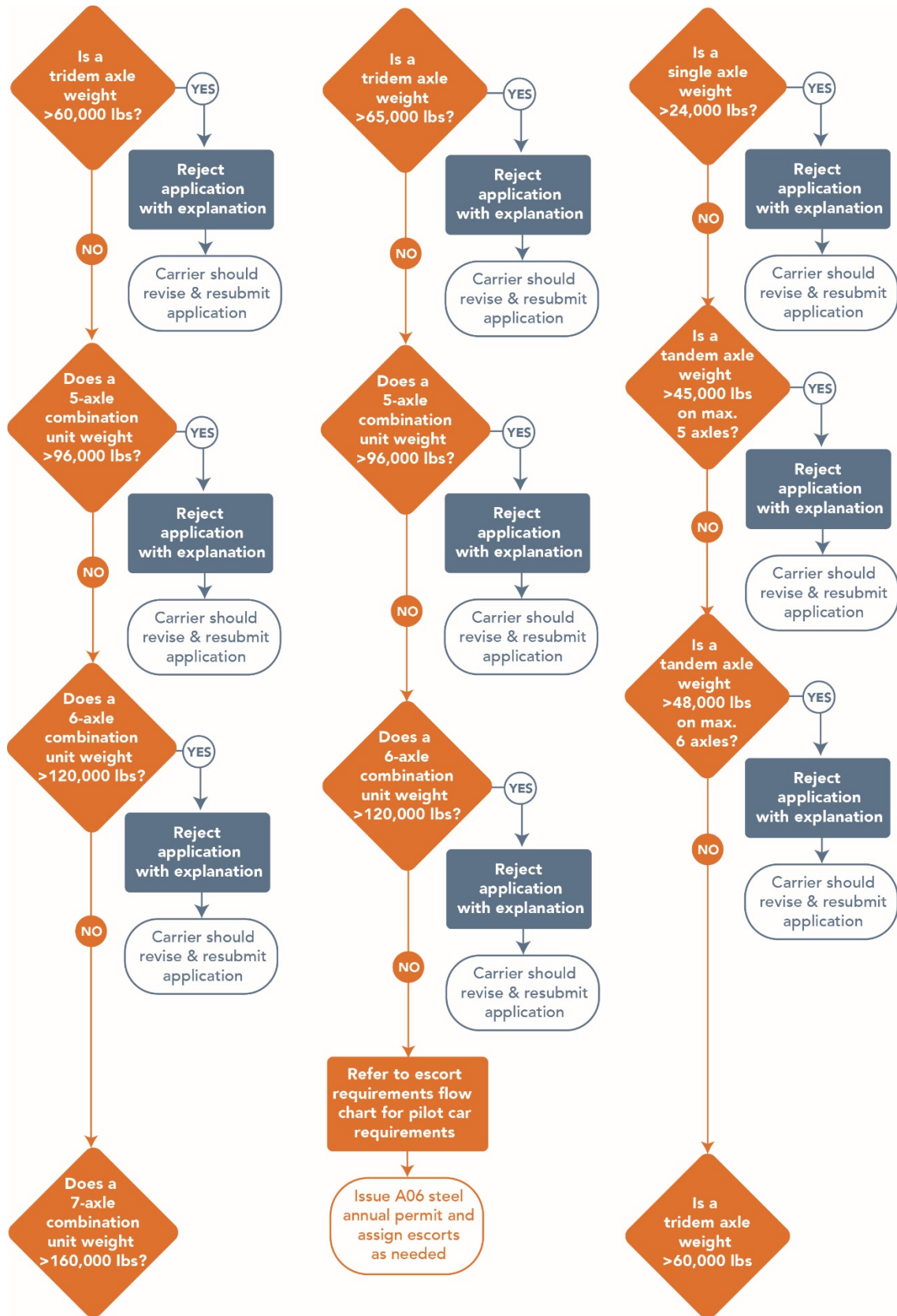


Figure 11.9 Annual Permit Review without Farm Equipment D

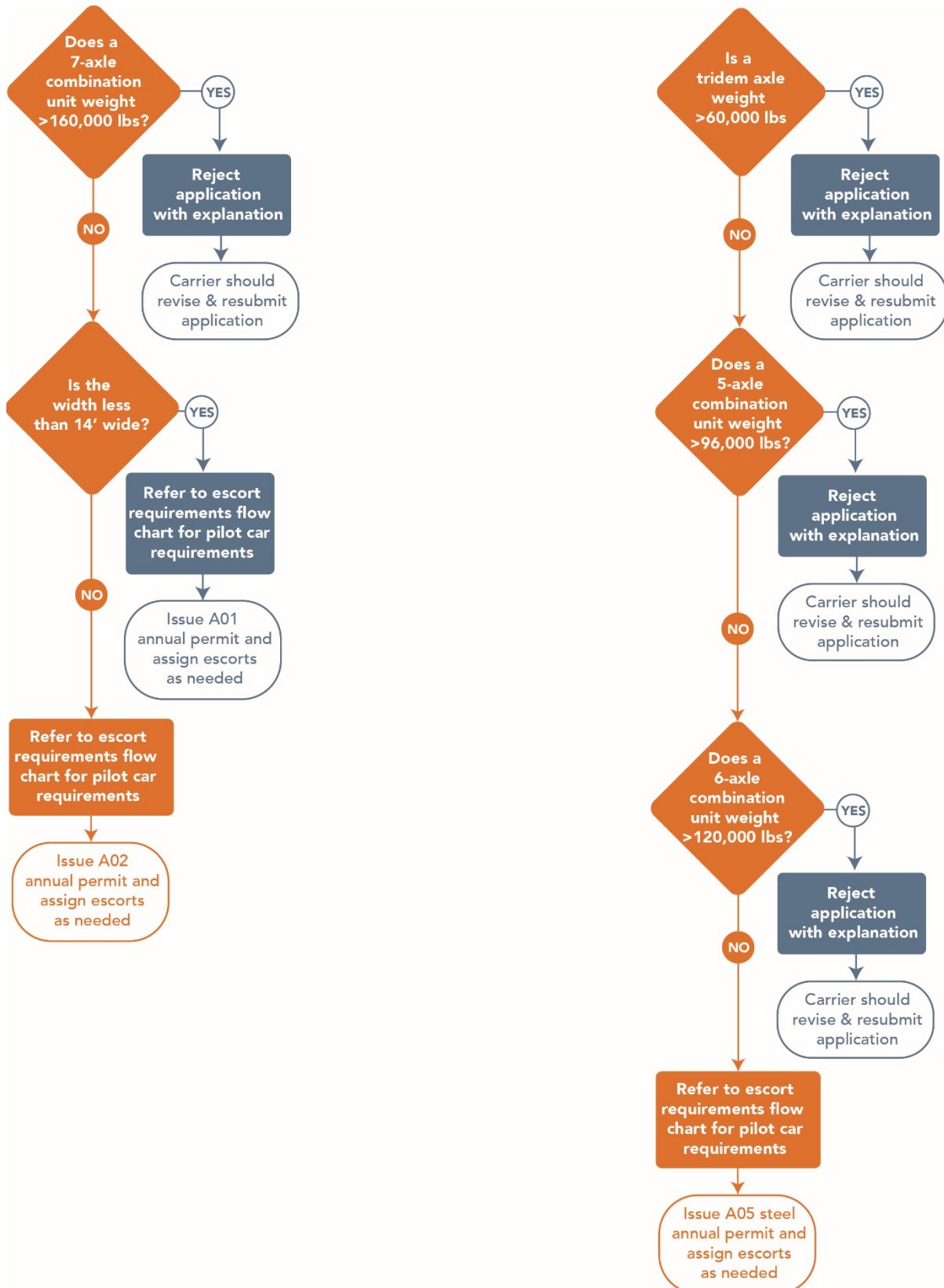


Figure 11.10 Annual Permit Review without Farm Equipment E

## Chapter 12 Information from Border State Interviews

Kentucky Transportation Center (KTC) researchers conducted telephone and/or email interviews with representatives from each of Kentucky's border states (Indiana, Ohio, West Virginia, Virginia, Tennessee, Missouri, and Illinois). KTC identified a person in each state to provide information about their OW/OD practices. The job title of the person providing the information varied by state. The following questions were asked:

1. Name Position/Contact Information
2. How many permits (single trip and annuals) are issues yearly?
3. Are you currently using any type of automated routing software?
  - a. If yes, what is the name of the software?
    - i. If yes, is it purchased off-the-shelf software or was it developed in-house?
  - b. If no, are you planning to switch to software-based routing in the future?
    - i. If yes, what is the name of the software?
4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)?
  - a. If yes, what is the name of the software?
  - b. If yes, is it purchased off-the-shelf software or was it developed in-house?
5. How can someone apply for an OW/OD permit (online, in person, fax)?
6. How many different agencies do you have to get data from in order to process an OW/OD permit?
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data are hard to get?
  - b. If no, is there oversight that ensures the data are kept up to date?
8. How are the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction), and what are the challenges to obtaining the information?
9. How do you get the different agencies to buy in to providing the information?
10. Are there any issues or problems with the OW/OD process in your state?
11. How many of your OW/OD permits are reviewed by your bridge group?
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits?
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)?
14. Is there a process in place to address changes that affect horizontal and vertical bridge clearances? (For example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed).
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)?
16. Are there any changes that have been made, or something that is currently being done, that has improved the OW/OD process?
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process?
18. Are there any recent incidents from insufficient data from OW/OD?

The responses from each state are provided below followed by a summary of the information obtained from the interviews.

### Ohio

1. Name Position/Contact Information: Brady Henry, Permit Technician, 614-466-1267, branden.henry@dot.ohio.gov
2. How many permits (single trip and annuals) are issues yearly? **310,000 - 320,000 yearly**
3. Are you currently using any type of automated routing software?
  - a. If yes, what is the name of the software? **Yes, Bentley 3.0**
    - i. If yes, it a purchased off-the-shelf software or was it developed in-house?

- b. If no, are you planning to switch to a software based routing in the future?
      - i. If yes, what is the name of the software?
- 4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **Yes, use OS32 form to show minimum insurance in place and to check out carrier.**
  - a. If yes, what is the name of the software?
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house?
- 5. How can someone apply for an OW/OD permit (online, in person, fax)? **All of those mentioned plus mail.**
- 6. How many different agencies do you have to get data from in order to process an OW/OD permit? **All done in house with Engineering group**
- 7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get? No everything comes from in house departments. Updates hourly automated.
  - b. If no, is there oversight that ensures the data is kept up to date?
- 8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information? **It is all updated in house and by County Engineer**
- 9. How do you get the different agencies to buy in to providing the information? Most is done in house with County Engineers know it is part of their responsibility to update any road or bridge construction in their area.
- 10. Are there any issues or problems with the OW/OD process in your state? **Not to his knowledge**
- 11. How many of your OW/OD permits are reviewed by your bridge group? **Not really sure!**
- 12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? They review any permit where the vehicle is over 120,000 lbs., 14 foot wide and 14 foot 6 inches in height.
- 13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? **In house Engineering group or County Engineers and must let OW/OS Department know 14 days in advance if there is if ratings or clearances are affected**
- 14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed) **Yes**
- 15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? **Updated real time and then one time at night.**
- 16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? **Upgrade county systems to better communicate with state system.**
- 17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? **Just what Bentley has to offer in the future?**
- 18. Are there any recent incidents from insufficient data from OW/OD? **No**

#### West Virginia

- 1. Name Position/Contact Information – Wayne Kessinger, Permit Section Administrator
- 2. How many permits (single trip and annuals) are issues yearly? – **Last year, 106,926.**
- 3. Are you currently using any type of automated routing software? - **Yes**
  - a. If yes, what is the name of the software? **GotPermits.com from Bentley Systems**
    - i. If yes, it a purchased off-the-shelf software or was it developed in-house? – **designed for us by Bentley.**
  - b. If no, are you planning to switch to a software based routing in the future?
    - i. If yes, what is the name of the software?
- 4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **Not yet, but there has been discussion with Bentley about that.**
  - a. If yes, what is the name of the software?
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house?

5. How can someone apply for an OW/OD permit (online, in person, fax)? – **Online or in person (if they come here, we go online for them).**
6. How many different agencies do you have to get data from in order to process an OW/OD permit? – **It's all the Division of Highways.**
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)? – Yes.
  - a. If yes, what data is hard to get? – Our DOH Districts are supposed to keep us abreast of construction restrictions, but don't always do that in a timely manner.
  - b. If no, is there oversight that ensures the data is kept up to date?
8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information? – **We have access to bridge ratings (it's automated within the system) and construction restrictions usually come by email.**
9. How do you get the different agencies to buy in to providing the information? – **It's all our agency.**
10. Are there any issues or problems with the OW/OD process in your state? – **It's actually pretty seamless.**
11. How many of your OW/OD permits are reviewed by your bridge group? – **Maybe 15% (the rest are self-issued).**
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? – **No set weight. If it fails the analysis, they review it.**
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? – **The DOH Districts are responsible for letting us know, so we can put it in the system.**
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed). Please explain the process. – **That's all on our DOH Districts.**
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? – **If I have the information, I can put it in in minutes.**
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? If yes, please elaborate. – **The automation of Bentley's GotPermits.com has eliminated the constant backlog we used to carry and cut our staffing needs by more than 50%.**
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? If yes, please elaborate. – **GotPermits.com from Bentley Systems.**
18. Are there any recent incidents from insufficient data from OW/OD? – **Not sure what you mean.**

## Virginia

1. Name Position/Contact Information

Fitz Jackson, Program Manager

804-497-7145

fitzhugh.jackson@dmv.virginia.gov

2. How many permits (single trip and annuals) are issues yearly? **Approx. 90,000**

3. Are you currently using any type of automated routing software?

They use the routing portion of the Bentley System for routing currently.

- a. If yes, what is the name of the software?
  - i. If yes, it a purchased off-the-shelf software or was it developed in-house?
- b. If no, are you planning to switch to a software based routing in the future?
  - i. If yes, what is the name of the software?

4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)?

They use the Virginia Department of Transportation (DOT) CSS database to currently check all credentials before issuing OW/OD permit. The CSS system was developed in-house by the Transportation Department. The Hauling Permits Department is a standalone department that relies on Department of Transportation for information (maps, daily updates and etc.) related to OW/OD loads and restrictions.

- a. If yes, what is the name of the software?

- b. If yes, it a purchased off-the-shelf software or was it developed in-house?
5. How can someone apply for an OW/OD permit (online, in person, fax)?  
A carrier can apply online, phone, fax or can walk in to apply. Fitz mentioned that they do not get many walk-ins.
6. How many different agencies do you have to get data from in order to process an OW/OD permit?  
They receive all their data from The Department of Transportation and their engineering group at Transportation.
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get?
  - b. If no, is there oversight that ensures the data is kept up to date?  
No they work closely with the DOT engineering group and are kept up to date with daily updates on any changes that may affect routing.
8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information?  
This information is communicated to them in daily updates with semi-annual updates to maps. They also have access to DOT database on bridge ratings and clearances. They can also use the DOT web portal for traffic alerts and other traffic information.
9. How do you get the different agencies to buy in to providing the information?  
No work well with the DOT engineering group.
10. Are there any issues or problems with the OW/OD process in your state?  
No, works pretty well.
11. How many of your OW/OD permits are reviewed by your bridge group?  
Did not have a good feel for how many but would guess any permit to be issued to a carrier crossing a bridge as part of the routing would be reviewed.
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits?  
Any permit over 7 axles and 115,000lbs and larger than 64 foot axles.
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)?  
DOT's engineering group.
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed)  
This is all handled by DOT's engineering group.
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)?  
Almost immediately by engineering group that keeps track of all construction changes on roadway projects.
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process?  
Not at present time, always looking for ways to improve but system has run well for several years.
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process?  
Possible switch over to complete Bentley but in no rush to do that.
18. Are there any recent incidents from insufficient data from OW/OD?  
Not that Fitz is aware of, nobody has called him on an incident.

## Tennessee

1. Name Position/Contact Information Justin Underwood o)615-253-8813 c) 615-947-6904
2. How many permits (single trip and annuals) are issues yearly? **138283**
3. Are you currently using any type of automated routing software?
  - a. If yes, what is the name of the software? **NO**
    - i. If yes, it a purchased off-the-shelf software or was it developed in-house? **N/A**
  - b. If no, are you planning to switch to software based routing in the future?
    - i. If yes, what is the name of the software? **Yes – Within the next 9-12 months**
4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **NO**



- a. If yes, what is the name of the software? **N/A**
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house? **N/A**
5. How can someone apply for an OW/OD permit (online, in person, fax)?  
TOOPS online system, (Permit Agencies), in person, email, limited fax.
6. How many different agencies do you have to get data from in order to process an OW/OD permit?  
Tennessee Department of Safety and Tennessee Department of Transportation are the main agencies we get data from.
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get? Timely and up-to-date Construction restriction reports
  - b. If no, is there oversight that ensures the data is kept up to date? **NA**
8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information?  
We use a database (IBIS ) and engineering dep't as well as smart ways.
9. How do you get the different agencies to buy in to providing the information? It is incorporated into the application system and we use email to communicate needed documentation.
- 10. Are there any issues or problems with the OW/OD process in your state? Current system is antiquated with limited function ability.**
11. How many of your OW/OD permits are reviewed by your bridge group? We have an auto issue feature within our permit system that auto-issue 78% of our permits. Of the 22% that are manually reviewed, 3.5% are reviewed by structures/bridge.
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? **It can vary depending on axle spacing's and weights.**
- 13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? Bridge inspectors and engineering.**
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed). **TN has a group of bridge inspectors.** Please explain the process. **unknown**
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? **Bridges are inspected bi-annually unless there are extenuating circumstances**
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? If yes, please elaborate. **Yes. We reviewed and made significant changes to permit processing using process maps and six sigma practices to streamline workflows and decrease waste. We have increased the usability of our webpage, provided more information to our customers, redesigned all our forms based on customer feedback. We have partnered with Department of Safety and Commercial Vehicle Enforcement to help officers better understand the OS/OW rules and ways the industry uses the system. We have also partnered with our Traffic Management Center to help with Super Load Movements to alert the public of super loads movements that may hinder traffic flow.**
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? If yes, please elaborate. Yes, since we do not have a routable network we partnered with IT to create a bolt on GIS mapping system that rest outside our permit system. This helped eliminate the need to use google maps, IBIS and Smartways when evaluating routes. This system is slow but eliminated 3 sites used to review routes. Arc-GIS has not been supported in over 6 months and currently no one is using it. We have to rely on google maps, IBIS and smartways for all permitting evaluations.
18. Are there any recent incidents from insufficient data from OW/OD? **NO**

### Missouri

1. Name Position/Contact Information Debra Bradshaw Motor Carrier Compliance Supervisor for OSOW  
**[debra.bradshaw@modot.mo.gov](mailto:debra.bradshaw@modot.mo.gov)** 573-751-7410
2. How many permits (single trip and annuals) are issues yearly? **150,000**
3. Are you currently using any type of automated routing software? **Yes, Bentley**
  - a. If yes, what is the name of the software?

- i. If yes, it a purchased off-the-shelf software or was it developed in-house?
    - b. If no, are you planning to switch to a software based routing in the future?
      - i. If yes, what is the name of the software?
4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **Yes all of those.**
  - a. If yes, what is the name of the software? **MCE system**
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house? Bentley and in house
5. How can someone apply for an OW/OD permit (online, in person, fax)? **All of those and by phone**
6. How many different agencies do you have to get data from in order to process an OW/OD permit? **DOT FMCSA MICMIS**
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get?
  - b. If no, is there oversight that ensures the data is kept up to date? It's all in house, and Bentley , restrictions, work zones, vertical clearance, structure analysis.
8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information? **It's all in house information that is entered by different division within MoDOT to our TMS system that our permitting system pulls from.**
9. How do you get the different agencies to buy in to providing the information? **It's all MoDOT in house that enter the information.**
10. Are there any issues or problems with the OW/OD process in your state? **No**
11. How many of your OW/OD permits are reviewed by your bridge group? **Only super loads about 3,000 a year**
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? **Over 16' wide, 150' long, 16' high and over 160,000 lbs**
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? **OSOW permit office and the district responsible for the construction or restriction or new structure.**
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed) **Yes**
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? **They can be pushed immediately or automatically pushes over night after midnight.**
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? **Upgrading to the Bentley SUPERLOAD program for better reporting and routing**
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? We have most of our agents telecommuting on a 4/10 schedule which gives us coverage from 6:30 a.m. to 5:00 p.m.
18. Are there any recent incidents from insufficient data from OW/OD? **None**

#### Illinois

1. Name Position/Contact Information: **Geno Koehler, OSOW Supervisor, 217-785-8967, [geno.koehler@illinois.gov](mailto:geno.koehler@illinois.gov)**

Geno volunteered to hold a demo of their system, if we desired.

2. How many permits (single trip and annuals) are issues yearly? **234,000 yearly**
3. Are you currently using any type of automated routing software? Yes, built in house by GIS Solutions Group. System is 98.75 % automated.
  - a. If yes, what is the name of the software?
    - i. If yes, it a purchased off-the-shelf software or was it developed in-house?
    - b. If no, are you planning to switch to a software based routing in the future?
      - i. If yes, what is the name of the software?
4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **Illinois's ISIS system.**

- a. If yes, what is the name of the software?
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house? **Developed in house**
5. How can someone apply for an OW/OD permit (online, in person, fax)? **Online and in person.**
6. How many different agencies do you have to get data from in order to process an OW/OD permit? **All in house.**
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get? **No**
  - b. If no, is there oversight that ensures the data is kept up to date? **Part of his job**
8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information? **Any work done by them or contractors must notify his office within 21 days of construction.**
9. How do you get the different agencies to buy in to providing the information? **All in house not a problem.**
10. Are there any issues or problems with the OW/OD process in your state? **Sometimes local road information does not flow as should.**
11. How many of your OW/OD permits are reviewed by your bridge group? **1.25%**
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? **Practical maximums or anything over 249,999 lbs**
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? **We enter that data daily.**
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed) **Yes, internal monitoring**
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? **Pushed out immediately and updated every night.**
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? **Local roads cloud connectivity upgrades**
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? **Local Road permitting solutions, AASHTOware, Permit Fee Study**
18. Are there any recent incidents from insufficient data from OW/OD? **None**

## Indiana

1. Name Position/Contact Information Dale (James) Vest, IDOR (317)615-7247 [IndianaOSW@dor.in.gov](mailto:IndianaOSW@dor.in.gov); Donna Luley, INDOT (317)233-3519
2. How many permits (single trip and annuals) are issues yearly? **379,668**
3. Are you currently using any type of automated routing software? **Yes, Hexagon.**
  - a. If yes, what is the name of the software?
    - i. If yes, it a purchased off-the-shelf software or was it developed in-house? **Both, but looking to new software for more interactive features.**
    - b. If no, are you planning to switch to a software based routing in the future?
      - i. If yes, what is the name of the software?
4. Do you use any preclearance software that filters out applications before review (ensuring that USDOT status is good, IFTA and UCR paid, etc.)? **No, (only when sitting up new accounts)**
  - a. If yes, what is the name of the software?
  - b. If yes, it a purchased off-the-shelf software or was it developed in-house?
5. How can someone apply for an OW/OD permit (**online, in person, fax**)?
6. How many different agencies do you have to get data from in order to process an OW/OD permit? **IDOR, INDOT (bridge and districts), ISP**
7. Is there information that you need that you have a hard time getting for routing purposes (construction information, bridge ratings, bridge horizontal and vertical clearances, etc.)?
  - a. If yes, what data is hard to get?
  - b. If no, is there oversight that ensures the data is kept up to date? **INDOT updates.**

8. How is the necessary data (bridge, construction data, etc.) communicated or obtained (do you have access to a database of bridge ratings and clearances and how do you find out about construction) and what are the challenges to obtaining the information? **CARS is the road restriction program showing construction, width/height/weight restrictions, and road restrictions due to fairs or community events.**
9. How do you get the different agencies to buy in to providing the information? **Email with set timeline to respond.**
10. Are there any issues or problems with the OW/OD process in your state? Making payments, which is getting updated soon
11. How many of your OW/OD permits are reviewed by your bridge group? **30%**
12. At what size (greater than a certain gross weight or axle weight) does your bridge group review permits? **200k currently, but will gravitate toward 80k.**
13. If bridge ratings or clearances are affected by construction, who is responsible for updating the information (for example, if a paving job affects a vertical bridge clearance)? **INDOT Bridge and INDOT Districts.**
14. Is there a process in place to address changes that affects horizontal and vertical bridge clearances? (for example, in AL, they have a dedicated group that goes out and measures bridge clearances within 3 days of construction being performed). **This is required by contract of the construction vendor and INDOT Bridge has LIDAR measurements taken to update the information of all bridges in alternating years.**
15. How long does it take for bridge clearances to be updated (especially if they are affected by construction)? **1 day to 2 weeks.**
16. Are there any changes that have been made or something that is currently being done that has improved the OW/OD process? **Update in IT requirements**
17. Are there any innovative technologies or ideas being used to assist in the OW/OD process? **Payment system and LIDAR (updating bridge information)**
18. Are there any recent incidents from insufficient data from OW/OD? **Not at the moment.**

The following bullet points summarize information obtained from the interviews.

- The number of OW/OD permits issued varies significantly among states. The range is 90,000–380,000 permits issued annually.
- Each state uses a slightly different process for routing OW/OD trucks. Of those that utilize routing software, most opt for Bentley routing software. One state uses Intergraph SafeHual software. The other states rely on an in-house solution.
- All but two states use some type of preclearance software to ensure applicants have a valid USDOT number, IFTA, and UCR license. Indiana only checks these credentials when setting up new accounts, and West Virginia is looking to begin this practice.
- All states allow users to apply for an OW/OD permit online or in person. Some states accept fax and phone applications, and one state lets users apply by mailing in an application.
- No state reported having difficulty obtaining data needed for truck routing purposes. All states have in-house data available for truck routing.
- Two issues reported with current truck routing procedures were payment difficulties (Indiana) and local road data not flowing properly (Illinois).
- The percentage of permits reviewed manually ranges from 0.002%–30%.
- Each state has a different weight and/or axle configuration that requires review by its bridge group. West Virginia only reviews permits that fail the automatic routing procedures.
- Although each state has a different responsible party for changes in bridge clearances (e.g., DOT, Engineering, Vendor), all states have a person or agency responsible for making these changes, and most stipulate a timeframe for the change to be made.
- All states reported that bridge clearances are updated immediately, overnight, or within a two-week period following changes. One state reported that its clearances are checked every other year by LiDAR as well.
- A few states listed Bentley as an innovative technology that assists with the OW/OD process. One state allows employees to telecommute and increase their coverage hours. Other technologies listed were road permitting solutions, AASHTOware, and a permit fee study. Another state observed that LiDAR and a new payment system were technologies that improved their OW/OD process.

- West Virginia noted there have been instances of trucks being routed onto roadways they should not have been allowed on because agency personnel lacked the necessary data when they planned the route.

## Chapter 13 Bentley SUPERLOAD Applications in Other States

Researchers reviewed practices at agencies where the Bentley SUPERLOAD software has been integrated into OW/OD permitting processes. Key findings are summarized below. Links direct readers to websites and documents that offer detailed information on how the software is being applied. States covered in this review include Michigan, Maryland, Illinois, West Virginia, New Jersey, and Ohio.

Review and References in Other States:

1. Michigan DOT Permit System – MiTRIP (from MIDOT website)
  - For the online trip permit process, multiple steps can only be accessed with a user ID and password. The origin and destination steps bring the user to a point where permit is issued or display a message to change the permit if insufficient or inaccurate information is entered. There is reference to “Copyright 2011 Bentley Systems” and v4.3.10.5 system requirements. MDOT screen also shows “Updated: August 1, 2016”.  
[http://www.michigan.gov/documents/mdot/mdot\\_mitrip\\_existing\\_businesses\\_and\\_permit\\_services\\_instructions\\_349517\\_7.pdf](http://www.michigan.gov/documents/mdot/mdot_mitrip_existing_businesses_and_permit_services_instructions_349517_7.pdf)
  - Manual for Customer Assistance:  
[http://www.michigan.gov/documents/mdot/Interactivate\\_Customer\\_Assistance\\_Guide\\_485485\\_7.pdf](http://www.michigan.gov/documents/mdot/Interactivate_Customer_Assistance_Guide_485485_7.pdf)
  - Michigan DOT MiTRIP Extended Permit Applications Guide Using Bentley Software:  
[http://www.michigan.gov/documents/mdot/mdot\\_mitrip\\_extended\\_trip\\_permit\\_guide\\_352269\\_7.pdf](http://www.michigan.gov/documents/mdot/mdot_mitrip_extended_trip_permit_guide_352269_7.pdf)
  - MiTRIP Single Trip Application Guide:  
[http://www.michigan.gov/documents/mdot/mdot\\_mitrip\\_single\\_trip\\_permit\\_guide\\_352271\\_7.pdf](http://www.michigan.gov/documents/mdot/mdot_mitrip_single_trip_permit_guide_352271_7.pdf)
2. Maryland DOT Oversize/Overweight Permitting and Routing (Bentley website).
  - Maryland’s Motor Carrier Division issues up to 150,000 OS/OW permits annually, enabling these vehicles to travel on the state’s 10,000 miles of road and 5,200 bridges. A \$2.3 million project using Bentley’s automated permitting and routing products led to the implementation of a new system much more quickly than if the State Highway Administration had developed the solution from scratch. The system is called *Maryland One* and has achieved automated issuance rates exceeding 80% while letting 10 full-time employees to take on other duties. It is estimated that carriers would save up to \$24.6 million annually by obtaining permits more quickly and avoiding costly fees, delays, and penalties.  
[https://www.bentley.com/en/project-profiles/mdsha\\_osow-permitting-and-routing](https://www.bentley.com/en/project-profiles/mdsha_osow-permitting-and-routing)
  - MDSHA Website for Hauling Permit Unit. Additional links are provided for applications, hauling permit general conditions, and the online permitting process.  
<http://www.roads.maryland.gov/pages/CVO.aspx?PageId=58&did=AHPS>
3. Illinois DOT
  - An OS/OW permit is required when a vehicle or load exceeds legal sizes and weights and is to be moved upon or across a highway for which the state is responsible. Permit applications are reviewed for bridge tolerances, construction zones, height clearance and several other safety concerns. The new [Illinois Transportation Automated Permit system](#) (ITAP) system lets customers apply online. Most permits are issued immediately.
  - Automated Permits (Bentley Website)

[https://www.bentley.com/en/project-profiles/ildot\\_automated-permits](https://www.bentley.com/en/project-profiles/ildot_automated-permits)

- IDOT's Website for OS/OW Permits

<http://www.idot.illinois.gov/doing-business/permits/Oversize-and-Overweight-Permits/index>

4. West Virginia DOT – Oversize/Overweight Permitting

- SUPERLOAD now handles 500 permits per day, with over 80% issued automatically. The agency processed 130,000 permits in 2012. In 2013 it outsourced permit processing to Bentley's online permitting service (GotPermits). A new contract with Bentley will allow GotPermits to process 100% of WVDOT's permits.

- Bentley Case Study on OW/OW Permitting

<https://www.bentley.com/~/asset/14/612.ashx>

5. New Jersey DOT Trucking Services Permit Office

- The agency's truck routing relies on the site GotPermits.com, a Bentley product. The site explains in detail the process and system used for routing, with training videos for each step (10 training videos in total). A front page Bulletin displays updates expected and new route restrictions as well as holiday restrictions. A note provides a contact phone number for applications status which shows *Engineer Review Required & Pending Technical Review*. Other issues are directed to the Trucking Services Permit Office phone number and email address – [SUPERLOAD.permits@dot.nj.gov](mailto:SUPERLOAD.permits@dot.nj.gov)
- New Jersey Got Permits Webpage: <https://nj.gotpermits.com/>

6. Ohio DOT – Special Hauling Permits and OHPASS System Link

- The following information is provided under the OHPASS System Instructions:
  - a) OH-ePass login required as initial step. Visitors cannot go beyond this point unless they are a registered system user. This page also provides the following under the Bulletin heading:
    - A link to training classes.
    - A note states OS permits for 14 feet wide or less can be issued with the OH-ePass system. A link to the webpage is provided.
    - A note states the system is not available for applications that exceed 159,999 pounds.
    - A note states all permit requests must have a "PASSED ROUTE ANALYZED" and for system issue "DO NOT SELECT #4 REQUEST OFFICE REVIEW", and
    - Information is provided which directs users to Buckeye Traffic for road and weather conditions and office hours if they require assistance.
  - b) Link to Downloadable Forms shows Travel Info with hot links for traffic conditions, information on bridges, construction season, rest areas, and emergency weather messages.
  - c) Link to FAQs regarding special hauling permits.
  - d) Link to Operational Guide for vehicles operating with an OS/OW special hauling permit.
  - e) Links to Operational Guide, Permit Information, Forms & Attachments, Regulations & Policies, Other Permit Contacts, and Reporting Requirements.
  - f) Quick Start Instructions are provided with details in the appendix.
  - g) A link is provided to a site where Special Hauling Permit Customers may complete a form to initiate the enrollment process and designate a name for use with the escrow account.
  - h) OHDOT – Ohio Special Hauling Permits Section
    - Bentley's SUPERLOAD has been in use since 2002. All permits must be entered through SUPERLOAD software. Last year, the section issued roughly 302,000 permits. About 50 percent of permits are issued without manual intervention. The section employs five issuing

technicians who are responsible for reviewing and issuing permits which are not system-issued. Bentley is contracted to provide maintenance and be on call for assistance as needed

- See A.9 in the appendix for the quick start instructions for Ohio Special Hauling Permits.

<http://www.dot.state.oh.us/Divisions/Operations/Maintenance/Permits/Pages/System%20Instructions.aspx>



## Chapter 15 Recommendations

One of the biggest challenges the Cabinet's OW/OD personnel face is having insufficient data when reviewing an OW/OD permit application. A central repository for bridge data is not currently available, and many of Kentucky's bridges do not have a rating posted. This is a significant issue because trucks under 200,000 pounds are being routed across bridges without being reviewed by the bridge preservation group. OW/OD staff rely on knowledge of previous routings that worked to determine if a load can safely traverse a bridge when no bridge rating information is available. All Kentucky bridges will be rated by the end of 2017 as part of a FHWA requirement. While having bridge ratings is valuable, bridge data must also be stored in a centralized location accessible to OW/OD staff so they can make informed decisions about permit applications without having to rely on knowledge of routes that have previously been used with success.

Access to construction data is paramount for successfully routing OW/OD trucks. This study identified several problems with construction data. Sometimes data are not submitted to the OW/OD Office, or they are sent to a single person instead of the designated email. In cases where the form is submitted correctly, it is often filled out inaccurately. These problems hinder successful routing of OW/OD loads. Since the current process can fail at multiple junctures, we recommend that the director of OW/OD staff (or their designee) hold weekly phone calls with each district to determine where construction will occur during the upcoming week and assess whether truck routings should be adjusted in response. A phone call reduces the likelihood of a form being filled out incorrectly or submitted to the wrong person. Initially this process may be arduous, but it will require less time and effort after the first few weekly phone calls. Admittedly, this is a short-term solution. It will not remedy the lack of administrative oversight needed to ensure compliance with the existing system. The long-term solution is compliance with Construction Memorandum No. 06-11, which clearly states that Section Engineers are responsible for providing needed information to OW/OD Office. This is not currently happening and there are no established protocols for holding Section Engineers accountable.

Another problem highlighted by this study is insufficient communication between the OW/OD Office and district offices about construction projects and possible lane closures and restrictions. If the Cabinet decides not to make Section Engineers responsible for supplying the OW/OD Office with required information, a primary contact in each district should be assigned these duties (e.g., Public Information Officer). Additionally, the primary contact can facilitate weekly phone calls to obtain the construction information for the coming week.

Another shortcoming of the current process is that no procedures are in place to distribute mass emails or messages to inform all permit holders of changes along their routes resulting from a late construction notice or an emergency closure. A process should be developed to enable quick communication with all permit holders. Currently, the OW/OD Group can only send mass communications to permit holders who have set up an ACH debit account and provided an email contact. However, the driver may or may not be the contact listed on the ACH debit account form — and therefore may not receive messages about lane closures or other restrictions.

## Chapter 16 FHWA Recommendations

The FHWA Kentucky Division, in cooperation with KYTC, reviewed the Cabinet's OW/OD truck permitting practices on February 6-8, 2019. The review examined the existing KYTC process for routing OW/OD vehicles to determine if the process adequately addresses bridge safety risks and ensures bridge components are not overstressed. The review culminated in a letter being sent to KYTC's Secretary that outlined several issues with the existing routing process. The Cabinet responded with a letter submitted to the FHWA's Acting Division Administrator. The letter addressed the FHWA's findings as well as the remaining work to be done to resolve the remaining issues. Copies of these letters are located in Appendix A.

## Chapter 17 Bentley SUPERLOAD Version 4 Implementation

Prior to the launch of Bentley SUPERLOAD Version 4 (October 2019), Kentucky issued all trip permits manually through a mainframe named the Automated License and Taxation System (ALTS) system. No option for self-issuance existed. Carriers could, however, use a web application that interfaced with the ALTS mainframe system. A customer would submit their request via web and a web service would put their request in a queue for approval. Division of Motor Carrier (DMC) staff would review the trip permit request, apply the appropriate escorts and special requirements/restrictions, and approve. Upon approval, the system would generate a PDF of the permit and return it to the customer. If DMC staff identified an error, they would deny the permit and append notes explaining the denial. Upon receiving the denial, submitters had the opportunity to correct errors and resubmit the application. The approval process relied on historical knowledge possessed by DMC staff, mapping data, Google Earth, and an in-house restriction list maintained by DMC staff that included horizontal and vertical clearances as well as road and bridge weight restrictions. Although the process was manual, staff issued roughly 400 permits daily. Over the past two years, staff size ranged from three to five, yet they maintained the same daily average output. DMC staff also received permit requests via fax and mail. For customers using the web interface, payments were made by a nightly bank drafting process done via systematic recognition of banking information held within a secure table in ALTS. Transactions from walk-ins were processed through POS, cash, check or credit card. DMC management would reconcile the permits against reports provided by the ALTS system daily.

To ensure smooth implementation of Bentley SUPERLOAD Version 4, KTC assisted with user acceptance testing of the new software. This entailed staff taking several hundred permits previously issued using the old system, running them through the new software, and noting discrepancies between the two permits. If there were routing differences, the permit information was recorded in a spreadsheet and sent to DMC for review. This process helped identify various routing problems that remained before software implementation. Problems may have been due to 1) missing information in the Bentley SUPERLOAD software, 2) new restrictions that did not exist when the original permit was issued, or 3) the software identifying restrictions that were unknown to permitting staff when the original permit was issued. This process helped to create buy-in from staff by demonstrating the software was capable of adequately routing tucks.

Bentley SUPERLOAD Version 4 has been implemented, with four staff members on hand (a supervisor position was vacant prior to the pandemic). Current trends indicate DMC staff are evaluating and approving fewer permits, but there has been a 58-60% increase in self-issuance. The software also confirms horizontal and vertical clearances and accounts for road and bridge ratings. When a permit is submitted for in-house review, the customer is notified the permit has been approved and is in queue awaiting payment. Once payment is received (through interfaced payment engine), the permit is issued to the carrier and they can print it. With respect to self-issuance, DMC controls the conditions under which self-issued permits are allowed. If the permit meets the specific parameters and criteria (for weight, height, and route), the customer can submit, pay, and obtain the permit without having to interact with DMC staff. DMC plans to expand the criteria of self-issued permits as time allows and as data are fully cleaned.

Prior to Bentley SUPERLOAD Version 4, annual permits were issued via paper application. Carriers completed a TC 95 form and submitted it to DMC with their payment. No option for self-issuance existed and a steady number of walk-in customers visited the One Stop Shop to obtain permits. Kentucky statutes require that the original document be carried in the vehicle, so those with expired annual permits would readily make the trip to the One Stop Shop. All annual permits are restricted to legal height. No confirmation on roads or routes was available; annual permits gave carriers the responsibility to ensure they used an acceptable route, based on KRS and KAR weight restrictions. The only annual permit that currently requires approved routes is the Annual A06 (Steel Statewide). In the Bentley system, it requires an accompanying Route Authorization. The Route Authorization basically provides a confirmation (and print out) of the proposed routes the carrier will operate on. They should use the route authorization for each trip they make. Prior to Bentley SUPERLOAD Version 4, a carrier would mail in pages of the routes they wanted to operate. DMC staff would review and approve them, laminate the routes, and attach them to the annual permit returned to the customer.

Except for those noted below, all other annual (and trip) permits are obtained through the Bentley system and require no interaction with DMC staff. If DMC staff receive a request via mail, it is mailed back to the customer with an enclosure instructing them on how to obtain the permit online. Bentley software provides a feature called Route Evaluation which lets customers verify a route prior to issuance. The difference between Route Evaluation and Route Authorization is that, currently, a Route Authorization can be printed and is only used with the A06. DMC's goal is to update the statute wording to require a Route Authorization on all annual permits each time a move is performed.

Notation:

- In 2017 Kentucky was statutorily required to provide a permit of Metal Commodity (annual and trip permit). To meet the implementation deadline, DMC worked with KYTC OIT to develop an online annual and trip permit to accommodate the statute (KRS 189.2713). Those permits replaced a similar annual permit that was to sunset in June 2020. That mandate created the new A05 annual (\$1,250) and A0S (\$100), trip permits. DMC created a new permit with the assistance of KYTC OIT and developed a web application that has an interactive map which shows routes a vehicle can legally travel on, based on weight and axle configurations. To date, that permit is unique and separate from the Bentley application.
- July 2018 Legislation mandated a Feed Certificate and DMC again worked with KYTC OIT to develop a web application to accommodate this mandate. The Feed Certificate allows up to 88,000 pounds but is only issued if the axle configuration meets bridge standards. It also provides an interactive map that shows the routes loads are legal to operate on, based on axle configuration.
- Payment for all three of the permits noted above are made through an interface with a payment engine, provided by Kentucky Interactive Inc. (KII), the same payment engine used in Bentley.
- HB 242 (passed in 2020) allows issuance of annual Mobile Home permits for loads 15 feet high. DMC is still awaiting an implementation date as well as clarification on the new statute. Wording has been changed to "may" from "shall" and DMC has requested a legal interpretation as to its mandate.

#### **16.1 Bentley SUPERLOAD Version 4 Shortcomings**

While implementation of Bentley SUPERLOAD Version 4 has provided several benefits, the software has some notable drawbacks. One is that adding notes to a permit causes the software to get caught in a loop, resulting in problems for companies. When this happens, OW/OD permitting staff have to reject the permit request and return it to the carrier, telling them to reapply without adding notes to the application. This is time-consuming for both the carrier and permitting staff.

Another problem is that selecting routes using free form routing can also cause a loop, which requires that the permit be denied and the process started again. If a carrier uses free form routing, it lets them select sections of segments, affording them the option of attempting to maneuver around restricted bridges and other restrictions, which can undermine the safety of the carrier and traveling public.

Third, DMC staff cannot view the status of permits that have been sent to Bridge Preservation for review. Permits are sent to the Bridge Preservation so that staff in that area can add necessary provisions to the permits. Once approved, they notify the permitting staff of approval and specify which bridge provisions must be added to the permit before it is finalized and sent back to the carrier. A goal for DMC would be for Version 5 is to authorize the Bridge Preservation group to approve permit requests, add the necessary bridge provisions to the permit, and remove the responsibility from the permitting staff.

Next, Version 4 software automatically sends an email notification to carriers if there is a change in restrictions that affects their currently active, approved permit and instructs the carrier to check the restriction list. No information is provided about a detour route or how the permit needs to be amended. Notifications increase phone calls and emails to DMC permitting staff, requiring them to go back into the system and amend permits without charging a fee and send the carrier an updated permit with a new route to carry inside the truck. This permit can be shown to

enforcement personnel and verifies that the approved route was changed due to the current construction or bridge restrictions.

Fifth, when a carrier requests a permit and OW/OD staff approves the permit, it returns to the carrier's application queue if the carrier waits a day or more to return and pay for the permit. As a result, the permit gets caught in a loop and it is sent back to the permitting staff to re-approve. If permitting staff approve the permit a second time, it is returned to the carrier and lets them to pay for it a second time. But the system neither creates a PDF version of the permit nor sends it to the screening web service/CVIEW for enforcement to indicate that the carrier has an active permit. This requires OW/OD staff to delete the permit from the system and refund the carrier's money, which in turn requires the carrier reapply for the permit. OW/OD staff must then approve the permit and the carrier has submit another payment, all in the same day, receive a valid permit.

The final problem is that route segments cannot be opened. For example, Version 4 does not let DMC staff open portions of a route. The entire route is open or closed — there is no in between. Efficiently routing trucks thus becomes more difficult.

## Chapter 18 Information from Bentley SUPERLOAD Version 5 States

KTC's team surveyed representatives from agencies currently using Bentley SUPERLOAD Version 5. We developed questions based on user experiences with Version 4. Representatives in the following states received the survey: Missouri, Illinois, Maryland, New Jersey, and South Dakota. Survey participants were not required to answer each question. Responses are summarized below.

### Question 1

When adding notes to a permit, does the software work correctly or does it get caught in a loop that causes problems for companies?

Response	Count
Yes, it works correctly	5
No, it does not work correctly	0
I have never added notes to a permit	0

### Question 2

When selecting routes using free form, does it work correctly, or does it cause a loop where the permit must be denied and started over?

Response	Count
Yes, it works correctly	5
No, it does not work correctly	0
I don't know	0

### Question 3

Are there problems you have experienced with the Bentley SUPERLOAD Version 5 software that you would like to see addressed?

Response	Count
Yes	1
No	3

If the respondent answered Yes to Question 3, the survey displayed the following question:

### Question 3A

Please describe the problems you have experienced with the Bentley SUPERLOAD Version 5 software.

#### Response 1

It is slower than the old version we used before. It's something that we have adapted to, but it could be sped up. When updates are installed there are times it undoes some fixes that were implemented in the past. The mapping information to identify the routes could be greatly improved, it is difficult to identify some of the two-lane state highways.

### Question 4

Are there things that worked better in the Bentley SUPERLOAD Version 4 software compared to Version 5?

Response	Count
Yes	2
No	3

If the respondent answered Yes to Question 4, the survey displayed the following question:

### Question 4A

Please describe what worked better in Bentley SUPERLOAD Version 4 software compared to Version 5.

Response 1

The map and the speed of the program in general.

Response 2

Selecting and adding additional provisions for permits.

**Question 5**

Does the Bentley Version 5 software allow you to import mile point data and line segments so that you don't have to open up entire routes?

Response	Count
Yes, it does	0
No, it does not	1
I don't know	1

**Question 6**

Do you know how your agency manages restrictions in the Bentley SUPERLOAD Version 5 software?

Response	Count
Yes	2
No	0

If the respondent answered Yes to Question 4, the survey displayed the following question:

**Question 6A**

Please describe how your agency manages restrictions in the Bentley SUPERLOAD Version 5 software.

Response 1

We have a dedicated engineer with the Dept of Transportation that manages all restrictions.

Response 2

With a Restriction Manager function.

**Question 7**

Can you import data with single points and directions?

Response	Count
Yes	1
No	0

**Question 8**

Does the Version 5 software automatically update permits and notify companies if construction data comes in that would affect their permit or does the permit have to be manually amended?

Response	Count
The permit is updated automatically if construction data comes in that would affect it	0
The permit must be manually amended if construction data comes in that would affect it	2

**Question 9**

If the Version 5 software automatically updates permits and notifies companies if construction data comes in that would change their permit, is there a fee for this feature?

Response	Count
Yes, there is a fee associated with this feature	0
No, there is not a fee associated with this feature	0

**Question 10**

Do you use Version 5 software for annual permits?

Response	Count
Yes	2
No	0

**Question 11**

Is your permitting section able to see the status of permits sent to the bridge preservation/engineers section in the Version 5 software? Is there any type of a queuing process that allow the submitter to “see” the status?

Response	Count
Yes	2
No	0

**Question 12**

When it comes to amending permits in the Version 5 software, can you amend up, down, or both?

Response	Count
Amend up only	0
Amend down only	0
Amend both up and down	0
I don't know	2



## Chapter 19 Conclusion


Like many projects, this research effort has evolved considerably over the past four years. The first eight chapters of this report documented the decision-making processes DMC analysts follow when determining whether to issue a single-trip permit. Flowcharts let readers easily visualize how applications are evaluated, summarize what responsibilities applicants have (e.g., form submissions, payment options, steps they must take to resubmit applications if they were initially rejected), and capture when applications should be directed to other sections (e.g., Bridge Preservation) to facilitate decisions. The next three chapters looked at the process for issuing annual permits, which are vehicle-specific permits that authorize a vehicle to move throughout Kentucky on an ongoing basis without contacting the OW/OD office for approval. As with the chapters dedicated to single-trip permits, these chapters included several flow charts that document the logic analysts use to make judgments about annual permit applications.

Although unanticipated when this project initially received funding, KYTC adopted Bentley SUPERLOAD Version 4 in October 2019. Consequently, in addition to documenting the permitting process, researchers looked at the ways in which other state transportation have adopted this software and were actively engaged in the Cabinet's deployment. Shifting to Bentley SUPERLOAD Version 4 significantly altered KYTC's business practices with respect to OW/OD permitting. Prior to its launch all trip permits were issued manually with applicants having the ability to conduct some portions of their transactions via a web application. Bentley SUPERLOAD Version 4 has streamlined permit issuance significantly. Before its full rollout, researchers helped with testing the software and identifying routing problems that required correction. Following the software's adoption, the number of single-trip permit applications DMC evaluates has declined, while there has been a corresponding increase in the self-issuance of permits (nearing 60%). The software has improved the efficiency of the annual permit process as well. With a few exceptions, all annual permits are processed using the Bentley system and require no interaction with DMC staff.

While the introduction of Bentley SUPERLOAD Version 4 has been mostly successfully, DMC staff have documented several challenges associated with the software's use, which they hope will be resolved with the transition to Version 5 in late 2021. Here are some of present version's key handicaps: 1) Adding notes to a permit results in the software getting stuck in a looping process, which requires permitting staff to intervene and begin the process anew; 2) Selecting free form routing also results in a similar looping process which demands the processes be restarted; 3) DMC cannot look up the status of permits that have been forwarded to Bridge Preservation for review; 4) Notifications are automatically distributed to carriers when restrictions are changed on their active permits, however, they offer no details on how to amend the permit; 5) If OW/OD staff approve a permit, it is returned to the application queue if the applicant waits for at least a day to submit their payment; and 6) Individual route segments are not viewable, making it more difficult to efficiently route trucks. KTC's survey of states which have adopted Bentley SUPERLOAD Version 5 found that some of these issues have been resolved in the newest version. Nonetheless, it will be imperative to ensure the problems which sometimes hamper the performance of Version 4 are ironed out before KYTC does a full rollout of Version 5.

## Appendix A Forms

## A.1 TC 95-10 OW/OD Permit Worksheet



**Kentucky**  
Department of Transportation

KENTUCKY TRANSPORTATION CABINET  
 Department of Vehicle Regulation, Division of Motor Carriers  
 PO Box 2007, Frankfort, KY 40602-2007  
 ATTN: OW/OD ACCT: 702  
 Phone (502) 564-1257 Fax (502) 564-0992  
 Walk-ins: 8:00 A.M. - 4:00 P.M. EST  
<http://transportation.ky.gov/Motor-Carriers>

TC 95-10  
Rev. 2/17

**THIS IS NOT A PERMIT**

**KENTUCKY OVERWEIGHT/OVERDIMENSIONAL PERMIT WORKSHEET**

TRANSMITTAL COMPANY IF APPLICABLE \_\_\_\_\_

KYU # \_\_\_\_\_ US DOT # \_\_\_\_\_  
 (Vehicles in excess of 59,999 lbs need a permanent KYU or a temporary KYU.)

CARRIER / DRIVER \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

TRIP START DATE \_\_\_\_\_ EQUIPMENT OR LOAD DESCRIPTION \_\_\_\_\_

PERSON COMPLETING APPLICATION \_\_\_\_\_

PHONE # \_\_\_\_\_

VEHICLE YEAR \_\_\_\_\_ VEHICLE MAKE \_\_\_\_\_ UNIT # \_\_\_\_\_

LICENSE PLATE # \_\_\_\_\_ STATE OF LICENSE \_\_\_\_\_

VIN # \_\_\_\_\_

OVERALL LENGTH \_\_\_\_\_ FT. \_\_\_\_\_ IN.      **WEIGHT BREAKDOWN MUST BE IN GROUPS:**

OVERALL WIDTH \_\_\_\_\_ FT. \_\_\_\_\_ IN.      (1) \_\_\_\_\_ LBS. (2) \_\_\_\_\_ LBS. (3) \_\_\_\_\_ LBS. (4) \_\_\_\_\_ LBS.

OVERALL HEIGHT \_\_\_\_\_ FT. \_\_\_\_\_ IN.      \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles

TRAILER LENGTH \_\_\_\_\_ FT. \_\_\_\_\_ IN.      \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles

OVERHANG FRONT \_\_\_\_\_ FT. \_\_\_\_\_ IN.      \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles

OVERHANG REAR \_\_\_\_\_ FT. \_\_\_\_\_ IN.      (5) \_\_\_\_\_ LBS. (6) \_\_\_\_\_ LBS. (7) \_\_\_\_\_ LBS. (8) \_\_\_\_\_ LBS.

GROSS WEIGHT \_\_\_\_\_ LBS.      \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles \_\_\_\_\_ Number of Axles

TOTAL NUMBER OF AXLES \_\_\_\_\_

ORIGIN \_\_\_\_\_ DESTINATION \_\_\_\_\_

ROUTES \_\_\_\_\_

REMARKS \_\_\_\_\_

**ALL FIELDS MUST BE COMPLETED.** Applications received after 2 pm est. will not be processed until the following business day. Travel allowed 24/7 for most loads with the exception of mobile homes, and house moves. The provisions will be printed on the bottom of the permit. If a bridge analysis is required it may take up to 10 additional business days to process your application. Permits will be processed in the order they are received. Should your company need a temporary KYU a \$40.00 charge will be incurred in addition to the \$60.00 Overweight/Overdimensional permit fee. There will be a 4% processing fee for each credit card transaction.

FAX #: \_\_\_\_\_

CARD NUMBER: \_\_\_\_\_  
(American Express, Discover, Master Card and Visa only)

Exp. Date: \_\_\_\_\_  
MM/YYYY

SIGNATURE OF APPLICANT: \_\_\_\_\_

DATE: \_\_\_\_\_

## A.2 TC 95-586 Preauthorized Payments



Kentucky Transportation Cabinet  
Division of Motor Carriers

TC 95-586  
06/2016

### AUTHORIZATION AGREEMENT FOR PREAUTHORIZED PAYMENTS

PERMIT AGENCY NAME \_\_\_\_\_

OR

CARRIER NAME \_\_\_\_\_ KYU # \_\_\_\_\_

Registered Gross Vehicle Weight \_\_\_\_\_ (Required if one has been issued)

of heaviest vehicle: \_\_\_\_\_ lbs. DOT # \_\_\_\_\_  
(REQUIRED) (REQUIRED)

I (we) hereby authorize The Commonwealth of Kentucky, hereinafter called The Commonwealth, to initiate debits entries to my (our) checking account indicated below and the depository named below, hereinafter called DEPOSITORY, to debit the same to such account, for permits ordered by our company.

**Canadian banks not available for this service.**

DEPOSITORY

NAME \_\_\_\_\_ BRANCH \_\_\_\_\_  
(BANK NAME)

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

ROUTING # \_\_\_\_\_ ACCOUNT # \_\_\_\_\_

This authority is to remain in full force and effect until The Commonwealth and DEPOSITORY have received written notification from me (or either of us) of its termination in such time and in such manner as to afford The Commonwealth and DEPOSITORY a reasonable opportunity to act on it.

SELECT YOUR 8-DIGIT PIN NUMBER

NAME \_\_\_\_\_

(Applicant Please print)

(Must be 8 characters)

May be letters, numbers or a combination of both.

DATE \_\_\_\_\_ SIGNED \_\_\_\_\_

PHONE #           FAX #

(REQUIRED)

MAIL TO: Division of Motor Carriers PO Box 2007 Frankfort, KY 40601

FAX TO: 502-564-0992 If faxing, please include copy of voided check.

**A VOIDED CHECK (OR A COPY OF A VOIDED CHECK) MUST ACCOMPANY THE COMPLETED FORM** above to authorize the debit of your account for payment of Overweight/Overdimensional Permits and/or Combined 10 Day Temporary Permits.


Funds will be deducted the next banking day after a permit has been issued. Permits issued on a Thursday will be submitted for ACH debit on Friday. Permits issued on Friday will be submitted for ACH debit on Monday.

A brief explanation of the ACH debit process may be helpful to you. When you use a check to pay for something, your banks transit number and your account number (both of which are preprinted at the bottom of your check) tell which bank and account number your money is in so that the bank can transfer the money into our account. This process allows us to keep these two numbers on file for you and process the transfer of money when you have obtained permits.

This process eliminates the need for you to fill out a check and deliver it to us. It eliminates the need for us to process your check and prepare a deposit slip for our bank. Finally, it eliminates the need for either of our banks to process your check. Your bank statement will actually show that the amount deducted was transferred to The Commonwealth of Kentucky and was for your payment for permits.

While you already provide us with this information every time you send us your check, this information will be kept in a secured location. Any changes to your bank account number must be done in writing and will not be accessible through our normal call-in procedures.

**A.3 TC 95-625 Overweight or Overdimensional Proposed Route Survey**

	KENTUCKY TRANSPORTATION CABINET Department of Vehicle Regulation DIVISION OF MOTOR CARRIERS	TC 95-625 Rev. 02/2017 Page 1 of 1
<b>OVERWEIGHT OR OVERDIMENSIONAL PROPOSED ROUTE SURVEY</b>		

<b>NOTICE:</b> This form must accompany form TC95-10.	<b>Please send to:</b> Fax: 502-564-0992 Email: owod.dmc@ky.gov	<b>MAIL TO:</b> PO Box 2007, Frankfort KY 40602-2007 Phone (502) 564-1257 8:00 am – 4:30 pm EST <a href="http://transportation.ky.gov/Motor-Carriers">http://transportation.ky.gov/Motor-Carriers</a>
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<b>SECTION 1: APPLICANT INFORMATION</b>				
HAULING COMPANY ( <i>applicant</i> )			USDOT#	
LOAD DESCRIPTION			DATE OF SURVEY	
OVERALL LENGTH	OVERALL WIDTH	OVERALL HEIGHT	HEIGHT OF POLE ( <i>6" above overall height</i> )	GROSS WEIGHT
ORIGIN ( <i>complete address if in KY</i> )				
DESTINATION ( <i>complete address if in KY</i> )				
ROUTE				

**SECTION 2: ROUTE DETAILS** - For additional route details attach a separate sheet.

**The following must be considered while physically performing the survey.**

- All vertical/horizontal clearance **must** be checked at the highest/widest point of the load and lowest/narrowest of the area where the load will be traveling insuring that all obstructions can be traveled under, over, or ramped safely
- No obstruction can be moved or removed without written permission from the owner.
- A manufacturer's specification drawing must be attached.
- Insure that the weight does not exceed any highway or bridge posted limit.
- All loads over 200,000 lbs must attach a side & rear view drawing with axle spacing & weights.
- Identify all locations where bucket trucks may be needed.

ROUTE <i>(Name / Number)</i>	DIRECTION <i>(N S E W)</i>	LANE OF TRAVEL <i>(Right, Left, Center, Straddle)</i>	NOTES: INCLUDE ALL OBSTRUCTIONS WITH MILE POINTS <i>(i.e. bridges, lights, wires, mast arms, trees, signs, poles, guardrail, railroad, owner of obstruction &amp; contact information if applicable, etc.)</i>

<b>SECTION 3: SIGNATURE</b>	
The Surveyor does hereby certify that the proposed route as requested above has been physically checked for clearances related to the move being requested. Furthermore, it is certified that the proposed load can safely clear every obstacle or bridge structures along the identified route.	
SURVEYING COMPANY NAME	
SURVEYOR'S NAME	PHONE NUMBER
SIGNATURE	DATE

Walk-in 8:00 am – 4:00 pm EST / Overnight delivery services: Division of Motor Carriers, 200 Mero Street, Frankfort, KY 40622

### A.4 TC 95-25 Annual Overweight or Overdimensional Permit



**Kentucky Transportation Cabinet  
Division of Motor Carriers**

TC 95-25  
07/2017

**APPLICATION FOR ANNUAL OVERWEIGHT or OVERDIMENSIONAL PERMIT**

Mailing Address: P.O. Box 2007, Frankfort, KY 40602-2007  
Phone: (502) 564-1257 Fax: (502) 564-0992  
8:00 am – 4:30 pm EST Walk-ins: 8:00 am – 4:00 pm EST  
<http://transportation.ky.gov/Motor-Carriers>

Office Use Only

34 OW/OD Permit: \_\_\_\_\_

CREDIT CARD #: \_\_\_\_\_  
EXPIRATION DATE: \_\_\_\_\_  
**Make checks payable to Kentucky State Treasurer.**  
There will be a 4% processing fee for each credit card transaction.

**THIS IS NOT A PERMIT**

Company Name: \_\_\_\_\_

Person Completing Application: \_\_\_\_\_

Mailing Address \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

KYU# \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

USDOT# \_\_\_\_\_ Registered Gross weight of heaviest vehicle: \_\_\_\_\_

Effective Date: \_\_\_\_\_ Load Description: \_\_\_\_\_

Valid One Year From Issue Date

- Check the annual permit being applied for:**
- A01 - Nondivisible—less than 14-ft. wide \$250 each
  - A02 - Nondivisible—14-ft. to 16-ft. wide \$500 each
  - A03 - Farm—less than 14-ft. wide - **Width Only** \$80 each
  - A04 - Farm—14-ft. to 16-ft. wide- **Dealership Only** \$150 each
  - \*A05 - Metal Commodities - **Approved Routes** \$1250 each
  - A06 - Steel Statewide - **Routes Required** \$500 each
- \* A05 - Per KRS, Chapter 189, in part; upon renewal of any annual permit issued under this section, the permit holder shall report to the Cabinet the number of trips made and the total miles driven under the permit during the previous year.

No	TOTAL AXLES	YEAR	MAKE	PLATE	STATE	COMPLETE VIN # <small>(1980 TO CURRENT MUST BE 17 DIGITS)</small>	UNIT #	MAXIMUM LENGTH	MAXIMUM WIDTH	WEIGHT & AXLE BREAKDOWN IN GROUPS	GROSS WEIGHT
*	7	2007	FRHT	A14309	KY	1XP5DBF73GT124566	127384	120'0"	16'	15,000/1 - 60,000/3 - 60,000/3	135,000
<b>***ABOVE IS AN EXAMPLE OF A CORRECT ANNUAL PERMIT REQUEST***</b>											
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											

**\*\*\*NOTE: FOR ANNUAL RENEWALS, PLEASE SUBMIT ONLY A COPY OF THE PREVIOUS PERMIT WITH CORRECTIONS.\*\*\***


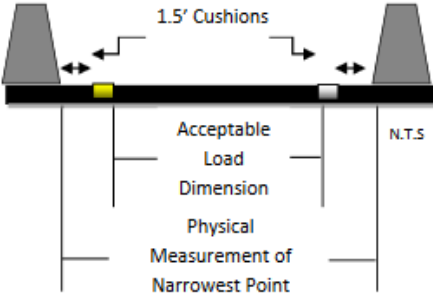
In applying for these permits, the permittee acknowledges that the permittor is not a guarantor of the safe passage of vehicles or loads. Accordingly, it is the positive duty of the permittee to measure all clearances of highway structures, both laterally and vertically, and shall observe actual gross and axle weights prior to the passage of the vehicle through their location. Therefore, the permit is to be used at the sole risk of the permittee, without warranty of accuracy. The recipient is classified as a bare licensee whose duty it is to assume the risk involved in using the Kentucky roads designated. This application may take up to 12 business days to process. I have copies of, and am familiar with, all Kentucky laws and administrative regulations relating to movement of oversized and/or overweight loads.

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_  
(VALID EMAIL ADDRESS REQUIRED FOR A05 METAL COMMODITIES PERMIT ONLY)

**A.5 TC 63-70 Highway Construction Restriction Notification**

		KENTUCKY TRANSPORTATION CABINET Department of Highways DIVISION OF CONSTRUCTION		TC 63-70 Rev. 05/2013 Page 1 of 1
<b>HIGHWAY CONSTRUCTION RESTRICTION NOTIFICATION</b>				
Construction notifications should be emailed to the Division of Motor Carriers Overweight/Over-Dimensional Section to <a href="mailto:owod.dmc@ky.gov">owod.dmc@ky.gov</a> at least 10 business days prior to construction when possible. If you have any questions, you may call the Section at (502) 564-1257.				
DATE (notification)		WORK (type)		
ROUTE #	RESTRICTION(start date)	RESTRICTION(end date)	MILE POINT (starting)	MILE POINT (ending)
COUNTY	DIRECTION	SPEED LIMIT (posted)	(work zone)	LANE LIMIT (duration)
<b>PHYSICAL MEASUREMENT OF NARROWEST POINT</b>				
WIDTH		HEIGHT		
<b>ACCEPTABLE LOAD DIMENSIONS FOR RESTRICTED AREA</b>				
WIDTH	LENGTH	HEIGHT	WEIGHT	
SUGGESTED DETOUR ROUTE (if applicable)				
<b>ACCEPTABLE DIMENSIONS FOR THE DETOURED ROUTE</b>				
WIDTH	LENGTH	HEIGHT	WEIGHT	
<b>CONSTRUCTION PROJECT ENGINEER CONTACT INFORMATION</b>				
ENGINEER	PHONE (work)	(cell)	EMAIL	
CC: <a href="mailto:KYTCTOC_operators@ky.gov">KYTCTOC_operators@ky.gov</a> District Public Information Officer		3 ft. cushion is the minimum suggested. Areas may require more or less depending on curvature of roadway and other factors.		
				

A.6 Construction Memorandum No. 06-11



**Steven L. Beshear**  
Governor


**TRANSPORTATION CABINET**  
Frankfort, Kentucky 40622  
[www.transportation.ky.gov/](http://www.transportation.ky.gov/)

**Michael W. Hancock, P.E.**  
Secretary

**MEMORANDUM**

**Construction Memorandum No. 06-11**

**TO:** Chief District Engineers  
District TEBM for Project Delivery & Preservation  
District TEBM for Engineering Support  
District Section Engineers  
Central Office Division Directors

**FROM:** Steven Criswell, P.E. Director   
Division of Construction

**DATE:** September 2, 2011

**SUBJECT:** Notification for Limitation on Overweight/Over Dimensional Loads

The Division of Motor Carriers is responsible for issuing permits for vehicles hauling overweight and oversized loads. They issue approximately 400 single use permits per day as well as 5,000 annual use permits. These permits dictate the route the permitted load must travel plus any acceptable alternative routes.

Anytime that our construction or maintenance activities restrict the overhead clearances or width of a roadway, the Division of Motor Carriers should be notified to assist in the selection of the permitted routes without interfering with work zones. Failure to provide this notification often leads to problems of restricted loads trying to maneuver through the work zones.

In order to simplify the notification process, the Section Engineer should complete the attached form and submit electronically to the Division of Motor Carriers Overweight/Over Dimensional Section at [owod.dmc@ky.gov](mailto:owod.dmc@ky.gov) and to the Traffic Operations Center in Frankfort at [KYTCTOC.Operators@ky.gov](mailto:KYTCTOC.Operators@ky.gov). This form will be posted on our Division of Construction website at the following link: <http://transportation.ky.gov/Construction/Pages/Engineers-Resource-Center.aspx>. It is recommended that a copy of the notification form be provided to the District Public Information Officer (PIO) in order to maximize their ability to assist our Construction and Maintenance forces in notifying the public of the restrictions.

The information that is provided must be updated accordingly as conditions on the project change. This form must be sent to the Division of Motor Carriers as least 10 business days prior to the restrictions being instituted. Considerations for any restrictions should be included in the preconstruction meeting if possible.



An Equal Opportunity Employer M/F/D



When providing information concerning restrictions on your respective work zones **do not** state the exact opening but rather the maximum size load that should be permitted. A “cushion” should be provided of an acceptable dimension such as an extra 1.5 ft. per side for an over wide load. For example, a 10.5 ft. traffic lane should be restricted to any loads widths that exceed 7.5 ft.

The annual permits are issued once per year to companies that haul consistently oversize loads such as mobile home haulers. The haulers are required to contact the Division of Motor Carriers prior to every transport but unfortunately that does not always happen. With the approximately 5,000 permits of this type issued yearly the main defense against over-sized loads in work zones is proper signage prior to the last available detour route. A variable message board is a great tool which can help with conveying the restrictions to the traveling public.

It is also important to notify the Division of Motor Carriers when the lane restrictions have been eliminated in your work zones. This can be done by email as well or by calling (502) 564-1257.

Please contact this office should you have any questions.

Attachment

C: S. Waddle      PAIKY  
B. Lewis      KAHC  
E. Merryman  
Martin Mathews, Division of Motor Carriers  
Jerame Brown, Division of Highway Safety

# KYTC - Division of Motor Carriers

## Highway Construction Notification Form

\*\*\*Construction notifications should be e-mailed to the Division of Motor Carriers Overweight/ Over Dimensional Section [owod.dmc@ky.gov](mailto:owod.dmc@ky.gov) at least 10 business days prior to construction when possible. Call the Overweight/Over Dimensional Section at (502)564-1257 if you have any questions.\*\*\*

**Notification Date:** Click here to enter a date.

**Work Type:** Choose Work Type.

**Route Number:** Click to enter Route #.

**County:** Click here to enter County.

**Construction start date:** Click here to enter a date.

**Direction:** Choose Direction.

**Construction end date:** Click here to enter a date.

**Posted Speed Limit:** Choose an item.

**Starting mile point:** Click here to enter mile point.

**Workzone Speed Limit:** Choose an item.

**Ending mile point:** Click here to enter mile point.

**Lane Limit Duration:** Choose an item.

**Physical measurement of narrowest point:**

**Width:** Click here to enter text. **Height:** Click here to enter text.

**Acceptable load dimensions for restricted area:**

**Width:** Click here to enter text. **Length:** Click here to enter text.

**Height:** Click here to enter text. **Weight:** Click here to enter text.

**Suggested detour route: (if applicable)**

Click here to enter text.

**Acceptable dimensions for the detoured route:**

**Width:** Click here to enter text. **Length:** Click here to enter text.

**Height:** Click here to enter text. **Weight:** Click here to enter text.

**Construction project Engineer contact information:**

**Engineer:** Click here to enter text.

**Work number:** Click here to enter text.

**Mobile number:** Click here to enter text.

**Email address:** Click here to enter text.

cc: [KYTCTOC\\_operators@ky.gov](mailto:KYTCTOC_operators@ky.gov)  
District Public Information Officer

## A.7 Ohio Special Hauling Permits Quick Start Instructions

- A. Obtain User Login Name and Password from ODOT Special Hauling Section by completing an [OS-7 form](#). If you haven't already, have your insurance company provide ODOT with a completed [OS-32 form](#).
- B. After you receive the Login and password from the Permit Office, go to the [Login Screen](#). Note BULLETIN information.
- C. At Login Screen, login to system using User Login Name and Password.
- D. At Application (Welcome) Screen; Select Permit Type (see "[Types of Permits](#)").
- E. **Step 1.** Read and click in the "I Agree" box.
- F. **Step 2.** Enter vehicle and load information. Weight data format has no commas. Dimensional data format is ff-ii (e.g. 13-6). Also, see "[Deck Height Diagram](#)".
- G. **Step 3.** Enter desired starting date of permit. Press Tab key to create permit ending date.
- H. **Step 4.** Enter Origin and Destination. Use this format "City - First (Last) travel route & nearest intersecting street/route" (e.g. ORIGIN [Columbus - 70 & Rome-Hilliard Rd.](#) DESTINATION [Pataskala - 70 & 310](#) )
- I. **Step 5.** Click "Next" to continue. The information entered will be checked for validity.
- J. **Step 6.** Route Selection. (Reference Ch. 4- Permit Step 6- Routing Method.)
1. On item 1 on left "Select Method of Routing", click the drop down. Select "Text Description".
  2. Click on item 2 "Enter Your Trip Description" to start your routing. Select all state and/or US routes between Origin and Destination.  
For Example Start on Route [70](#) at the Intersection of [42](#), Then Head **Implied**, click "Next →" (note - used "upstream" route 42)  
Travel on Route [70](#) go to Intersection of [270](#), Then Head **South**, click "next →"  
Travel on Route [270](#) go to Intersection of [70](#), Then Head **Implied**, click "next→"  
Travel on Route [70](#) at "Go to", click down arrow, select **End at**, Intersection of [310](#), "No Offset/ Exit",  
Click "next→"  
( "next→" button will change "Use Trip")  
Click "**Use trip**" button).
  3. Click item 3 on left to Analyze the route.
  4. Item 4 on left is Route Usage. If route has no errors, click "**Use Selected Route**". If route has errors, click "**Request Office Review**".
  5. Click "Next" at bottom of screen to continue.
- K. **Confirmation Page** - Review this page for correctness. This is the last chance to go back and edit the information.  
Click "Change Application" to edit information OR  
Click "Next" to continue.  
>>>>>>>>> DO **NOT** STOP HERE. YOU MUST GO ON TO THE NEXT STEP TO SUBMIT YOUR REQUEST <<<<<<<<<<
- L. **Step 7.** Enter fax number and contact name.  
Click "Submit" to send request to Permit Office. Write down Job Request number that is displayed. OR  
Click "Cancel" to abort request. Can **NOT** go back to change data from this point. Must start over.
- M. Periodically check "My Reports" **JOB STATUS** (using Job Request number) to verify progress of job. Look for the latest status event shown.
- a. If that status says "Returned for Clarification", then go the Application Page, and Click "**Pending and Returned**" button. Read the Comment field, then when ready to fix the problem, click on the Trip Request number to open

the request. (DO NOT OPEN THE REQUEST AND THEN ABANDON IT.) Proceed through all the screens, fix the problem noted, and do "Submit" on the Payment Page.

b. If that status says "Issued", the fax process should have sent the permit to your specified fax number within 5 minutes of issue. If the fax did not arrive, and it is a good fax number, contact the Permit Office by fax (614-728-4099) and request a re-send.

**A.8 FHWA Letter to the Kentucky Transportation Cabinet**



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Kentucky Division**

June 13, 2019

330 West Broadway  
Frankfort, KY 40601  
PH (502) 223-6720  
FAX (502) 223 6735  
<http://www.fhwa.dot.gov/kydiv>

In Reply Refer To:  
HDA-KY

Mr. Greg Thomas, Secretary  
Kentucky Transportation Cabinet  
200 Mero Street, 6<sup>th</sup> Floor  
Frankfort, KY 40622

Dear Secretary Thomas:

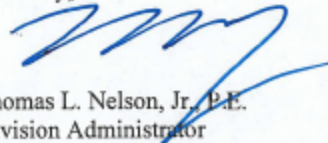
The FHWA Kentucky Division in cooperation with the Kentucky Transportation Cabinet (KYTC) conducted a review of KYTC's overweight and oversize (OS/OW) truck permitting practices on February 6-8, 2019. The review examined the existing KYTC process for routing overweight vehicles to determine if the process adequately addresses bridge safety risks and ensures bridge components are not overstressed.

The review included the finding that KYTC does not properly evaluate overweight permits for vehicles weighing between 88,000 and 200,000 pounds. Essentially, permits are issued based on limits on axle groups, irrespective of axle spacing.

It is recognized that KYTC is currently developing and implementing an automated on-line permitting/routing tool called Bentley Superload automated routing system (ARS). Deployment of ARS with full routing and structural evaluation capability should greatly improve KYTC's permitting process and correct many of the deficiencies noted in the attached report. However, KYTC's implementation of ARS has been delayed several times and the current planned timeline for a full implementation of ARS is still undetermined. To remain compliant with federal requirements, the full implementation of ARS needs to be expedited or a separate process that corrects the noted deficiencies be implemented in the interim. To accomplish this task an implementation plan should be developed that clearly defines the actions, responsible parties, schedule, and budget that will be used to address the recommendations.

Please provide a response to the recommendations of this report by July 15, 2019. Thank you in advance for your attention to this matter and for the assistance provided by your staff during the review.

Sincerely,



Thomas L. Nelson, Jr., P.E.  
Division Administrator

cc: Brian Beaven, Director - Division of Motor Carriers  
Josh Rogers, Branch Manager - Bridge Preservation, Division of Maintenance

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## FHWA/KYTC Overweight Truck Permitting Process Review Report

February 6-8, 2019

### Summary of Findings

#### Background:

The FHWA Kentucky Division Office (FHWA-KY) in cooperation with the Kentucky Transportation Cabinet (KYTC) conducted a review of KYTC's overweight permitting practices on February 6-8, 2019. The review was performed as an extension of the annual National Bridge Inspection Oversight Program (NBIOP) review of Metric 13, Bridge Load Ratings, with an emphasis on the need to examine the State's compliance with respect to load rating bridges for annual permits as required by 23 CFR 650.313(c). The review examined whether the existing KYTC processes for routing overweight vehicles adequately addresses bridge safety risks and ensures bridge components are not overstressed. The objective was to identify and document commendable practices in the KYTC overload permitting program and opportunities for improvement and efficiency in the program.

The National Bridge Inspection Standards (NBIS) require every bridge in a State's inventory to be load rated. This requirement has been in place since the implementation of the NBIS in the early 1970's. The data from the process of load rating bridges serves three primary operational purposes: 1) to identify bridges that cannot carry current State legal and routine permit loads and thus should be posted and/or restricted, 2) to assess whether oversize/overweight (OS/OW) permit configurations can be safely routed over bridges and, 3) to manage and operate the bridge network and support bridge rehabilitation and replacement decisions. KYTC's Division of Maintenance routinely maintains and updates bridge load rating data, therefore it is possible to determine whether overweight trucks that are issued permits to operate on the highway network would damage or compromise the structural integrity and safety of highway bridges throughout the State. This determination will allow appropriate route restrictions to be established.

Specifically, 23 CFR 650.313(c) requires that States load rate each bridge for legal and routine permit loads that operate within a State. Although load rating requirements have been in place since the 1970's, in 2008 FHWA found that many States do not have current load ratings for large numbers of bridges in their inventory, particularly for those bridges owned by local agencies. The KYTC Division of Maintenance has made significant progress in the past six years to update all bridge load ratings and necessary bridge postings. In addition, the KYTC load rating staff has re-rated bridges for new legal load configurations including Specialized Hauling Vehicles and Emergency Vehicles, which now operate legally in every State and produce higher force effects on bridges than traditional legal loads, in addition to re-rating of structures as necessitated by deficiencies identified in biennial bridge inspections.

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Kentucky has many older bridges in their inventory that were not designed to accommodate today's truck loads. KYTC monitors bridge component deterioration, through their bridge safety inspection program, and re-computes the capacity of bridges over their life cycle through the load rating process. Most States have recently observed dramatic increases in the numbers of overweight permits requested. Likewise, KYTC's permitting staff is faced with the challenge of issuing high volume of permits in short time frames.

This review focused on KYTC's specific processes for issuing overload permits, as it relates to the national state-of-practice, and assessed whether those processes are current with constantly changing rules that govern freight movement at both the federal and State level.

The key findings and recommendations compiled by the review team are summarized in this report.

**Scope of review:**

A review team comprised of members of KYTC and FHWA interviewed key members of KYTC load rating and permitting staff, and law enforcement agents to assess the adequacy of the KYTC's overload permitting procedures.

In the State of Kentucky, KYTC is responsible for carrying out the requirements of the NBIS. The Division of Maintenance is responsible for the inspections and load rating of State and locally owned bridges. KYTC Division of Motor Carrier is responsible for processing and issuing OS/OW permits for vehicles operating on State-maintained highways. Local agencies are responsible for issuance of OS/OW permits on their locally-owned roads and bridges. Local agency permitting processes were not reviewed.

The following individuals served as the review team:

Brian Beavan, KYTC Division of Motor Carriers  
Dora Alexander, KYTC Division of Maintenance  
Evan Dick, FHWA KY Division Office  
Bernadette Dupont, FHWA KY Division Office  
Lubin Gao, FHWA Office of Bridges and Structures  
Anwar Ahmad, FHWA Resource Center  
Tom Saad, FHWA Resource Center

To understand the significant steps in the process for issuing overweight permits, the review team collected and reviewed Standard Operating Procedures, State-specific load rating and permitting procedural manuals and recent compliance reports on KYTC's Commercial Vehicle Size and Weight Program in advance of interviews that were conducted with specialists from the KYTC Division of Maintenance, Motor Carriers and the State Police, as well as other staff and contractors involved in issuing overweight permits, weight enforcement and bridge load rating.

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A Process Review Work Plan, to organize the key steps in the review, is included in this report as **Appendix A**. The individuals that participated in much of the review, or were interviewed include:

Paul Looney, Deputy Secretary, KYTC  
John Moore, Assistant State Highway Engineer, KYTC  
Jon Wilcoxson, Assistant State Highway Engineer, KYTC

Brian Beaven, Director of the Division of Motor Carriers, KYTC  
Mary Cook, Assistant Director, Division of Motor Carriers, KYTC  
Robin Snook, Branch Manager of Qualifications and Permits, Division of Motor Carriers, KYTC  
Sam Drake, Section Manager of Over Weight/Over Dimension, Division of Motor Carriers, KYTC  
Drew Clark, Resource Analysis III, Qualification and Permits, Division of Motor Carriers, KYTC  
Joe Craig, Resource Analysis II, Over Weight/Over Dimensional, Division of Motor Carriers, KYTC

Josh Rogers, TE Branch Manager, Division of Maintenance, KYTC  
Dora Alexander, Load Rating Engineer, Division of Maintenance, KYTC

Dan Leahy, Bentley Project Manager, KYTC Office of Information Technology  
Jon Cordier, Business Analyst, KYTC Office of Information Technology

Nancy Albright, University of Kentucky's Transportation Center  
Jerry Kissick, University of Kentucky's Transportation Center

Officer Jerry Hudson, Staff Assistant, Division of Commercial Vehicle Enforcement, KY State Police  
Lt. Neil Johnson, Branch Manager, Division of Commercial Vehicle Enforcement, KY State Police

The review team identified several commendable practices implemented by KYTC in roadside and weigh station enforcement, and bridge load rating and overload permitting processes. Those practices are listed below, followed by a summary of Opportunities for Improvement and Recommendations to address gaps that are considered substandard in comparison to the national state-of-practice. One recommendation is specific to the need for KYTC to load rate bridges for annual permits, which is required by the National Bridge Inspection Standards and addresses a deficiency that would necessitate a Plan of Corrective Action for Metric 13 of the National Bridge Inspection Oversight Program.

A close-out meeting with members of FHWA Kentucky Division office and KYTC was included in the review to provide preliminary findings and recommendations. The PowerPoint slides are included as Appendix B.



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**Commendable Practices:**

**Commendable Practice 1.** KYTC has a plan in place to deploy an electronic and automated permitting tool, Bentley Superload (ARS), to support the analysis of overweight permits that will allow for the force effects of the truck permit loads to be analyzed against bridge capacity, along each specific permit route.

Similar automated routing systems (ARS) are used by many States for issuing overweight permits. KYTC performed several demonstrations of the ARS during the review. The system can analyze all bridges along a requested route against the force effects that a truck produces on each of the bridges within seconds, or minutes, depending on the length of the route and complexity of bridges. The software utilizes the bridge load rating data that is generated and maintained by the KYTC Division of Maintenance.

The initial KYTC implementation date to deploy Bentley Superload, which requires the support of the KYTC Information Technology Office, Division of Motor Carriers, Division of Maintenance and contractor, was delayed on several occasions. The Bentley Superload product was soft launched on May 17, 2019. The Bentley system currently performs route analysis on all single trip permits. KYTC is currently working with a few select companies to test the system before fully launching the system for use by all customers. There are several opportunities for improvement that will be discussed in a latter section of this report. The objective to implement the ARS to improve the analysis of overweight permits is commendable.

**Commendable Practice 2.** The bridge load rating staff in the Division of Maintenance has managed to produce thousands of bridge load ratings and re-ratings in the past six years, making it possible to utilize tools, such as Bentley Superload, for automated permitting.

The Division of Maintenance load rating staff appears to operate very efficiently with a relatively small staff (three load rating engineers). They have managed many challenges that have impacted bridge load ratings, including the need to re-rate bridges for new legal load models including Specialized Hauling Vehicles and Emergency Vehicles. They have established new procedures to ensure proper and timely posting of bridges.

The Division of Maintenance has worked with bridge inspectors and bridge management engineers to ensure quality inspections, particularly as they relate to the need to collect information for bridge load rating and re-rating. All State and locally owned bridges have a current load rating and a Plan of Corrective Action is in place to ensure all bridges are posted.

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**Commendable Practice 3. Overweight permits that equal or exceed Gross Vehicle Weight of 200,000 lbs. are assessed to ensure the force effects from the permit loads do not overstress bridges along the routes established in the permit, in a timely manner.**

This process requires effective coordination between the KYTC Motor Carrier and Maintenance offices. KYTC's Division of Maintenance continues to be able to perform analyses within ten days, even though the number of permit evaluations is increasing. The procedure ensures that bridges are not damaged by overload vehicles and allows for permits loads to operate on posted bridges, when the bridge capacity is adequate.

**Commendable Practice 4. KYTC is currently collecting and assessing Federal and State-specific laws and regulations that impact freight movement to clarify the intent of each rule and determine which regulations supersede others, so the Division of Motor Carriers can ensure regulations are properly applied in the permitting process.**

The Divisions of Motor Carrier and Maintenance face significant challenges to update permitting, load rating and posting procedures whenever the state legislature or federal government establishes new laws that impact freight movement. For bridge engineers, it is often difficult to interpret and understand how to implement some changes to the law into the load rating process, so KYTC, under a contract with the University of Kentucky Transportation Research Center, is collecting and evaluating regulations and clarifying the intent and applicability of these laws.

**Commendable Practice 5. KYTC is recognized as a lead State in deploying new technologies to improve weight enforcement activities across the State.**

While the emphasis of this review was specific to practices to issue overweight permits, and the impacts on highway bridges, the review team focused part of the review to understand enforcement aspects. This was accomplished by interviewing two enforcement officers and by reviewing the *"2018 Evaluation Report of the Kentucky 2017 Commercial Vehicle Size and Weight Program"*. KYTC is recognized as a lead State in implementing a variety of technologies including C-Vision technologies, virtual weigh stations, and using automated technologies that aid enforcement officers in the identification of roadway classifications. While it was determined that State Police CVE staff levels are lower than in previous years, the KSP has plans on hiring additional civilian staff to support weight station operations. Although, this is a positive step in the right direction, concerns remain about current and future uniformed enforcement staffing capacity. It was noted that it takes more than 3 years for a new uniformed officer to be fully trained in enforcing applicable freight laws and regulations.

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**Commendable Practice 6. The Division of Motor Carriers recently established Standard Operating Procedures (SOPs) for issuance of overweight permits.**

The SOPs document the approach and responsibilities for issuing the permits and criteria that must be met. It is critical to document permitting processes for consistency and clarification for users, operators and technicians. Likewise, the load rating engineers have recently updated the load rating procedural manuals so there is consistency in the application of the procedures. The comprehensive documentation and maintenance of procedural manuals and SOPs is commendable.

**Opportunities for Improvement and Recommendations:**

**Opportunity for Improvement 1. Currently, KYTC does not issue permits based on an analysis of the truck load force effects against the bridge capacity, except for permit loads that equal or exceed a Gross Vehicle Weight (GVW) of 200,000 lbs.**

In 2018, KYTC issued over 100,000 OS/OW permits. There are approximately 400-500 permits issued annually with vehicle weights over 200,000 lbs. Currently, overweight loads between legal load levels (80,000 on Interstate bridges and 88,000 lbs. on State roads), up to 200,000 lbs. are not analyzed to ensure they are safe to operate and do not overstress bridges along the permitted routes. Essentially, KYTC permits are issued based on limits on axle group weights as established in Kentucky's Administrative Regulations (KARs), irrespective of axle spacings. 'Precedent', the ability of the permit issuer to recall route restrictions based on memory of the thousands of bridges and roadways on which they have previously allowed overweight vehicles to operate on in the past, is the only approach that issuers use in addition to limits on axle group weights. The issuer does not have any tool that allows them to rigorously utilize bridge capacity and clearance data in assessing permit routes and bridge capacities that is made available by the Division of Maintenance.

The national standard for issuing permits is to utilize electronic tools that allow the issuer to rigorously check the capacity of each bridge, real-time, against the force effects of the permit vehicle. This requires not just axle group weights, but also axle spacings, to compute the force effects of the vehicle. Force effects produced by trucks vary widely depending on the concentration of the axle spacing.

The review team believes the approach to forgo analysis of each bridge for each overload model poses an unacceptably high risk for bridge safety and is not in accordance with the national standard of practice. Issuing overload permit based on limits on axle group weights, irrespective of axle spacing, is inadequate as a national standard since the force effects on the bridge vary greatly with axle spacing. KYTC has recently had incidents that necessitated emergency closures of bridges due to a bridge member fracture. Some of these fractures are due to bridge component overstress. In addition, in trials of the new ARS, it was noted that the

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ARS would preclude permits to be issued that are commonly issued today. That is, with the testing of the ARS the Division of Motor Carriers realizes that their current practice is allowing bridges to be overstressed by permit vehicles.

KYTC has planned to address these concerns by deploying an ARS. However, the initial project has been delayed several times. Version 4.11, currently being used in the pilot phase, is capable of perform analysis on single trip permits. The system has the potential to automatically issues 40% of the permits, while the other 60% are queued for KYTC staff to review. Version 5 of the Bentley software will allow route analysis to be performed on routine and single trip permits. The ARS will be able to support the analysis of all permit load requests, provided KYTC implements the Bentley Superload product with 'route verification'.

The implementation of an ARS should be deployed immediately and utilized to deny or accept all overweight permit requests that are issued by the Division of Motor Carriers. Both routine and route specific single trip permits can make use of this tool, assuring that each bridge along a requested route would not be overstressed, or providing an alternative safe route. This is a common standard of practice across the country. There are alternative approaches that States use to measure truck loads against bridge capacity, but the full implementation of the capabilities of an ARS is considered most effective and efficient.

**Recommendation 1:** Make the implementation of an ARS a high priority and ensure that the overload permitting capabilities and features of the system are fully functional and used in the permit issuing process. This includes an evaluation of the specific truck force effects against the bridge capacities as a routine process for issuing a permit for the operation of an overload vehicle.

**Opportunity for Improvement 2. KYTC is not in compliance with the National Bridge Inspection Standards requirement to load rate bridges for routine (or annual) permits.**

The Division of Motor Carriers issues thousands of routine permits that allow for specific trucks with GVWs up to 160,000 lbs. to operate an unlimited number of trips throughout the State, each year. USC 23 CFR 650.313 (c), requires bridge owners to load rate each bridge for State legal and routine permit loads and post or restrict those vehicles that would overstress a bridge. The GVWs of eight routine permits have been established by KYTC, but there are no specific truck configurations that coincide with these permits. To issue routine permits properly, the axle spacings and weights need to be established so that engineers can load rate the bridges for these vehicles.

**Recommendation 2a:** For the eight routine permits that the Division of Motor Carriers currently issues, conduct a study of permits that have been traditionally issued and develop specific axle configurations that must be observed. KYTC should issue routine permits only for vehicles with specific GVWs, axle weights and axle spacings. Based on an examination of trucks that operate

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as routine permits traditionally, KYTC should define specific configurations that envelop many of the configurations that have been commonly used, while eliminating those more severe configurations that are likely to overstress bridges.

**Recommendation 2b:** Each bridge needs to be load rated for routine permit configurations that operate within a State. Therefore, specific routine permit configurations need to be available to the Division of Maintenance so that each bridge can be load rated for those routine permit models.

**Recommendation 2c:** As an alternative to having the bridge engineer load rate each bridge for each routine permit, deploy the capabilities of an ARS that would allow the Division of Motor Carriers to issue routine permits requiring 'route verification'. Under this approach, a carrier that holds a routine permit will verify that the truck will not overstress a bridge, on a daily, or operational, basis. This allows for routine permit trucks to operate on routes that have posted bridges, provided they verify their route each time they operate. This also ensures that the overload trucks are evaluated against the bridge capacity based on the latest bridge inspection. This approach relies on the ability of the carrier to log in and use the ARS in an automated fashion.

**Opportunity for Improvement 3.** Although bridge clearance and posting data have existed for years in the National Bridge Inventory, this data is not being fully used to guard against 'bridge strikes' by over dimensional vehicles whose height exceeds the bridge clearance.

Many States have the capacity to electronically utilize existing bridge inventory and load posting data to aid in assessment and routing of overweight/over-dimensional permits. Electronic tools could be developed to utilize existing bridge inventory data to support the analysis of routes to ensure overweight or over-dimensional vehicles do not damage bridges and allow for re-routing around posted bridges. Again, the lack of staffing and resources is likely limiting the use of existing data to be deployed to support issuance of OS/OW permits. Currently, the Division of Motor Carrier uses 'precedent' to assess bridge capacity and clearance, which is simply the recollection of the two issuing specialists to remember where trucks have been routed in the past and does not account, in a comprehensive and safe manner, the potential for recent changes in bridge capacities, due to deterioration or strengthening, or clearances based on the most recent bridge inspection and reconstruction projects.

**Recommendation 3:** Include the use of existing bridge clearance and load posted bridge data in a comprehensive plan to deliver electronic, automated OS/OW permits. This bridge clearance data is readily available but cannot be used by the Motor Carrier staff since a proper routing tool has not been developed to electronically verify bridge clearances or identify the 2500 posted bridges, in a timely fashion. The ARS can be deployed to implement this data.

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**Opportunity for Improvement 4.** Staffing and resource limitations appear to be driving the process for issuing overweight permits rather than the objective to ensure permits are issued with the goal to ensure safety and preserve the bridge and road network.

Currently, the Division of Maintenance has three engineers that are working at full capacity with the need to load rate and maintain thousands of bridge load ratings and assess hundreds of route specific permits that exceed GVWs of 200,000 lbs. The Division of Motor Carriers has six full-time positions (one is currently vacant) dedicated to issuing 100,000 permits, annually. Two staff members are primarily responsible for evaluating and reviewing all permit requests. It will require more resources to adequately operate the permitting program if KYTC desires to deploy an ARS in a timely fashion.

In addition to implementing the current contract scope of the ARS, which is scheduled to be completed in April 2019, it will require additional and significant development and testing efforts to fully deploy all functionality of the system so that it can support the issuance of all overweight permits. The number of permit requests within Kentucky has greatly increased in 2018, and is likely to continue to grow. In addition to deploying the full functionality to allow the ARS to offer route verification for routine permits, the Motor Carrier staff indicated that operational procedures and manuals, training for users, operators and technicians and additional software tools need to be developed to allow users to efficiently request permits, electronically. KYTC plans to utilize the FAQs and videos that the Bentley system has available to help answer customer questions.

**Recommendation 4:** Develop a comprehensive plan to establish all KYTC objectives to implement electronic, automated overweight/oversize load permitting. Establish objectives for issuing permits out of the Division of Motor Carriers and/or for automated permit issuance by the carriers. Include in this plan the need to define routine permit configurations with axle spacings, the application of 'route verification' or the need to re-rate all bridges for routine permits, automating bridge clearance data for routing oversize vehicles, evaluating overweight permits against bridge capacity and the need to develop and document program and training manuals and procedures. Based on this plan, establish costs and other resources in terms of in-house and contract staff that is needed to 'build' the overweight permitting program. The resources needed for development and deployment of a comprehensive permitting program could be recaptured in the future with fees to issue overweight permits. Once the desired permitting program is in place, reassess staffing levels needed to maintain the load rating and permitting programs. The leveling of staffing, resources and effort to 'build' the desired permitting program will be greater than that to maintain and operate the system. Efficiencies will be available once the program is operational.

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**Opportunity for Improvement 5.** The 'ownership' of a comprehensive ARS to issue OS/OW permits should reside within the KYTC Division of Maintenance and/or the Division of Motor Carriers where the expertise and management of the program exists and the demand for the system is a high priority.

The management of the current contract to deploy the ARS contract within KYTC is led by the Information Technology Office, with support of the Division of Maintenance and the Division of Motor Carriers. While cooperation amongst the various offices exists, there doesn't appear a clearly defined roles and responsibilities for each of the offices in the deployment of this new system.

**Recommendation 5:** Temporarily staff the Division of Maintenance and/or the Division of Motor Carriers so they can lead the development of a comprehensive implementation plan for the ARS and oversee program development and deployment. Collaboration and coordination between all offices and contractor will continue to be crucial, however business project manager(s) with full understanding of both the business and technical requirements is a key ingredient for successful deployment of the ARS. The review team recommends that the business lead be someone from either the Division of Maintenance or the Division of Motor Carriers.

**Conclusions:**

KYTC's approach for issuing overweight permits results in a high risk that permitted OS/OW vehicles could operate unsafely over bridges and/or cause premature damage to bridge components. KYTC has a pilot project in place to implement the Bentley Superload software program. Currently, KYTC electronically assesses truck load against bridge capacity when permit trucks have GVWs that exceed 200,000 lbs. However, this should be a key function of issuing overload permits for all overload vehicles.

The delays in the implementation of the ARS and the number of existing staff dedicated to issuing permits, suggest that limited staffing and resources inhibits the ability of KYTC to implement a sound overweight permitting program. This raises the need for an automated program to be a high priority. This report includes recommendations that should be implemented to ensure that all permits that are issued have been comprehensively examined to ensure loads do not exceed computed bridge capacities. KYTC has spent considerable resources to make available key data that is necessary for the evaluation of overweight permits, through the load rating program. Additionally, the bridge inspection program provides accurate data including load posted bridges and bridge clearance data that should be used in issuing OS/OW permits. However, this data cannot effectively be utilized to issue permits

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unless tools are in place to electronically sort and analyze the data. The full implementation of the ARS as the base for a fully automated permitting/routing tool can be established in Kentucky if a comprehensive implementation plan is developed and resources are provided to complete the effort.

KYTC has not rated bridges for routine (annual) permits that operate within Kentucky, and is not in conformance with the requirements USC 23 CFR 650.313 (c). Furthermore, the bridge load rating engineer cannot evaluate bridges for the routine permits since the routine permits do not specify axle spacing. Each bridge needs to be load rated for annual permit configurations. Therefore, KYTC needs to define annual permit configurations to include axle spacing. In lieu of rating each bridge for annual permits, KYTC could issue annual permits through an ARS that includes 'route verification'.

The staff that we interviewed included KYTC bridge load rating, permitting and enforcement staff that are very professional and are diligent in performing the work that is defined and achievable within the constraints of the tools that are available. Undoubtedly, they are very capable of delivering a high quality electronic, automated permitting program if comprehensive goals and plans are established and adequate resources are made available for this purpose.



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**APPENDIX A: PROCESS REVIEW WORK PLAN**

**KYTC/FHWA Truck Load Permitting Process Review  
Work Plan  
December 1, 2018**

**Background:**

State Highway Agencies (SHAs) issue tens of thousands of oversize/overweight (OS/OW) permits annually. Many SHAs report that the numbers of OS/OW permits issued have increased dramatically over recent years due primarily to increases in fuel costs. The capacity of highway bridges can diminish over time due to years of operation, deterioration and overstress. Highway bridges are inspected and load rated every two years to ensure bridge safety and provide critical information for managing and operating the bridge network. It is necessary to scrutinize each permit request prior to issuance of an overweight permit to ensure that the existing highway bridges can safely carry, and not be damaged by, the overweight vehicles. SHA Bridge Design or Maintenance Offices often have the responsibility for load rating bridges to ensure that bridges are posted and preserved, while separate State offices, without the skills to assess bridge capacity, issue overweight truck permits. It is vital that the load rating engineers and load permitting agency carefully coordinate efforts to ensure bridge safety and preservation.

The FHWA Division Office and the Kentucky Transportation Cabinet will conduct a process review to examine the process of issuing oversize/overweight (OS/OW) truck permits, to identify best practices and opportunities for improvement in the program. This review will examine whether adequate coordination and procedural steps are deployed to ensure bridge safety and preservation is adequately addressed in the process of issuing permits for overweight vehicles.

**Objective:**

The KYTC routinely load rates bridges, as required by regulation, to manage their bridge network and load posts bridges that cannot safely carry State legal loads. In recent years, KYTC has had several instances when emergency closures of unposted bridges were required due to sudden fractures in bridge elements. With an emphasis to ensure preservation of the KYTC bridge network and bridge safety for the traveling public, the FHWA and KYTC will examine the current procedures for issuing OS/OW permits to assess whether the procedures are up-to-date, thorough, performed in a timely manner and account for the level of deterioration in the capacity of bridges over which the overweight vehicles are routed.

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**Scope:**

Conduct a bridge OS/OW truck permitting program review. Review documented bridge load rating and permitting procedures and practices in advance of a face-to-face meeting to interview bridge load rating and permit issuing managers and staff. Assess the level of coordination, cooperation and safety and effectiveness of truck load permitting and verify the process is thoroughly documented.

A final report documenting best practices and opportunities for improving the load permitting program will be drafted.

**Participants/Responsibilities:**

- Evan Dick, FHWA DO, develop agenda and draft final report
- Bernadette Dupont, FHWA DO, review team member
- Brian Beaven, KYTC, review team member
- Josh Rogers, KYTC, review team member
- Dora Alexander, KYTC, review team member
- Lubin Gao, FHWA HIBS, review team member
- Anwar Ahmad, FHWA RC, review team member
- Tom Saad, FHWA RC, develop agenda and draft final report

**Schedule:**

	<b><u>Due by:</u></b>
Finalize Process Review Work Plan	Dec. 6, 2018
Collect and disseminate permitting procedures to review team	Dec. 14
Finalize agenda for face-to-face meetings	Jan. 31, 2019
Face-to-face interviews conducted	Feb. 6-8
Prepare draft report of findings and recommendations	Mar. 8
Complete review of report by the team members	Mar. 29
Submit final report	Apr. 30



# FHWA/KYTC OW Permitting Process Review

Close-Out Report  
Observations and Recommendations



Federal Highway Administration

February 8, 2019

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## Outline

- Objective of Review
- Review Approach
- Commendable Practices
- Opportunities for Improvement/  
Recommendations

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## Process Review Team

- Brian Beaven- Director, KYTC MC
- Dora Alexander- Load Rating Engineer, KYTC BP
- Evan Dick- KY DBE, FHWA
- Bernadette Dupont- KY TS, FHWA
- Tom Saad- SE, FHWA RC
- Anwar Ahmad- Tech. Director STST, FHWA RC
- Lubin Gao- Load Rating Eng., FHWA HIBS

## Process Review Objective

- FHWA/KYTC Team assembled to examine KYTC's current load permitting practices compared to national state-of-practice
- Emphasis on bridge preservation and safety
- Identify commendable practices implemented by KYTC and KSP
- Document Opportunities for Improvement

## Approach

- Draft process review work plan, establish review team and prepare agenda
- Collect and conducted cursory review of process manuals, SOPs and 2017 S&W Report
- Conduct interviews with KYTC Bridge preservation, Motor Carrier and KSP staff
- Report by April, 2019 (with review by participants)

## Commendable Practices

- Efforts underway to implement automated permitting/routing for OW vehicles
- Observed cooperation, coordination among Bridge Preservation, MC, KSP, IT and FHWA offices
- MC, KSP report implementation of new technologies and planned increases in civilian staff to support weight enforcement operations

## Commendable Practices

- Rating and re-rating of thousands of bridges in past 5 years to include new load models
- Superload (>200K lb GVW) permitting process
- Summarizing and clarification of regulations of OS/OW vehicles

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## Opportunities for Improvement

- Implement Automated/Electronic Permitting Immediately
  - Currently, no analysis of overloads against bridge capacity (except superloads)
    - Does not comply with NBIS
  - Assess types of Annual Permits currently issued and need for restructuring
    - Load studies to assess
    - Concept of annual permit with 'route authorization'
  - Ownership of implementation??? Years of delay.
  - Staffing limitations drive current process application rather than objectives driving process
  - Utilize data that is available; including bridge capacity and bridge clearance/height

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## Opportunities for Improvement

- Update permitting procedures and objectives
  - Define the types of annual permits that need to be issued (conduct weight and parametric studies)
  - Develop comprehensive guideline manual
  - Training of users, operators, technicians
  - Assess staffing needs to implement and maintain new procedures
  - Process will appropriately result in denial of some permits that are currently being issued
- Assess needed resource for Overweight Vehicle Enforcement ( Staff, technology, equipment and training)

## Prepare Report/Executive Summary

Questions?



## A.9 Kentucky Transportation Cabinet Letter to FHWA Division Administrator



**Matthew G. Bevin**  
Governor

**COMMONWEALTH OF KENTUCKY**  
**TRANSPORTATION CABINET**  
Frankfort, Kentucky 40622  
[www.transportation.ky.gov/](http://www.transportation.ky.gov/)

**Greg Thomas**  
Secretary

July 30, 2019

Mr. Steve R. Mills  
Acting Division Administrator  
Federal Highway Administration  
330 West Broadway  
Frankfort, KY 40601

Dear Mr. Mills

The Kentucky Transportation Cabinet (KYTC) has reviewed the findings and recommendations detailed in your June 13, 2019 letter pertaining to our overweight and over dimensional truck permitting practices. A response to each of your office's recommendations is listed below.

**Recommendation 1:** Make the implementation of an ARS a high priority and ensure that the overload permitting capabilities and features of the system are fully functional and used in the permit issuing process. This includes an evaluation of the specific truck force effects against the bridge capacities as a routine process for issuing a permit for the operation of an overload vehicle.

- 1) KYTC has made the full implementation of the Bentley Superload automated permitting and routing software a top priority. The system has been deployed and is currently being utilized by two permitting services and one trucking company in a soft launch of the system. Motor Carrier, Bridges and Information Technology staff are meeting daily to fine tune this system with a goal of fully deploying it as soon as possible. This phased approach was taken to ensure that the system is operating at top efficiency prior to us launching it to all customers. The customers participating in the soft launch have successfully used the system to purchase several hundred permits. One hundred percent of these permits were analyzed to measure the clearance and truck force effects of the load against the bridge capacity of all bridges along the routes. Our goal over the next few weeks is to incrementally roll this system out to all customers.

**Recommendation 2a:** For the eight routine permits that the Division of Motor Carriers currently issues, conduct a study of permits that have been traditionally issued and develop specific axle configurations that must be observed. KYTC should issue routine permits only for vehicles with specific GVWs, axle weights and axle spacings. Based on an examination of trucks that operate as routine permits traditionally, KYTC should define specific configurations that envelop many of the configurations that have been commonly used, while eliminating those more severe configurations that are likely to overstress bridges.



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2a) Motor Carriers has currently provided auto routing for "standard" loads on interstates and parkways within the Superload software. All other single trip permits and annuals are being issued based on guidelines of Kentucky Statutes and Regulations. Any requested moves beyond those limitations are only approved by staff of the Bridge Preservation Office.

**Recommendation 2b:** Each bridge needs to be load rated for routine permit configurations that operate within a State. Therefore, specific routine permit configurations need to be available to the Division of Maintenance so that each bridge can be load rated for those routine permit models.

2b) Routine permit configurations have been made available to the Division of Maintenance and complex structures are being load rated for routine permit configurations. These bridges will be incorporated into Superload by a comprehensive capacity table that Superload utilizes.

**Recommendation 2c:** As an alternative to having the bridge engineer load rate each bridge for each routine permit, deploy the capabilities of an ARS that would allow the Division of Motor Carriers to issue routine permits requiring 'route verification'. Under this approach, a carrier that holds a routine permit will verify that the truck will not overstress a bridge, on a daily, or operational, basis. This allows for routine permit trucks to operate on routes that have posted bridges, provided they verify their route each time they operate. This also ensures that the overload trucks are evaluated against the bridge capacity based on the latest bridge inspection. This approach relies on the ability of the carrier to log in and use the ARS in an automated fashion.

2c) With the full deployment of Superload version 4.11, there will be a restriction set that will require a route verification for all annual permits that are issued via the Superload Software. Route Verifications will have an expiration date that requires the carrier to re-evaluate routes every 25 to 30 days. This will allow permitted loads to be analyzed for bridge updates (posted bridges, restrictions, construction) up until the expiration date of the annual permit. This will ensure that the OW/OD trucks are evaluated against the bridge capacity based on the latest bridge inspection data.

**Recommendation 3:** Include the use of existing bridge clearance and load posted bridge data in a comprehensive plan to deliver electronic, automated OS/OW permits. This bridge clearance data is readily available but cannot be used by the Motor Carrier staff since a proper routing tool has not been developed to electronically verify bridge clearances or identify the 2500 posted bridges, in a timely fashion. The ARS can be deployed to implement this data.

3) KYTC is in agreement with the recommendation. The Superload software currently pulls our NBI data for clearances and incorporates it into the permitting process.

**Recommendation 4:** Develop a comprehensive plan to establish all KYTC objectives to implement electronic, automated overweight/oversize load permitting. Establish objectives for issuing permits out of the Division of Motor Carriers and/or for automated permit issuance by the carriers. Include in this plan the need to define routine permit configurations with axle spacings, the application of 'route verification' or the need to re-rate all bridges for routine permits, automating bridge clearance data for routing oversize vehicles, evaluating overweight permits against bridge capacity and the need to develop and document program and training manuals and procedures. Based on this plan, establish costs and other resources in

Mr. Steve R. Mills  
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terms of in-house and contract staff that is needed to 'build' the overweight permitting program. The resources needed for development and deployment of a comprehensive permitting program could be recaptured in the future with fees to issue overweight permits. Once the desired permitting program is in place, reassess staffing levels needed to maintain the load rating and permitting programs. The leveling of staffing, resources and effort to 'build' the desired permitting program will be greater than that to maintain and operate the system. Efficiencies will be available once the program is operational.

- 4) KYTC has developed a plan to meet these objectives and is in the final stages of fully deploying the Superload software. Additional resources have been allocated in the Division of Motor Carriers, Office of Information Technology and the Bridge Preservation Branch to accomplish this task.

**Recommendation 5:** Temporarily staff the Division of Maintenance and/or the Division of Motor Carriers so they can lead the development of a comprehensive implementation plan for the ARS and oversee program development and deployment. Collaboration and coordination between all offices and contractor will continue to be crucial, however business project manager(s) with full understanding of both the business and technical requirements is a key ingredient for successful deployment of the ARS. The review team recommends that the business lead be someone from either the Division of Maintenance or the Division of Motor Carriers.

- 5) KYTC has developed a plan for the full rollout of the Superload software (see attachment).

KYTC appreciates the feedback from FHWA in regards to our Overweight and Over-Dimensional Permitting process. Should you have any further questions please do not hesitate to contact our staff.



Sincerely,



Greg Thomas  
Secretary

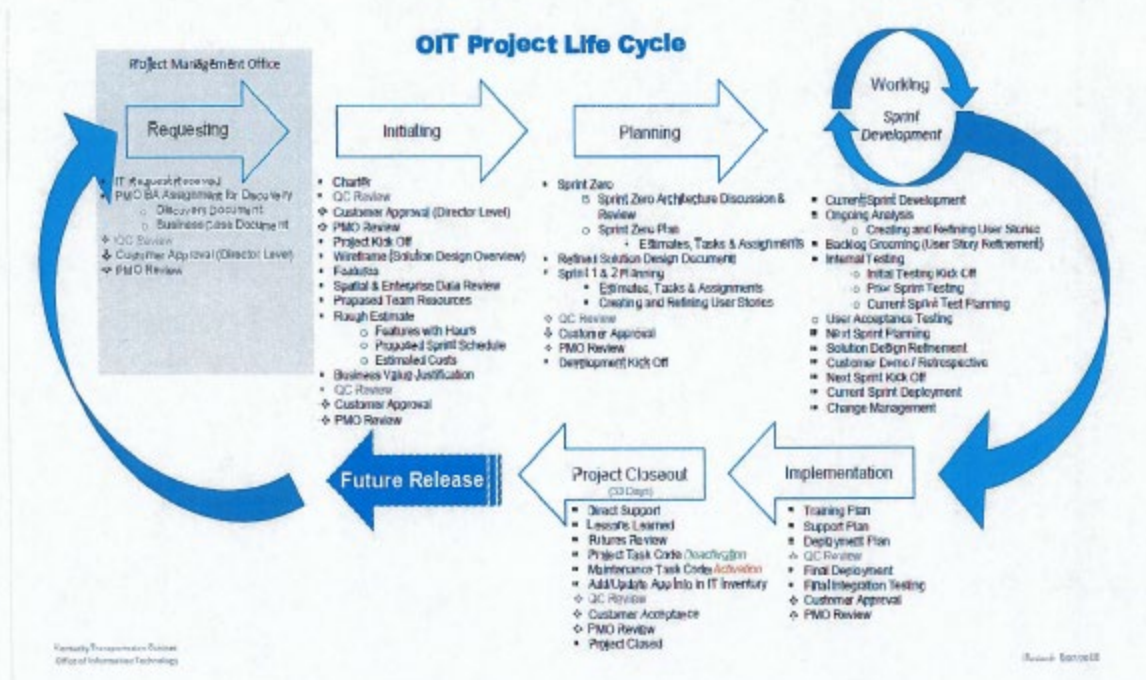
Attachment

C: Brian Beaven – Division of Motor Carriers  
Josh Rogers – Bridge Preservation Branch

	<b>Commonwealth of Kentucky</b> <b>Transportation Cabinet</b> <b>Office of Information Technology</b> <b>Superload Version 4   Implementation Plan</b> <b>(Updated July 1, 2019)</b>	
<b>Team:</b>	<b>Project Manager:</b> Dan Leahy <b>Business Analyst:</b> Jon Cordier <b>DMC Permitting:</b> Mary Cook, Robin Snook, Drew Clark, Sam Drake <b>Planning:</b> Ramsey Quarles <b>Bridges:</b> Dora Alexander, Josh Rogers, Evan Greenwell <b>OIT Technical Staff:</b> David Fuqua, Jim Fisher, Mark Faulhaber	

**Agenda**

- Project Review
  - Reviewed Life Cycle and Sprint Activities – Currently in Working





### Current Status and Next Steps

Project is currently in "Soft" Go-Live stage. There are 2 Permit Services (Permit America and West Chester) and one Carrier (Lone Star) using the system for all activities. We have processed over 100 permits of various types (Annuals and Single Trips). During this timeframe, these "real public users" have found issues that we have been reacting to and making changes. This has been invaluable in making the final go-live be a smooth process.

At this time, there is one additional requirement related to the error messages coming from the screening web service. The messages need to be more specific and granular. We are in the process of development on the KYTC side, as well as putting minor requirements on Bentley to enhance the software. After this is completed, soft go-live will continue for 1 week to validate the changes, and then we will proceed to final go-live.

Concurrently with the changes that are in progress, we are continuing with the process of planning the final roll out by engaging with the State Communications team. We are also planning the training with the District Managers so they can support Restriction Manager for entering and maintaining temporary restrictions in their respective Districts.

### Superload V4 Project Schedule

	Start Date	End Date	Completed	Hours	Functionality Included
<b>Initiation &amp; Planning</b>	07/02/18	08/03/18	✓	381.75	Initiating and Planning activities
<b>Sprint 1</b>	08/13/18	08/31/18	✓	130.75	Documenting Planning/Bridges process; Initial missing bridges analysis
<b>Sprint 2</b>	09/03/18	09/21/18	✓	249.5	Auto Permitting; Install/configure Bentley release; Bridge analysis; Initial Bentley training sessions
<b>Sprint 3</b>	09/24/18	10/12/18	✓	243	Border Bridge set up and Restrictions; Routing Analysis;
<b>Sprint 4</b>	10/15/18	11/02/18	✓	352	Continue Route and Bridge analysis and configuration; Bentley release install and testing
<b>Sprint 5</b>	11/05/18	11/23/18	✓	302	Start SuperID analysis for certain Bridges; Road Network and Bridge update process; Set up load balanced test environment

<b>Sprint 6</b>	11/26/18	12/14/18	✓	270	Initial Security Scan of software; SuperID testing; Network/Bridge update process continues
<b>Sprint 7</b>	12/17/18	01/04/19	✓	180.5	Maintenance Manager setup and config on Test; Testing of network/bridge updates and routing
<b>Sprint 8</b>	01/07/19	01/25/19	✓	313.25	Border bridge setup complete; SuperID setup/testing complete; Restriction Manager process underway
<b>Sprint 9</b>	01/28/19	02/15/19	✓	329	Install/test Bentley release with security changes; 2 <sup>nd</sup> security scan; Network and bridge updates; Internal route/bridge testing continues
<b>Sprint 10</b>	02/18/19	03/08/19	✓	252.75	Working sessions with customer; follow up on issues from working sessions; UAT Planning sessions; Continue internal testing
<b>Sprint 11</b>	03/11/19	03/29/19	✓	176.25	Install Bentley release and test; Bentley Training on-site; UAT begins; Follow up on UAT issues and questions; Continue improvement of road/bridge network
<b>Sprint 12</b>	4/01/19	04/19/19	✓	234.5	Complete UAT; Plan implementation to Prod; Final security scan; Integrate with KI and CVIEW
<b>Sprint 13</b>	04/22/19	05/10/19	✓	299.25	Soft go-live begins; Issues with implementation and interfaces; Updates to network/bridges
<b>Sprint 14</b>	05/13/19	06/07/19	✓	291.75	Soft go-live continues; Issue resolution and go-live customer support;
<b>Sprint 15</b>	06/10/19	07/05/19	✓	201.25	Soft go-live continues; Issue with screening web service requires changes; customer support continues; Web service requirements/planning; begin Communications Plan
<b>Sprint 16</b>	07/08/19	08/02/19		300 *	Web service deploy to test and testing; Soft go-live completes; Deploy final changes to prod;
<b>Sprint 17</b>	08/05/19	08/30/19		250 *	Final go-live (8/5) followed by direct support

(\* ) Sprint 16 and 17 are Planned hours in the future. All other hours are Actuals.

### Approved Change Request Summary

Change Request #	Date Approved	Brief Description
001	09/26/18	Additional requirements and new resources added
002	11/26/18	Schedule delay due to new software release and insufficient vendor documentation
003	12/27/18	Additional Bentley software release needed due to bugs found in testing, regulatory changes to Permit Types passed by KY Legislature, and additional road network work required
004	02/12/19	Additional Bentley release needed due to legislative changes related to truck weight limits, also the previous release was delayed from the vendor, pushing back the plan
005	05/07/19	Additional UAT time needed by customer, additional requirements need to be addressed by Bentley in the software, adding a "soft" go-live period with limited carriers/permit services
006	06/13/19	Issues found during soft go-live by permit services require Bentley changes

## **Work Remaining in Project:**

### **Sprint 16 Planned High-Level Tasks**

- Complete, test and deploy screening web service changes on Bentley and KYTC side
- Complete soft go-live with existing permit services and carriers; Continue direct support
- Complete and execute Communications Plan for the public launch

### **Sprint 17 Planned High-Level Tasks**

- Execute public launch for final go-live
- Direct support for public and DMC users
- Bentley on site in week 1 for go-live support
- Project Closeout activities