BI-MART

# WILLAMETTE COUNTRY MUSIC FESTIVAL

## Transportation Impact Analysis

April 6, 2018
(Revised TIA to address Marion County and ODOT Comments)

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Project No. 1117

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# EXECUTIVE SUMMARY

This transportation impact analysis summarizes our traffic impact study/traffic control plan for the Willamette Country Music Festival's planned relocation to the Marion County Ankeny Hill area in August 2019. The four-day event is planned to operate from August 15th to August 18th (campers will leave the morning of the 19th) and will host up to 30,000 total attendees (including staff, vendors, security, support staff, artists, and volunteers). The event will include 3,000 marked camping sites, and includes on-site support facilities and entertainment throughout the day, with main venue gates opening around the noon hour and performances continuing as late as 10:30 p.m. The site will use fields adjacent to the Ankeny Wildlife Refuge that will have been harvested prior to the event setup.

This study is the result of traffic planning and analysis based on coordination with Marion County, the Oregon Department of Transportation (ODOT), area residents, farmers, associated food processors, and business owners in the Festival vicinity. This study also benefits from the knowledge base developed by the Willamette Country Music Festival (WCMF) team that has coordinated similar music festivals over the past 10 years in various locations in Oregon and Idaho. It is the goal of WCMF to avoid or minimize impacts to the farming community, area business owners, the Wildlife Refuge, as well as provide safe and functional ingress and egress to the event.

This report is an update to the February 20, 2018 Transportation Impact Analysis (TIA) in response to feedback from ODOT and Marion County. The more significant additions found in the report relate to the following:

- The Festival primary and contingency ingress routes northbound and southbound on I-5 were updated based on feedback and direction from ODOT and Marion County that was provided after the submittal of the February 20, 2018 TIA.
- Additional clarification is provided on the dates of harvest and farming activity for area crops in relation to the dates of the proposed festival.
- Additional detail is provided to document the total number of festival attendees and support staff within the 30,000 person maximum allowed.
- Additional detail is included on how travel will be accommodated on the adjacent roadway network during the event for local traffic and over-dimensional farm equipment.

Primary issues raised within the site vicinity include potential conflicts with area agricultural uses and increased traffic around the perimeter of the wildlife refuge. Based on outreach efforts the harvesting of most area crops will not be active during the mid-August timeframe, although there is a potential for certain types of grass seed, silage, and vegetables. Accordingly, event routes were developed to minimize use of the surrounding County roads and maintain reasonable I-5 access or ability to use the overcrossings. With 85 percent of the event traffic expected to arrive from I-5, the limited amount of remaining traffic will allow these County roads to operate in their current configurations. The proposed event routing has been revised from prior presentations to address these area concerns, with the proposed routing illustrated in Figures 1 through 3.

There will be traffic control changes required to allow this event route to function adequately while minimizing the potential for queuing onto I-5. This will require changing traffic control at intersections along the routes to maintain free-flowing maneuvers for event traffic. Festival flagging crews will be required at the I-5 interchange ramp terminals and at major intersections surrounding the event to direct passenger vehicles and RV's to their respective parking areas. To further reduce the risk of back-ups onto

the I-5 corridor, contingency routes are identified as a back-up plan should any type of incident or blockage occur along the primary event routes.

In addition, the team has identified changes to the internal parking configuration to reduce conflicts between pedestrians and vehicles, increase internal stacking, and increase in-processing time (particularly for campers). Beyond the physical event changes, published information in printed and website materials will be provided to attendees to highlight the routes, warn travelers of dimensional restrictions, request respectful behavior toward area neighbors and land uses, and establish event rules and local restrictions.

The traffic mitigation strategy has been designed to reduce impacts to local traffic, farming, wildlife refuge, and business operations. These changes will result in higher delays to attendees within the parking areas leaving the event each night of the Festival. However, with this routing plan even during the peak event hours, local traffic on Talbot Road will experience limited delays between Jorgenson Road and I-5, as traffic will be traveling at 15 to 20 mph in this area and local traffic will have the right-of-way to enter the queue. It is recommended that local traffic in the Talbot area utilize Talbot Road as a route to I-5 or locations to the east of I-5 between the hours of 9:00 p.m. and midnight as this route will provide the most expeditious travel option as compared to Wintel Road.

The very limited traffic associated with the Festival set-up and take-down will involve limited crews with direct access to and from I-5 via the Ankeny Hill Road and Talbot Road interchanges. Local traffic, farming and business operations will not be impacted during this time period and there will be no detours or traffic control changes in place.

WCMF staff that will be supporting the event includes on-site security teams, first responders, tow trucks, and flagging crews. These emergency service providers will help provide the appropriate security and emergency medical services within the site. A daily conference call will be conducted with area farmers at 6:00 a.m. each morning to coordinate daily delivery and equipment movement needs and ensure flagging crews are aware. A neighborhood liaison number will also be provided for area farmers experiencing any issues to directly contact event management staff. This information will allow the Festival Command Center to plan for the movement of oversize equipment, revise Festival traffic patterns, and prepare flaggers to assist and control Festival traffic throughout the event.

With the proposed routes and control measures in place the proposed 2019 relocation of the Willamette Country Music Festival to the Ankeny Hill area can be accommodated with minimal impact to area farming operations. Additional details on the analyses performed and specific recommendation measures are provided within this report.

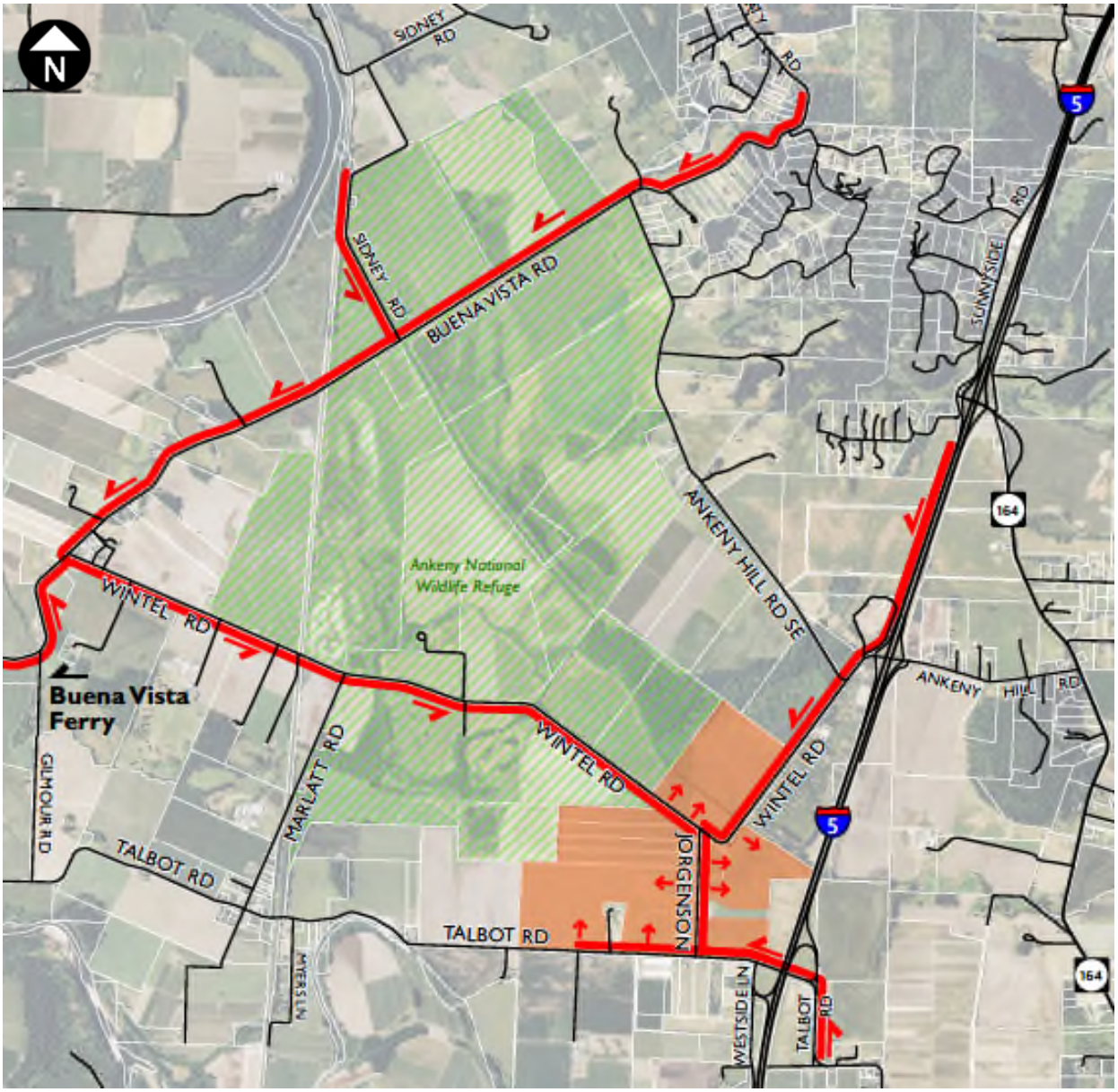



Figure 1. Proposed Primary Ingress Event Routes (Northbound I-5 Route Shown in Figure 2 for Clarity)

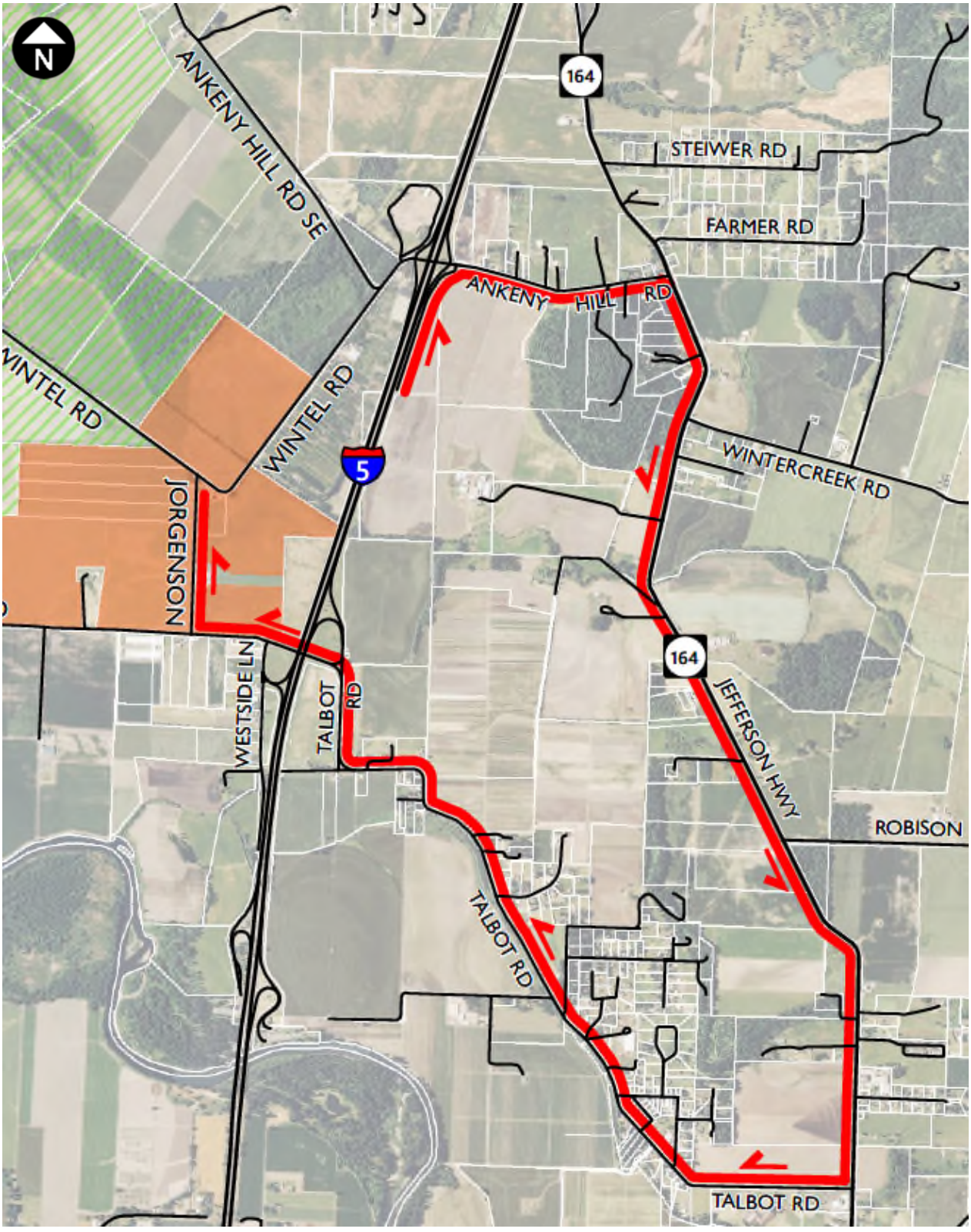



Figure 2. Proposed Primary Ingress Event Route (Northbound I-5)

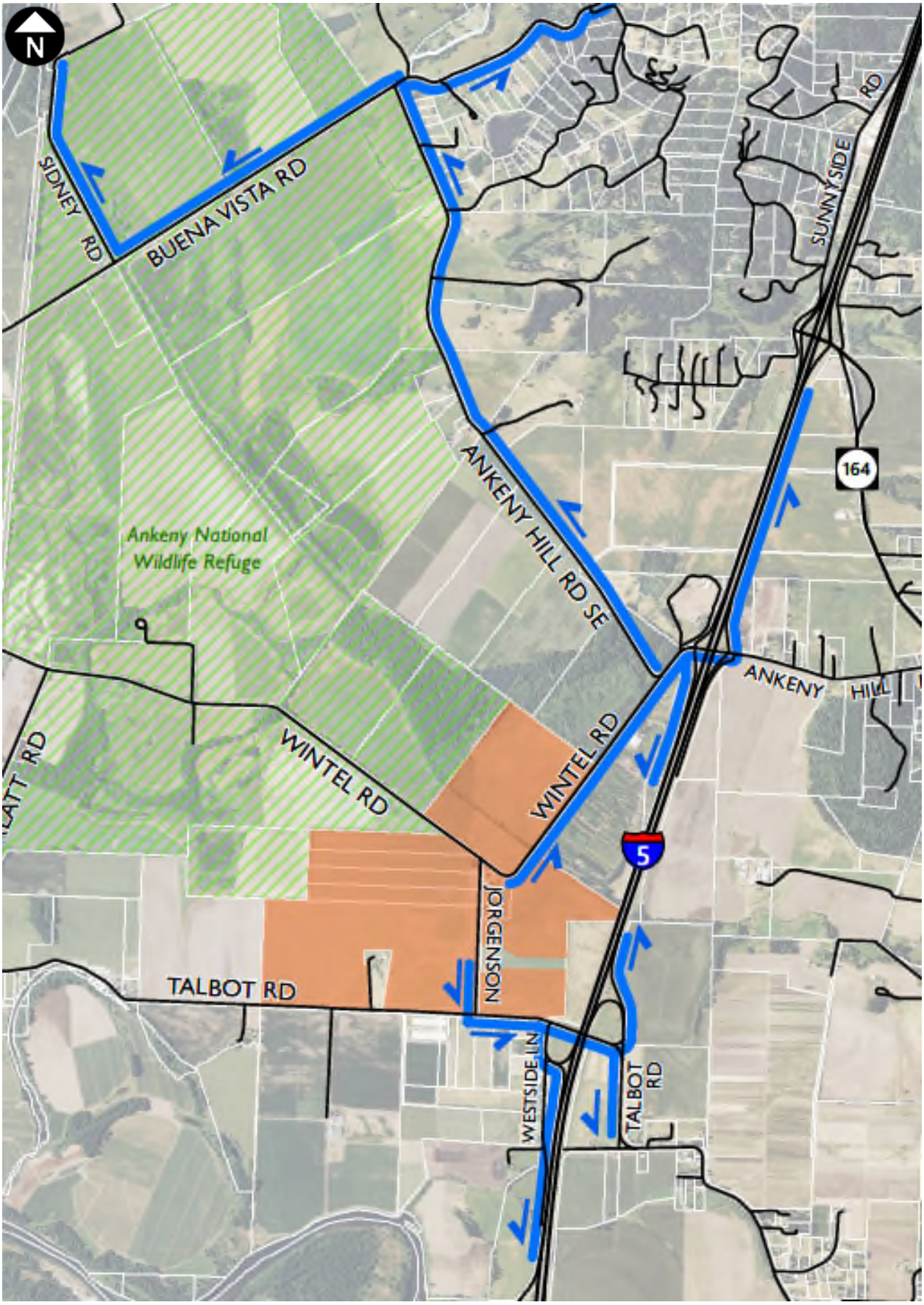



Figure 3. Proposed Egress Event Routes Highlighting the Northern and Southern Egress from the Event.

# PROJECT PURPOSE

The purpose of this Transportation Impact Analysis (TIA) is to identify potential traffic capacity, safety, and operations constraints associated with traffic destined to the proposed 2019 Willamette Country Music Festival (WCMF, the "festival"), which is planned to occur from Thursday, August 15th through Sunday, August 18th, 2019. This TIA provides this analysis and identifies specific recommendations to accommodate the projected traffic demands and routing. The specific location of the proposed festival site (the Site) is illustrated in Figure 4.

Specific items to be addressed in the TIA were provided to the consultant team by Marion County (Regulatory Agency for the proposed festival) Engineering staff and ODOT, Region 2 and District 4 staff. (Refer to *Approval Criteria* section of this report).

Proposed mitigation strategies and plans are incorporated into the TIA and through the Temporary Traffic Control Plan (TTCP) strategies which are identified within this TIA. It is understood that approval of the final 2019 TTCP will be through a series of reviews and meetings with Marion County and ODOT staff, though it is acknowledged that mitigation measures will include temporary revisions to existing road signs, construction of temporary driveways, identification of an emergency route(s), variable message signs on I-5 to the north and south of the Festival, close coordination with ODOT District 4 Incident Response (IR), flaggers, and an on-site traffic control center.

# PROJECT BACKGROUND

The Festival has been held in Brownsville for the past 10 years (2018 will be its 10th year in its current location). The Festival features four consecutive days of concerts that start around 4:00 p.m. on Thursday and continue until 10:00 p.m. Sunday. The Festival is held in a large field with a sound stage and is supported by food and beverage vendors. Travel is accommodated primarily by personal automobile, with adjacent fields designated for event parking and overnight camping.

In addition to Festival attendees, there are also numerous volunteers and staff required to organize and manage the Festival. Performers typically arrive by bus with their equipment and support staff in early morning hours and are set up backstage. An on-site area is designated as the impound lot for towed vehicles. Emergency service vehicles are also staged on-site to respond to emergency or medical issues that may arise during the Festival. Figure 5 illustrates the Festival layout highlighting the scale and support accommodations necessary. This map highlights the range of requirements to support the Festival over the four-day period (not including setup/tear-down), including hygiene facilities, on-site accommodations for emergency services personnel and vendors, and the range of ticket classes.

Preparations for the 2019 Festival include a limited seventeen-person crew that will start preparations at the Site on Sunday, August 4, 2019 to mark out camping locations and erect Festival fencing. The crew will increase to 22 persons on Friday, August 9 to begin construction of the stage at the Site. The crew size will increase to 31 persons on Sunday, August 11 for final preparations leading up to the time that the camping and parking gates open to the public at 10:00 a.m. on Thursday, August 15, which serves as the official start date of the Festival. The Festival will continue through Sunday evening, August 18th. Campers will vacate the Site by 10:00 a.m. on Monday morning, August 19th. A crew of approximately 48 persons will start removal of the stage and Site clean-up on Monday morning, August 19th and continue daily work through Wednesday, August 21st. A smaller crew of 6 to 14 persons will provide final clean-up of the Site on Thursday with final completion on Friday, August 23, 2019.

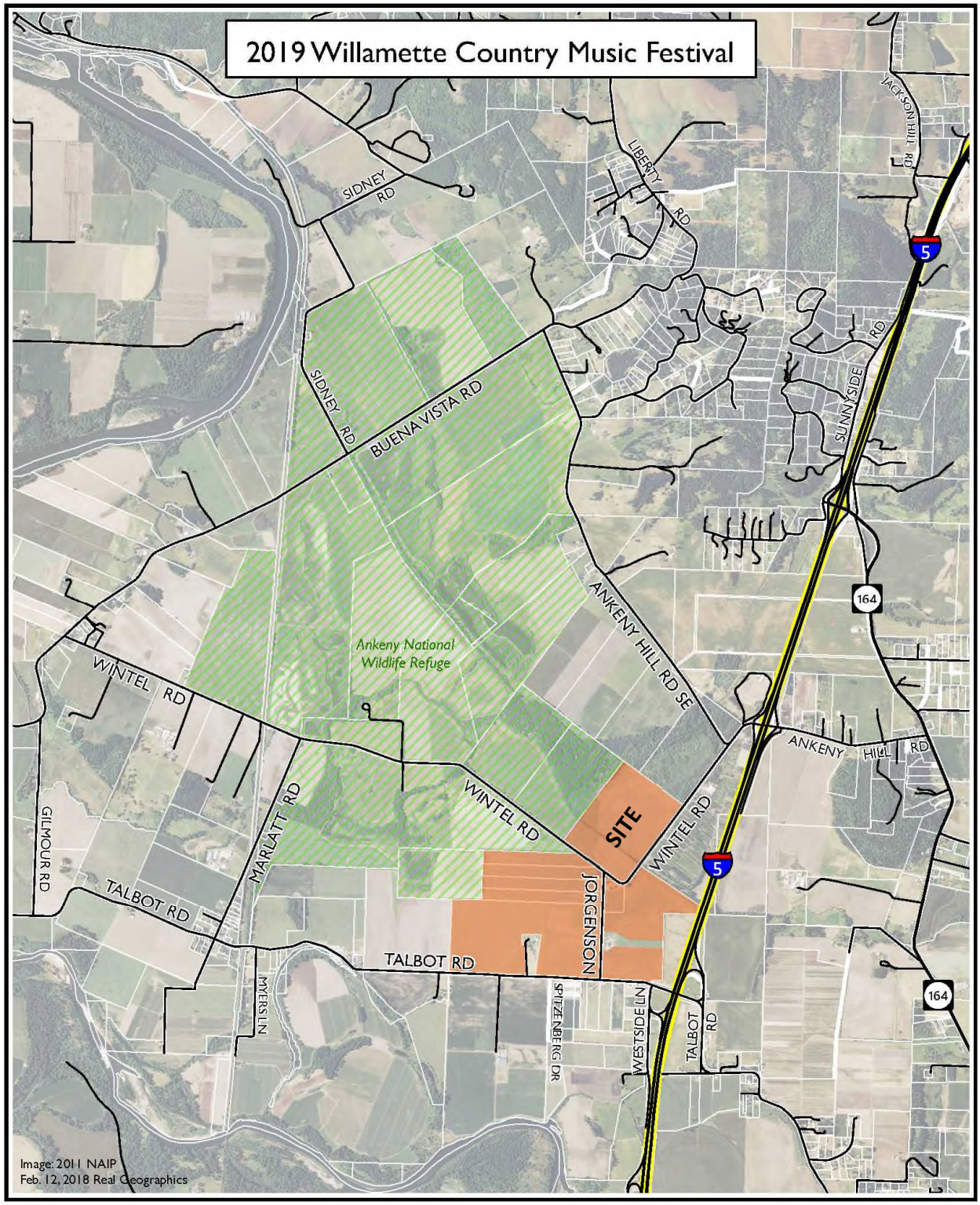



Figure 4. Site Location and Approximate Festival Boundaries

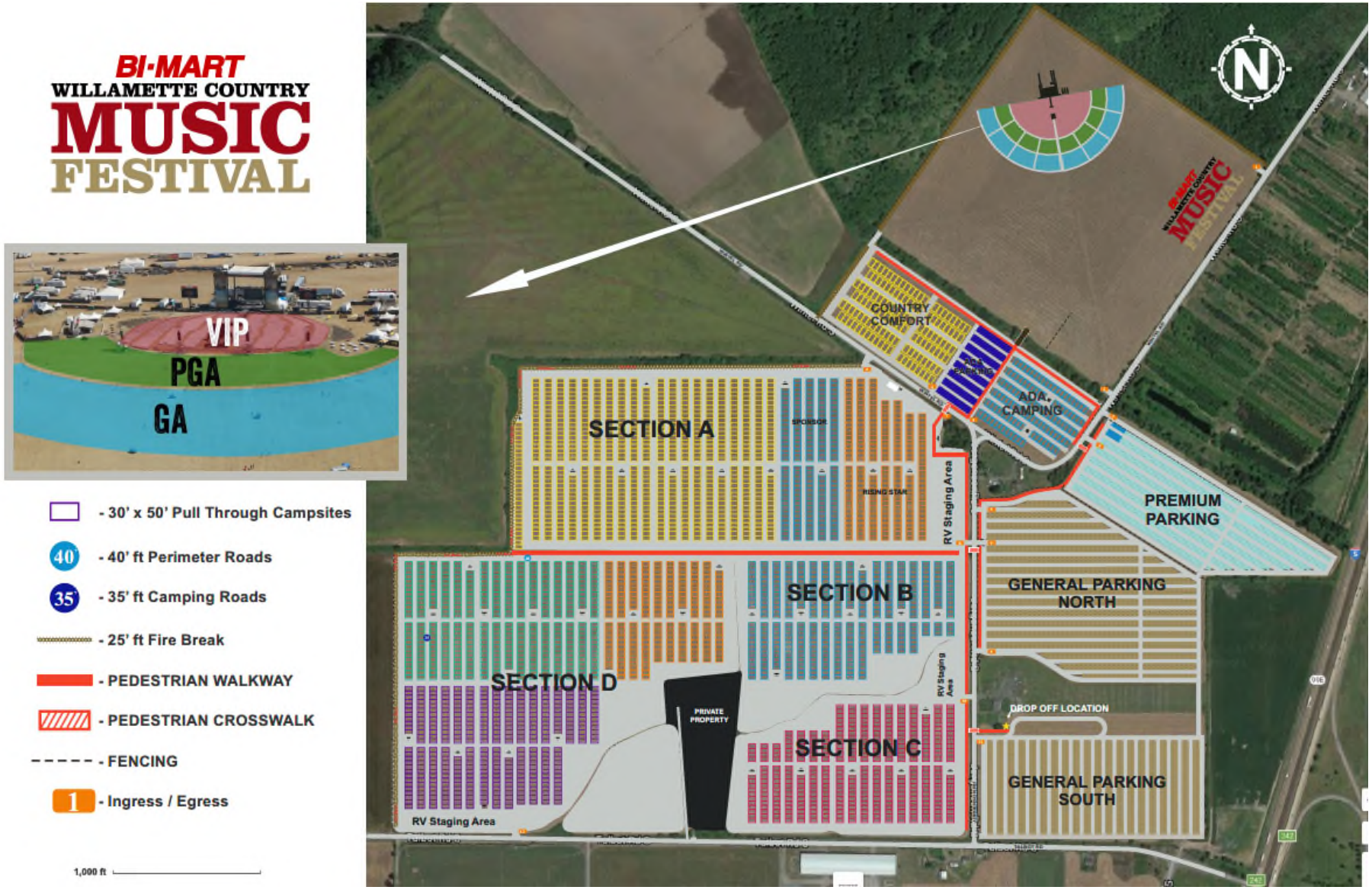



Figure 5. Preliminary Event Layout.

# APPROVAL CRITERIA

This section describes the potential applicable approval criteria for review and concurrence by affected agencies. The purpose is to ensure that all of the potentially applicable criteria relevant to the Festival are addressed within the Outdoor Mass Gathering permit application and, if necessary, any land use application(s). A scoping memorandum outlining these items was provided to Marion County and ODOT staff on January 26, 2018; both Marion County and ODOT confirmed that the approval criteria outlined below addressed agency requirements.

## Marion County Requirements

Marion County requirements were identified within the December 20, 2017 memorandum to the Marion County Hearings Officer, from Marion County Planning Division Planner Brandon Reich regarding Conditional Use 17-043/Gross. In addition to the items identified in the memorandum, Joe Bessman and Del Huntington met with Marion County Engineering staff, Julia Uravich and John Rasmussen, on December 27, 2017, to discuss details of the TIA. On January 4, 2018, a joint meeting to further discuss the scope of the TIA, included Julia Uravich from Marion County, ODOT staff, and Joe Bessman and Del Huntington.

Based on this correspondence and meetings, Marion County staff have identified the following TIA and Temporary Traffic Control Plan elements:

1. Vehicle queuing analysis on county roads during both peak and nonpeak traffic generation times;
2. Coordination with ODOT Region 2 and District 4 on impacts to the state highway system, including I-5 mainline, I-5 interchanges, and OR 99E;
3. Analysis of internal circulation and service operations at accesses providing entrance to parking and camping and a plan for the expedient processing of entering vehicles to minimize dwell times on county roads;
4. Impact to the local residents and businesses with identified mitigations;
5. Railroad crossing impacts and proposed mitigations;
6. Consideration and accommodation of Buena Vista Ferry operations;
7. Emergency services (EVA) provisions;
8. Review of the roads, bridges, and intersections identified for vehicle routing in the traffic plan;
9. Identify other roadway safety considerations to be addressed prior to the event;
10. Pedestrian routing and safety;
11. Traffic incident response and management;
12. Mass evacuation plan; and,
13. Identify management plan to prevent festival campers from using the Wildlife Refuge pullout spaces from overnight camping.

## ODOT Region 2/District 4 Traffic Control/Review

On December 1, 2017, Del Huntington attended an initial meeting with ODOT Region staff, Gerry Juster and Keith Blair. ODOT District 2 and District 4 staff joined the meeting via a conference call. The purpose of the meeting was to initiate a conversation for the WCMF and become aware of the ODOT interests associated with the proposed Festival. On January 4, 2018, a joint meeting to further discuss the scope of the TIA, included ODOT staff, Keith Blair, Casey Knecht and Gerry Juster, Marion County staff and Joe Bessman and Del Huntington. Below are items that were discussed:

- Operational analysis of the I-5 ramp terminals at Ankeny Hill Road and Talbot Road interchanges during both the peak and nonpeak traffic generation times for projected 2019 August traffic volumes for Thursday, Friday, Saturday and Sunday.
- Vehicle queuing analysis on the I-5 ramps during both peak and nonpeak traffic generation times for projected 2019 August traffic volumes for Thursday, Friday, Saturday and Sunday.
- Segment analysis for northbound and southbound portion of I-5 in the vicinity of the Site. Data from the closest Automated Traffic Recorder (ATR) will be used to identify existing Average Annual Daily Traffic Volumes and splits in the daily traffic flow. Traffic volumes will be adjusted to estimated volumes for 2019, and further adjusted to reflect typical August traffic volumes.
- Identification of an Emergency Access Route in the event that congestion or an incident occurs on an I-5 ramp, at a study I-5 ramp terminal or downstream on the County road system that results in a traffic queues onto the I-5 mainline.
- If the Emergency Access Route identifies an additional I-5 interchange, conduct operational analysis of the impacted I-5 ramp terminals and ramps, similar to ODOT items 1) and 2) above.
- Continue coordination with ODOT District 4 staff to ensure that the "Application and Permit to Occupy or Perform Operations upon a State Highway". The purpose of the permit is to allow for the temporary installation of Variable Message Signs along I-5 at locations north and south of the proposed Site.

### ODOT Rail Coordination

In a December 6, 2017 email from David Smith, ODOT Rail and Public Transit Division to Gerry Juster, ODOT, Mr. Smith expressed concerns with the potential of routing Festival traffic across four at-grade railroad crossings within the Site vicinity. Each of the crossings contain passive control with crossbucks and STOP signs, with advance warning signs.

## PUBLIC OUTREACH

The WCMF team initiated an outreach effort to respond to comments, concerns, and issues from the surrounding area. Initial information efforts included outreach to concerned residents, business owners and the farming community in the Talbot-Jefferson area at a "town hall" meeting held at the Jefferson Fire Hall on Friday evening, December 1, 2017. While several residents from the area attended the “town hall” meeting, both Mr. Hilton of Hilton Trenching and Mr. Jensen of Neils Jensen Farms provided the team with specific information related to their business and farming practices. This information, combined with other data and understanding of business and farming operations has been used to develop and refine traffic mitigation strategies for the proposed Festival.

On January 19, 2018, Del Huntington sent nine separate letters to those who expressed concerns with the Festival in an October 26, 2017 letter to Marion County. The purpose of the nine letters was to request an individual meeting with each business/farming operation at their desired location and time to better understand their individual business and/or farming practices, specific fields that they farm, approximate harvest season, days and hours of operation, and the number of employees and equipment used in their operation. Individual letters were not sent to two parties that were included in the October 26, 2017 letter to Marion County as they are represented by legal counsel. The WCMF legal counsel reached out to the opposition legal counsel that represented the other two parties at the December 20, 2017 hearing and again on three separate occasions via email to request a meeting without a positive response.

Three parties from the group elected to meet, which included meetings with Santiam Farms on January 25, 2018, Hilton Trenching on February 1, 2018 and Dejager Dairy Farms on February 12, 2018. These meetings provided specific information related to their business and farming practices. This information proved helpful in developing mitigation strategies to reduce potential traffic impacts to their operations.

It is understood that Santiam Farms operations includes approximately 600 acres near Independence and 600 acres in the Talbot area. Hay and seed are grown and harvested on the north side of Buena Vista Road, south of Sidney Road. Beets, Radish and Spinach fields are in the area generally west of Gilmor Road, on the north and south sides of Talbot Road. During harvest season employees work from early morning until dark or even through the night when harvesting green beans. Product is hauled to processing plants in Stayton, Brooks, Independence and Salem. As Santiam Farms operations occur in the Talbot vicinity and Independence, they use Buena Vista Road, the Buena Vista Ferry and Sidney road to move employees and equipment between the various farming operations.

Mr. Brian Krebs, President of Santiam Farms, emphasized that they own their own equipment, including two combines, tractors and various farming equipment that must be moved from field to field as crops are ready to harvest. Harvesting season begins in July and continues through September for the various crops. Santiam Farms typically use the Buena Vista ferry to move combines from one side of the Santiam River to the other, though there are times that the ferry is shut down due to a dredging operation in the river or low water levels that prevent ferry operations. In this event, combines travel Riverside Drive, Sidney Road and Buena Vista Road. They coordinate with a land owner near the railroad overcrossing on Riverside Drive who allows them to use cross on the property as the combines are too tall to be driven under the railroad structure. If the combines are held up on a crop, it impacts the dates that future crops can be harvested.

For an overview on Talbot Trenching, refer to the *Business Activity* section of this report.

Generally, during this time of year, one milk truck arrives to Dejager Dairy Farms to pick up and transport milk every other day during the morning. In addition, Dejager Dairy Farms grow corn in a field immediately west of the proposed Festival site, and a sorghum field immediately to the west and north of the corn field. The crops are used for silage, with 10-wheelers (dump trucks) hauling product on Wintel Road to the dairy farm every 5 to 6 minutes during harvest. Sorghum is typically harvested in August over two-three days and corn is harvested in September. The Farms also grow clover in the northeast corner of Buena Vista Road and Wintel Road, as well as near the farm located along Wintel Road and Marlatt Road.

Additional emails, phone messages and/or letters were sent to Gilmor Farms, Oregon Dairy Association, Marion County Farm Bureau, Oregon Mint Commission, National Frozen Foods, Universal Seed, Lakeside Ag., and NORPAC requesting meetings to learn more about the farming operations in which they participate.

Representatives from National Frozen Foods in Albany and NORPAC in Stayton agreed to meet and provided insight into their specific food processing requirements. National Frozen Foods has their own crop harvesters and trucks and based on the size of the field to be harvested, is able to send a fleet of machinery to the farmers field and harvest the crop in 12 to 16 hours. (See more on the National Frozen Food process under the section “Green Beans” within the *Area Agricultural Crops* section of this report). NORPAC manages their operations quite differently than National Frozen Foods as NORPAC does not have their own harvesters. Rather, NORPAC coordinates with each farmer individually, and the planting/harvesting time is spread over a much wider window on the growing calendar. The farming operation is required to have its own harvesting equipment (or access to the equipment). Farmers are likely to plant a series of smaller acreages of crops over many weeks, which results in the crop reaching maturity at staggered intervals. This allows the farming operation with limited equipment, the ability to harvest their crops over successive weeks. Several of the farmers in the Talbot/Jefferson area haul their crops to the NORPAC processing plant in Brooks or Stayton.

Phone conversations with representatives of Universal Seed in Independence, and Lakeside Ag., in Albany also provided insight into farming and harvesting practices in the Talbot-Jefferson area.

## AREA AGRICULTURAL ACTIVITIES

Based on testimony submitted to Marion County Planning staff, and in meetings with local farmers and residents, the major crop in the area is Grass Seed. Additional agricultural activities in the area include Straw for export, Custom Straw Baling, Wheat, Rye Grass, Clover, Sorghum, Corn, Hazelnuts, Peppermint, and Vegetables including; Green Beans, Spinach, Radish, Garlic, Sugar Beets, and Blueberries. Other farming activities in the area include Dairy Farming.

Farming operations consist of employees arriving and departing from work each day, moving farm equipment, trucks and personnel to various fields to prepare fields for planting, irrigation, monitoring crop production, pest and weed control, cultivation, harvesting of crops and the transportation of product to market. Farming activities are often dictated by the weather, and at times, require farmers to operate their crews and equipment 24 hours a day, especially during certain harvest times.

Some farmers in the area own and/or farm other areas in the valley such as Independence, east of I-5, east of Jefferson, east of the Santiam River and Albany. These farmers typically move the tractors, combines, mowers and other related farming equipment, trucks and employees to various fields and locations as crops dictate.

### Area Crops

Based on information compiled by the team through public outreach efforts with farmers and local food processors, a description of area crops and their relevance to the August festival are summarized below in Table 1. In addition, a summary of the harvest period for each crop is depicted graphically in Table 2.

**Table 1. Summary of Area Crops**

| Crop | Location | Harvest Period | Farming Activity Mid-August | Mitigation Measures |
|---|---|---|---|---|
| Annual Rye Grass | Large acreages in vicinity of Festival, both east and west of I-5 | End of June | Field maintenance, weed control tilling, though nothing critical in this time period. | No anticipated need for mitigation |
| Tall Fescue | Large acreages in vicinity of Festival, both east and west of I-5 | Early July | Field maintenance, weed control, though nothing critical in this time period. Fescue remains for 5 years. | No anticipated need for mitigation |
| Perennial Rye Grass | Large acreages in vicinity of Festival, both east and west of I-5 | Mid July | Field maintenance, weed control, though nothing critical in this time period. Rye grass remains for 3 -5 years. | No anticipated need for mitigation |
| Custom Straw Baling | All of the grass fields are baled following harvest | Typically completed in from the end of June into early August | Fields empty after baling. | No anticipated need for mitigation |

**(Continued)**

**Table 1. Summary of Area Crops (Continued)**

| Crop | Location | Harvest Period | Farming Activity Mid-August | Mitigation Measures |
|---|---|---|---|---|
| Wheat | Approximately 35 acres near Talbot Interchange and some additional small acreage near the Buena Vista Ferry | Mid-August | Limited to one or two combines on limited acreage. Harvesting operations complete in 1 to 2 days. | Coordination with WCMF if county roads are required to move over dimension machinery |
| Bent Grass | Along Talbot Road, west of Festival venue, and some acreage east of I-5 | Late August | Hold pattern until cutting begins in late August. | No anticipated need for mitigation |
| Clover | Along Jefferson Highway | Typically cut in late August | Hold pattern until cutting begins in late August. | No anticipated need for mitigation |
| Sorghum - Silage | Field west of festival | Mid-August | Choppers and 10-Wheel bin/dump trucks | No over dimension vehicles on the roadway. Truckloads from the site and return able to use roadway with festival traffic |
| Corn - Silage | Field west of festival | September | Normal crop maintenance and irrigation as required. | No anticipated need for mitigation |
| Hazelnuts | Very limited in festival vicinity | September | Normal crop maintenance and irrigation as required. | No anticipated need for mitigation |
| Peppermint | Limited acreage near the festival vicinity. Larger fields east of I-5 and near Jefferson Highway. | Late July – Early August | 10-Wheel trucks use Talbot road to haul product to a distillery east of Jefferson. The trucks are not over dimension. | If harvest is later than normal, it may require coordination with the WCMF Team to accommodate over dimension harvesters moving on the county roads. |
| Green Beans | Approximately 40 - 50 acres along Talbot, west of Festival venue | Varies, depending on when crop is planted in the spring. | National Frozen Foods provide harvesting and hauling equipment.<br>Harvesting a large field typically takes less than 12-14 hours.<br><br>Produce hauled to Albany in semi-trucks along Talbot Road. | If harvesters are moved into the area, coordination with WCMF team to provide roadway for over dimension machinery |

**(Continued)**

**Table 1. Summary of Area Crops (Continued)**

| Crop | Location | Harvest Period | Farming Activity Mid-August | Mitigation Measures |
|---|---|---|---|---|
| Green Beans | Along Talbot Road and Buena Vista Road, in the vicinity of the Buena Vista Ferry | Varies - Smaller acreages planted throughout the spring to allow for harvesting over many weeks in the summer | Santiam Farms may employ harvesting equipment, crews and trucks hauling from acreages to Independence. | Typically, the harvesters are moved between this area and Independence via the Buena Vista ferry. If over dimension machinery is required to travel north on Buena Vista Road, coordinate with WCMF team. |
| Sugar Beets | Approximately 20 – 40 acres along Talbot Road and Buena Vista Road, in the vicinity of the Buena Vista Ferry | September | Normal crop maintenance and irrigation as required. | No anticipated need for mitigation |
| Spinach | Approximately 20 – 40 acres along Talbot Road and Buena Vista Road, in the vicinity of the Buena Vista Ferry | The end of July into the first week of August | If the harvest is late, there may be a need to move combines on the county road. Additional equipment is a belly dump truck load each day. | If combines are moved on the county roads, coordination with the WCMF Team |
| Radish | Approximately 20 to 40 acres along Talbot Road and Buena Vista Road, in the vicinity of the Buena Vista Ferry | The end of August into early September | Normal crop maintenance and irrigation as required. | No anticipated need for mitigation |
| Garlic | Along Talbot Road west of the Festival Venue and along Jefferson Highway | The end of August | Normal crop maintenance and irrigation as required. | No anticipated need for mitigation. If crop is early, over dimension harvester may need to be moved. Coordination with the WCMF Team |
| Blueberries | South of Talbot Road and east of I-5 | Early July to the end of August | Harvesters are hauled on highway trucks. It is most typical for farm staff to pick the crop. Semi-trucks haul product from the farms. | Coordination with the WCMF Team if over dimension machinery is to be moved on the county roads. |

**Table 2. Summary of Harvest Period for Area Crops**

| Crop | June | July | August | September |
|---|---|---|---|---|
| Annual Rye Grass | | | | |
| Tall Fescue | | | | |
| Perennial Rye Grass | | | | |
| Custom Straw Baling | | | | |
| Wheat | | | | |
| Bent Grass | | | | |
| Clover | | | | |
| Sorghum - Silage | | | | |
| Corn - Silage | | | | |
| Hazelnuts | | | | |
| Peppermint | | | | |
| Green Beans | **Harvest Period Varies Depending on Plant Dates** | | | |
| Sugar Beets | | | | |
| Spinach | | | | |
| Radish | | | | |
| Garlic | | | | |
| Blueberries | | | | |

*Note: Red line illustrates WCMF Event Period (Thursday August 15 to Monday morning, August 19, 2019)*

## Grass Seed

The Festival, camping, and associated vehicle parking will be held on approximately 440 acres of land farmed for Grass Seed, the major crop in this area. Harvesting of Grass Seed is typically completed by the end of July each year. Therefore, the mid-August 2019 Festival and associated traffic will not interfere with the grass seed harvest and tractors/trucks and combines that harvest the grass seed.

Several types of grass seed are grown in the Festival vicinity, with the first crop, Annual Rye Grass, usually harvested near the end of June. The second crop is Tall Fescue, harvested in the first part of July, immediately after the Annual Rye Grass, then Perennial Rye Grass, harvested in mid-July. The grass is windrowed (cut) and laid in rows to dry for 7 to 10 days, then a fleet of combines transfer the seed to trucks to haul the product away. Rakes then move the remaining grass into rows for the balers to bale and place in stack wagons for semi-trucks to haul off of the fields. The entire process from the time the first

crop is cut until the crop is baled and hauled away lasts from the end of June until the first week of August. Rain may occasionally result in the process extending into the second week of August.

### Custom Straw Baling

It is understood that there is a limited amount of custom straw and custom straw baling in this area, with the majority of the activity located to the west of Talbot and Buena Vista Road. Straw is typically cut in a similar manner as described above and completed by early August.

### Wheat

It is understood that there is a very limited number of acres of wheat farming in this area as the price of wheat has fallen in recent years. Combining of wheat requires the farmer to changing over the combine, so it is limited activity to one or two combines rather than a large fleet. The harvest is typically in mid-August.

### Bent Grass

It is understood that there is a limited amount of Bent Grass farming in this area. The harvesting and baling of Bent Grass is like the other grass seed farming the area, though Bent Grass is usually harvested near the end of August. It is then windrowed and baled and hauled away with semi-trucks.

### Clover

It is understood that there is a limited amount of clover farming in this area, with most of the activity located near Marlatt Road and Wintel Road. Clover is grown for seed and silage. Clover is typically cut in late August and lays on the field for a week, then combined and windrowed and hauled by truck. It takes approximately three days to harvest the clover and commences around 11:00 a.m. each morning (after the dew has dried) and ends before dark. Once the clover is cut, it is critical that the clover is harvested before any rainfall.

### Sorghum

There is a limited amount of Sorghum farming in this area which is used for silage, with most of the activity located just to the north and west of the proposed Festival. Typically, there is a two- to three-day window in mid-August when sorghum is ready for harvest. Sorghum is cut one day then harvested the next with a self-propelled chopper. The chopper transfers the product into waiting 10-wheel dump trucks. The trucks then access onto Wintel Road and haul the product west on Wintel Road to the Dejager Dairy Farm. It is typical to have a truck entering Wintel Road from the field every 5-6 minutes, approximately 12 loads per hour, to and from the site. The harvest is a daytime operation and it takes two- to three-days to complete the harvest.

The chopper used in the harvesting is 10 feet wide and when traveling on the county road, requires on-coming motorists to slow as both vehicles need to shift towards the shoulder as they meet and pass each other to increase clearance.

### Corn

There is a corn field immediately adjacent to the proposed Festival site on the north side of Wintel Road. The corn is grown for silage and hauled to the Dejager Dairy Farm on Wintel Road, and operations are like the harvesting of sorghum though the process is faster. Corn is not cut down one day before harvesting

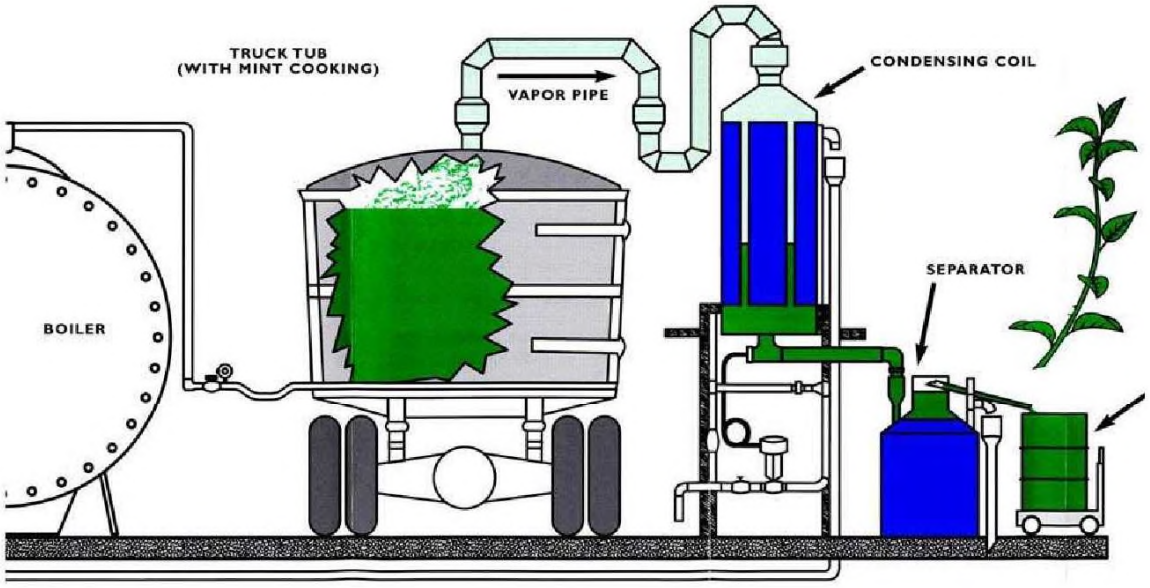
commences, rather, the chopper picks and chops the corn and transfers the product into a truck. The harvesting goes quickly, therefore there are more trucks on the road than with Sorghum. Harvesting of corn typically occurs within a two- to three-day window in September though it can be ready for harvest earlier, depending on the weather.

### Hazelnuts

It is understood that there is a limited amount of Hazelnut farming in this area, with the majority of the activity located near Independence. Hazelnuts are often harvested in September when the fruit falls to the ground. Mature trees do not typically require a great amount of maintenance during the summer months, though a newly planted orchard may require frequent irrigation during the hot summer months.

### Peppermint

Based on a review of the Oregon Mint Association web site and discussions with knowledgeable farmers in the Jefferson – Talbot area, it is understood that there is a limited amount of mint farming area near the Festival on the west side of I-5, with larger mint fields on the east side of I-5. Mint is often cut with tractors/mowers in July and lays on the field for 3 to 5 days to dry. Once dried, harvesters pick up the mint, and transfer the product into 10-wheeler trucks to be hauled on Talbot Road, to a distillery east of Jefferson. The mint harvesting season is typically from late July and early August. Figure 6 from the Oregon Mint Commission provides details on the harvesting of local mint.




Mint oil is housed in the glands of mint leaves. In distilleries, mint oil is captured in steam generated by boilers, and carried to condensers, which convert the steam into a mixture of water and oil.

The liquid mixture passes through a separator, which removes the water from the oil. The refined mint oil is then stored in clean, 55-gallon galvanized drums, each of which holds approximately 400 gallons of oil, the yield from about five-and-a-half acres of mint plants.

A mint plant reaches its peak output of oil when it is in full bloom. Beginning in July each summer, growers cut mint plants with a windrower and allow plants to dry in rows for three to five days.

This curing process allows much of the excess moisture in the plant to evaporate.

When the crops is adequately cured, growers harvest the windrowed leaves with a chopper, and blow leaves into large tubs carried behind the chopper on an accompanying trailer.

When full, the tubs are taken directly from the field to a distillery.

Figure 6. Mint Harvesting Information from *Oregon Mint Commission*

## Green Beans

Based on a meeting with National Frozen Foods General Manager and Field Shop Manager in Albany, it is understood that:

- National operates 24 hours a day during the harvest season, July through the end of October and their trucks haul to the processing plant around the clock during these months.
- In the Jefferson area, they harvest green beans and corn. There are several fields on the east side of Jefferson and fields near Talbot.
- Much of the truck traffic is on the Interstate or the quickest route available from the field to the processing plant.
- The harvesters travel on county roads and state highways. They are not allowed on the Interstate.

- During the harvest season green beans and corn are hauled from throughout the Willamette Valley to Albany. They utilize extended length dump trucks and tractors with 53-foot trailers to haul the produce. It is unknown how many acres of green beans are (or will be planted) within the Jefferson/Talbot area.
- They own and operate 13 green bean pickers/harvesters. The harvesters are 14 feet wide, with a top speed of 25 mph. At a minimum, they travel in pairs or may include any additional harvesters and at times, may have all 13 machines in a row. They employ a pilot vehicle before and after when they operate on public roads. As travel lanes are often 11- to 12-feet wide, they encroach into the adjacent travel lane, especially if the roadway lacks shoulders. It is unknown how many of the harvesters will be within the Jefferson/Talbot area during the festival period.
- When the field is ready for harvesting, National has a 3- to 5-day window to harvest the crop and haul to Albany. The timeline is determined by the weather; i.e., if the temperature is in the 90's or over 100 degrees, they only have three days to harvest the crop.
- Fields are often picked in 12 to 16 hours of non-stop labor.
- The pickers/harvesters pick the crop, which is transferred to a bin on the back of the machine, then transferred/dumped into a truck. At a minimum, they fill a truck every hour, though based on the size of the field and number of harvesters, they may fill 2.5 trucks each hour.
- As soon as the field is harvested, they move the harvesters to the next field that is ready for harvesting.
- They own and operate 3 corn pickers/harvesters. The machines are 16' wide, with a top speed of 25 mph. They employ a pilot vehicle before and after when they operate on public roads. As travel lanes are often 11 feet to 12 feet wide, they encroach into the adjacent travel lane, especially if the roadway lacks shoulders.
- Common travel routes for the harvesters used in the Talbot- Jefferson vicinity include Talbot Road, both east and west of I-5, Buena Vista Road, south to the ferry and north to Liberty Road.
- National coordinates with their growers to determine an approximate planting and harvesting times based on the growing season in a particular area, growing time, and soils.

### Sugar Beets

Based on a meeting with Mr. Krebs, President of Santiam Farms, and in a conversation with representatives from Lakeside Ag., in Albany, it is understood that:

- Sugar beets are grown for seed, with the harvest often occurring in September. The window to harvest sugar beets is typically 3-5 days, though weather often dictates when the crop is to be harvested.
- The sugar beets are cut with a swatter, and the crop lays on the field for approximately a week to dry.
- Once the crop is dry, combines pick up the crop and transfer the product into trucks and hauled to the food processor in Independence.
- Harvesting is usually conducted during daylight hours, or until approximately 9 p.m. and may occur over 2-3 days or a week, depending on the amount of acreage planted with sugar beets.

### Spinach

Based on a conversation with Universal Seeds representatives in Independence, it is understood that:

- Spinach is grown for seed, generally west of Talbot, along Talbot Road and Buena Vista Road.
- Farmers use their own equipment, and typically swath, then allow the crop to lay on the field for a week prior to harvesting.
- Harvest of spinach seed is a daytime operation, usually the end of July into the first week of August.
- A combine is used to pick up the seed and transfer to a truck to haul the product.
- They typically harvest one belly-dump truck each day, which represents approximately 20 acres of spinach. The trucks haul directly to I-5, then to Independence, via Albany or Salem.
- The total number of days to harvest depends on the total number of acres planted in spinach (one day for every 20 acres)
- Once harvesting is complete, the field is usually left until it rains. The farmer will likely disc the field to chop unwanted weeds of the remainder of the crop.

### Radish

Based on a conversation with Universal Seeds representatives in Independence, it is understood that:

- Radish is grown for seed, generally west of Talbot, along Talbot Road and Buena Vista Road.
- Farmers use their own equipment, and typically swath, then allow the crop to lay on the field for a week prior to harvesting.
- Harvest of radish seed is a daytime operation, usually the last week of August into the first week of September.
- A combine is used to pick up the seed and transfer to a truck to haul the product.
- They typically harvest one belly-dump truck each day, which represents approximately 40 acres of radish. The trucks haul directly to I-5, then to Independence, via Albany or Salem.
- The total number of days to harvest depends on the total number of acres planted in radish (one day for every 40 acres)
- Once harvesting is complete, the field is usually left until it rains. The farmer will likely disc the field to chop unwanted weeds or the remainder of the crop.

## BUSINESS ACTIVITY

The project team was made aware of three existing business activities in the area that include Agricultural Product Storage, Farm Trenching and Drainage, and a Nursery.

Based on input from Mr. Hilton of Hilton Trenching and testimony submitted to Marion County Planning staff, it is understood that business activities include the arrival and departure of 5 to 6 employees each work day, hauling of equipment and product to and from business locations, and serving customers that arrive at the business locations. While Hilton Trenching employs a very large machine for trenching and installing drain piping in fields throughout the valley, this piece of oversized machinery is moved out in the spring and returned to the place of business on Talbot Road in the fall. Other machinery and equipment that is moved daily for Hilton Trenching and the other area businesses are typical tractor/trailers and not likely over-length or over-width, thus able to travel within the given travel lane.

## BIKEWAYS

There is a considerable amount of cycling that occurs on the county roads during the summer months in the vicinity of the proposed Festival. As the roads do not have paved shoulders, cyclists ride on the travel lanes and share the roadway with other vehicle modes. A review of the Marion County data for cyclists crossing the Santiam River on the Buena Vista ferry during the month of August 2017 identified the following;

- Thursdays: ridership varied from one to 8 cyclists over the course of the entire day
- Fridays: ridership varied from 6 to 10 cyclists over the course of the entire day
- Saturdays: ridership during the month experienced 382 cyclists on August 5, with 330 cyclists using the ferry between 9:00 a.m. and 2:00 p.m. (likely part of a cycling event), 18 cyclists on August 12, 34 cyclists on August 19, and 29 cyclists on August 26.
- Sundays: ridership during the month experienced 27 cyclists on August 6, 37 cyclists on August 13, 147 cyclists on August 20, with 134 cyclists using the ferry between 9:00 a.m. and 5:00 p.m., and 93 cyclists on August 27, with 84 cyclists using the ferry between 9:00 a.m. and 2:00 p.m.

Several of the roads in the vicinity of the proposed Festival are also part of the Oregon Scenic Bikeways. The Oregon State Parks has developed a series of Oregon Scenic Bikeways across the state that include state highways, county roads, city streets and bike paths. One of the routes is the Willamette Scenic Bikeway, which is a 135-mile designated bike route that connects Champoeg State Park south of Wilsonville to Armitage County Park near Eugene. The Salem to Albany portion of the route includes River Road to Riverside Drive, Sidney Road, then south on Buena Vista Road, south to Talbot Road, then east on Talbot Road and across I-5 to Jefferson Highway. *See Figure 7 for the Oregon Willamette Scenic Bikeway route.*

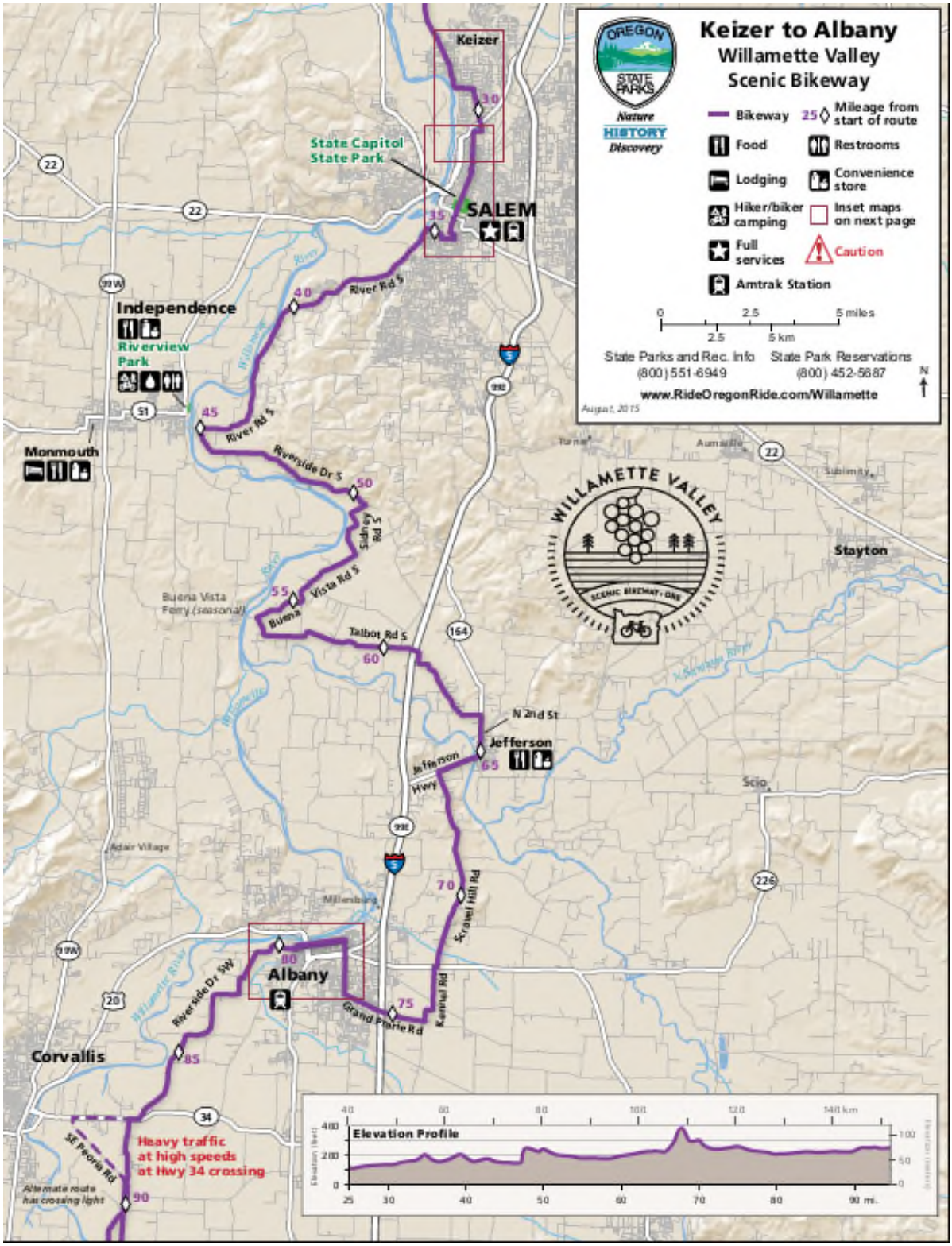



Figure 7. Oregon Willamette Scenic Bikeway Route.

## WILDLIFE REFUGE AREAS

The Ankeny Wildlife Refuge is a resource under the management of the United States Department of the Interior, U.S. Fish and Wildlife Service, and part of the Willamette Valley National Wildlife Refuge Complex.

The Ankeny Wildlife Refuge area was previously known as "Ankeny Bottoms" and was selected as a refuge site to provide overwintering habitat for the dusky Canada goose and many other species of migratory waterfowl. Multiple amphibians, black tailed deer, and some elk also utilize this sanctuary.

Concerns expressed within the public comments include additional stress due to increased vehicles on the perimeter of the refuge, additional conflicts with wildlife, and headlight impacts into the refuge. In addition, concerns were raised by the County of the propensity for festival users to park within the pull-outs to avoid typical fees for overnight camping. Figures 8 and 9 illustrate existing pull-outs and signage.

In a phone conversation with Mr. Graham Evans-Peters, Refuge Manager on February 6, 2019, it is understood that a U.S. Fish and Wildlife Service Law Enforcement Officer monitors the refuge to ensure that refuge rules are followed and that no one parks in the refuge pull-outs between dusk and dawn each night. Mr. Evans-Peters stated that additional law enforcement officers may be required to provide surveillance and monitor the area during the proposed 2019 Festival.

Figure 8. Typical wildlife refuge pull-out and viewing area.

Figure 9. Existing posted parking restrictions.

# EXISTING TRANSPORTATION INFRASTRUCTURE

This section of the report describes the existing transportation infrastructure surrounding the proposed festival site. The purpose of this section is to understand current opportunities and constraints within the study area.

## TRANSPORTATION SYSTEM OVERVIEW

The surrounding area is bordered to the south and west by the Willamette River, to the east by the access-controlled I-5 corridor, and to the north by the Ankeny National Wildlife Refuge. There are limited access options into and within the surrounding area, which is largely defined by large-lot agricultural parcels. Outside of the interstate system the roads are all under the jurisdiction of Marion County. Most of these low-volume rural roads experience a summer daily traffic volume of 400 to 800 vehicles, and also cater to cyclists as part of a designated Oregon Scenic Bikeway. A few roads such as Ankeny Hill Road carry summer volumes over 1,000 vehicles per day. The roads are generally narrow two-lane facilities with no paved shoulders and a 45 to 55 mph rural travel speed.

Other significant transportation infrastructure includes the Portland and Western Railroad that traverses the area along a north-south alignment and the Buena Vista Ferry that provides the area's only Willamette River crossing toward the west, serving local residents and reducing the travel distance for agricultural equipment. Figure 10 depicts the area roadways in the project vicinity in addition to the Buena Vista Ferry and railroad crossings.

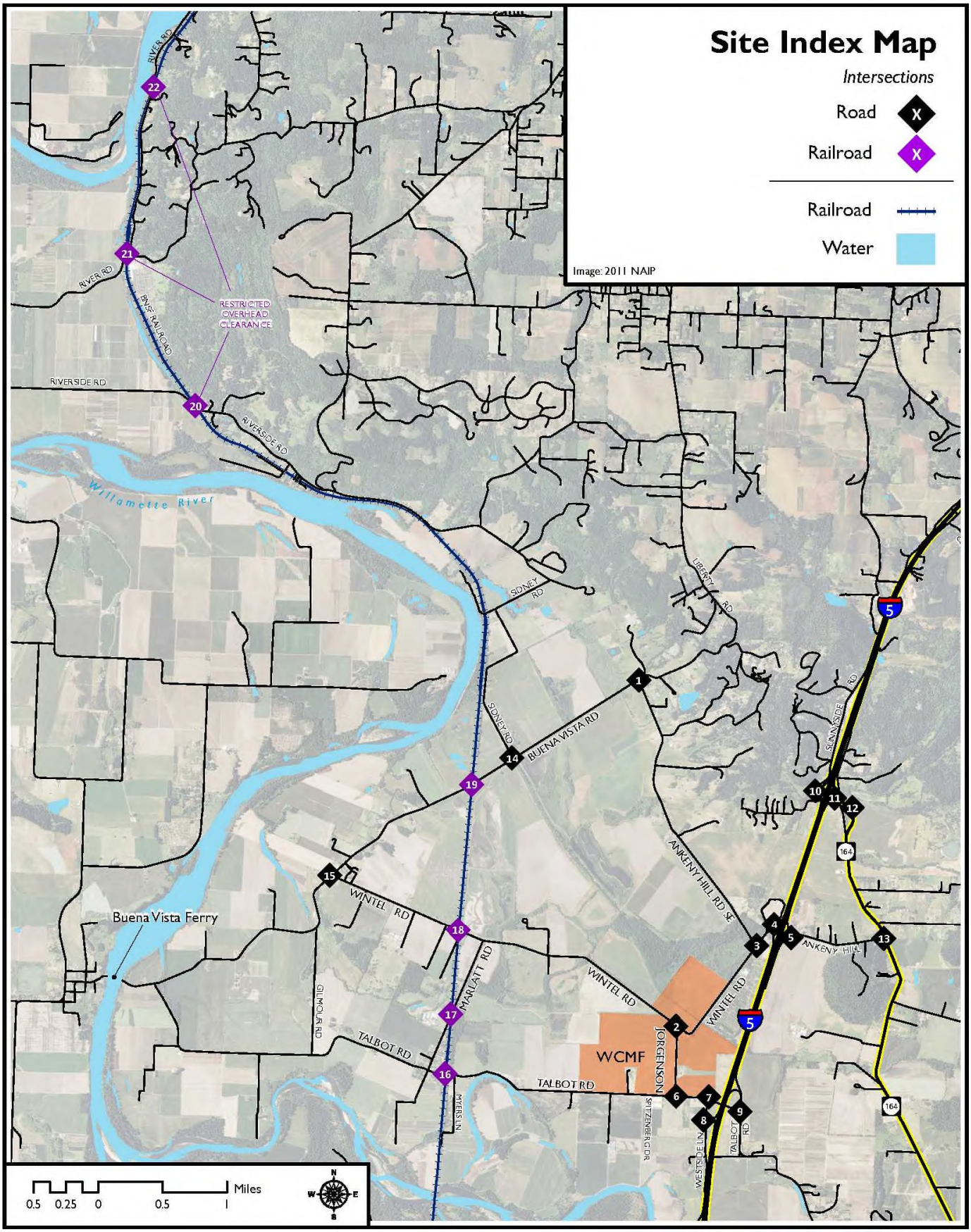



Figure 10. Site Index Map

## Public County Roads

There are several public Marion County roads that traverse the study area. Major area roadways and their characteristics are summarized below in Table 3.

**Table 3. Marion County Roads**

| Roadway | Functional Classification | Cross Section[1] | | Roadway Constraints |
|---|---|---|---|---|
| | | Travel Lanes | Shoulder | |
| Ankeny Hill Rd | Minor Collector | 20’ | 2’ both sides[2] | |
| Talbot Rd | Major Collector | 18-21’ | 1 to 4’ both sides[3] | |
| Wintel Rd | Local | 19-20’ | 3’ both sides[2] | |
| Jorgenson Rd | Local | 20’ | 2’ both sides[2] | |
| Buena Vista Rd | Major/Minor Collector[4] | 19-20’ | 1 to 3’ both sides[2] | |
| Marlatt Rd | Local | 20’ | 4’ both sides[2] | |
| Liberty Rd | Minor Collector | 18’ | 2 to 3’ both sides[2] | |
| Sidney Rd | Minor Collector | 20’ | 1' to 5’ both sides[2] | |
| Riverside Dr | Minor Collector | 19’ | 1’ both sides[2] | Vehicle height restriction of 10’11” at railroad overpass |
| River Rd | Arterial | 28’ | 3’ both sides[5] | Vehicle height restriction of 12’3” and 12’9” at two railroad overpasses |

*[1] Information from the Marion County Rural Transportation System Plan*
*[2]Gravel shoulder*
*[3]Gravel shoulder from Buena Vista Rd to I-5 overcrossing. Asphalt shoulder from I-5 overcrossing to Jefferson Hwy.*
*[4] Minor Collector from Liberty Rd to Talbot Rd. Major Collector from Talbot Rd to Buena Vista Ferry.*
*[5]Asphalt shoulder*

There are numerous constraints that were identified along these area roadways based on both horizontal and vertical clearance. These dimensional constraints will be critical as the proposed festival caters to both day-use and campers, so the recommended access routes should be clearly marked to prevent vehicles from being forced to make U-turns due to dimensional constraints. Photos of area constraints are provided in Figures 11 to 17 and correspond to the numbered crossings in Figure 10.


Figure 11. Southbound View on Riverside Drive (See 20 in Figure 10)


Figure 12. Railroad Overcrossing Structure on Riverside Drive – Southbound View (See 20 in Figure 10)


Figure 13. Eastbound View on River Rd


Figure 14. Northeastbound View on River Rd in Advance of Railroad Overcrossing (See 21 in Figure 10)


Figure 15. Railroad Overcrossing Structure on River Rd - Northeastbound View (See 21 in Figure 10)


Figure 16. Northeastbound View on River Rd in Advance of Railroad Overcrossing (See 22 on Figure 10)


Figure 17. Railroad Overcrossing Structure on River Rd - Northeastbound View (See 22 on Figure 10)

## State Highways

There are two primary State highways within the event vicinity. This includes the Interstate 5 corridor and Jefferson Highway through Jefferson. Both of these facilities are within the jurisdiction of ODOT and require coordination for the placement of any type of temporary traffic control devices. Table 4 summarizes the characteristics of these facilities.

**Table 4. Oregon Department of Transportation Facilities**

| Roadway | Functional Classification | Cross Section | Posted Speed |
|---|---|---|---|
| Interstate 5 (I-5) | Interstate | 4 lanes | 65 mph |
| Jefferson Highway #164 | District Highway (OHP)/ Rural Minor Arterial (NHS) | 2 lanes | 55 mph (in rural areas) |

## Buena Vista Ferry

Figure 18. Buena Vista Ferry

The Buena Vista Ferry provides the only crossing of the Willamette River within the study area. Based on data from August 2017, the Ferry carries an average of 140 vehicles per day in the peak summer months, including approximately 12 vehicles per hour. The Buena Vista ferry operates when the river level reaches 15 feet and provides ferry service seven days a week between 7:00 a.m. and 7:00 p.m. throughout the year (and will not be available for attendees leaving the event in the evenings). The ferry is capable of carrying vehicles up to 60 feet long and weighing up to 40 tons, with costs varying based on the vehicle length and weight. Pedestrians can use the ferry for free, and cyclists are charged a nominal $1.00 fee. Typical passenger vehicles cost $3.00, ranging up to $18.00 for vehicles that utilize the entire ferry.

A round trip takes 10 to 12 minutes on average, resulting in a maximum capacity of 60 vehicles each direction per hour. This number is reduced if there are large vehicles, such as trucks or tractors using the ferry during this time. A photo of the Buena Vista Ferry is shown in Figure 18 and the location of the crossing is identified in Figure 10.

## Portland and Western Railroad

The Portland and Western Railroad (PNWR) bisects the study area with a north-south alignment. There are four at-grade railroad crossings of the PNWR rail line in the site vicinity located approximately two miles west of the site.

There are four at-grade railroad crossings of the Portland and Western (PNWR) rail line in the project vicinity, approximately 2 miles to the west of the proposed venue. These crossings are:

- Buena Vista Rd S (USDOT 067081P / Oregon Crossing No. 3E-85.7)
- Wintel Road (067083D / 3E-86.8)
- Marlatt Road (067084K / 3E-87.5)
- Talbot Road (067085S / 3E-87.9)

These crossings are pictured below in Figures 19 to 35.

It is anticipated that all traffic associated with the set-up prior to the Festival and take-down following the Festival will arrive and depart the Site via the most direct connection (I-5) and will not require crossing the PNWR. Accordingly, implementation of any identified traffic control measures at the crossings will be initiated with the start of the Festival. We will continue our coordination with ODOT Rail Division.

In a conversation with PNWR staff on February 5, 2018, the railroad company declined to provide schedules or information on the rail lines due to federal regulations. However, based on field observations and in conversations with nearby residents, there are typically three trains each day that haul freight, with the schedule and frequency based on demand.

A 24-car freight train was observed at one of the PNWR crossing on February 12, 2018, traveling at approximately 25 mph. The train was comprised of two engines, with two empty boxcars and 22 empty flat cars. The condition of the track/rail suggests that trains are required to travel at slow speeds.

Figure 19. Example of A Typical Freight Train at a PNWR Crossing

The proposed travel routes to the Festival for motorists arriving from Independence (via Sidney Road) and Salem (via Liberty Road) will result in southbound motorists crossing PNWR No. 3E-85.7, and eastbound on Wintel Road at PNWR No. 3E-86.8 during daylight hours. Attendees leaving the Festival for Salem and

Independence will be routed onto Ankeny Hill Road to Liberty Road and Sidney Road and therefore will not cross either PNWR at-grade R/R crossing.

As PNWR have declined to provide a train schedule for each day of the Festival, out of an abundance of caution it is proposed that supplemental red or orange flags be added to the existing STOP signs on Buena Vista Road and Wintel Road to make motorists more aware of the at-grade railroad crossings. No traffic to or from the Festival will be routed to the PNWR at-grade crossings on Talbot Road or Marlatt Road to avoid routing event attendees over the most skewed railroad crossings.

Figure 20. Buena Vista Rd S at USDOT 067081P/Oregon Crossing No. 3E-85.7 (See 19 in Figure 10)


Figure 21. SB on Buena Vista Approaching Crossing 3E-85.7 (See 19 in Figure 10)

Figure 22. SB on Buena Vista Crossing 3E-85.7 Looking left (See 19 in Figure 10)

Figure 23. SB on Buena Vista Crossing 3E-85.7 Looking right (See 19 in Figure 10)

Figure 24. Wintel Road at 067083D / 3E-86.8 (See 18 in Figure 10)


Figure 25. EB on Wintel Road Approaching Crossing 3E-86.8 (See 18 in Figure 10)

Figure 26. EB on Wintel Road Crossing 3E-86.8 Looking left (See 18 in Figure 10)


Figure 27. EB on Wintel Road Crossing 3E-86.8 Looking right (See 18 in Figure 10)

Figure 28. Marlatt Road at USDOT 067084K /Oregon Crossing No. 3E-87.5 (See 17 in Figure 10)


Figure 29. NB on Marlatt Road Approaching Crossing 3E-87.5 (See 17 in Figure 10)

Figure 30. NB on Marlatt Road Crossing 3E-87.5 Looking left (See 17 in Figure 10)

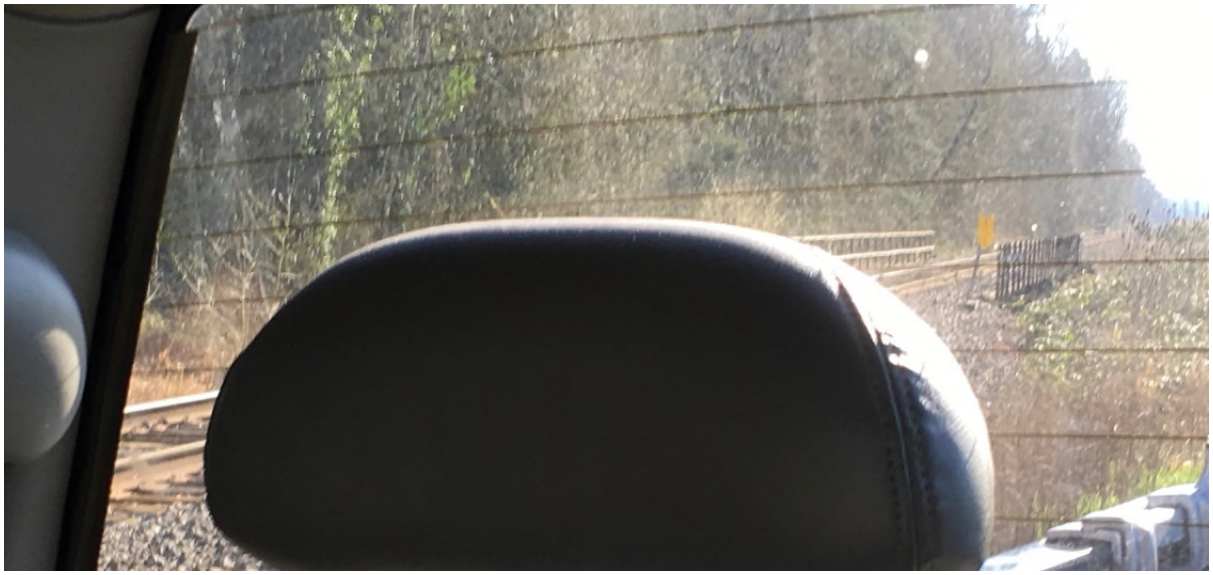


Figure 31. NB on Marlatt Road Crossing 3E-87.5 Looking right through the rear window of the vehicle (See 17 in Figure 10)

Figure 32. Talbot Road at USDOT 067085S /Oregon Crossing No. 3E-87.9 (See 16 in Figure 10)


Figure 33. WB on Talbot Road Approaching Crossing 3E-87.9 (See 16 in Figure 10)

Figure 34. WB on Talbot Road Crossing 3E-87.9 Looking left (See 16 in Figure 10)

Figure 35. WB on Talbot Road Crossing 3E-87.9 Looking right (See 16 in Figure 10)

# TRANSPORTATION ANALYSIS

This section of the report summarizes the transportation analysis conducted to identify the adequacy of the surrounding roadways and transportation infrastructure to accommodate the WCMF. The analysis includes an assessment of the I-5 system, County roadways, intersections, and event accesses. The focus of the analysis is to identify access routes to the site that will minimize conflicts with existing traffic or multiple arrival routes, and to separate pedestrian and vehicle traffic within the event venue to the extent possible.

## FESTIVAL TRAFFIC ANALYSIS PROCESS

The project analysis framework is based on the Federal Highway Administration's (FHWA) publication *Managing Travel for Special Events*. Unlike the unforeseen conditions associated with traffic crashes or weather incidents, planned events allow agencies to prepare with an understanding of the specific event location, time, and operating characteristics. This is particularly the case with the Willamette Country Music Festival given the historical information and data available from prior and the upcoming 2018 Brownsville Festival.

Figure 36 was adapted from the FHWA process and details the deliverables prepared within each step of the analysis process and illustrates that the ultimate outcome is the preparation of a Transportation Management/Traffic Control Plan.

As described within the process, the analysis of conditions first occurs based on the existing transportation system without mitigation plans or measures in place. The purpose of this approach is to highlight the areas that the mitigation measures (Transportation Management/Traffic Control Plan) must prioritize.

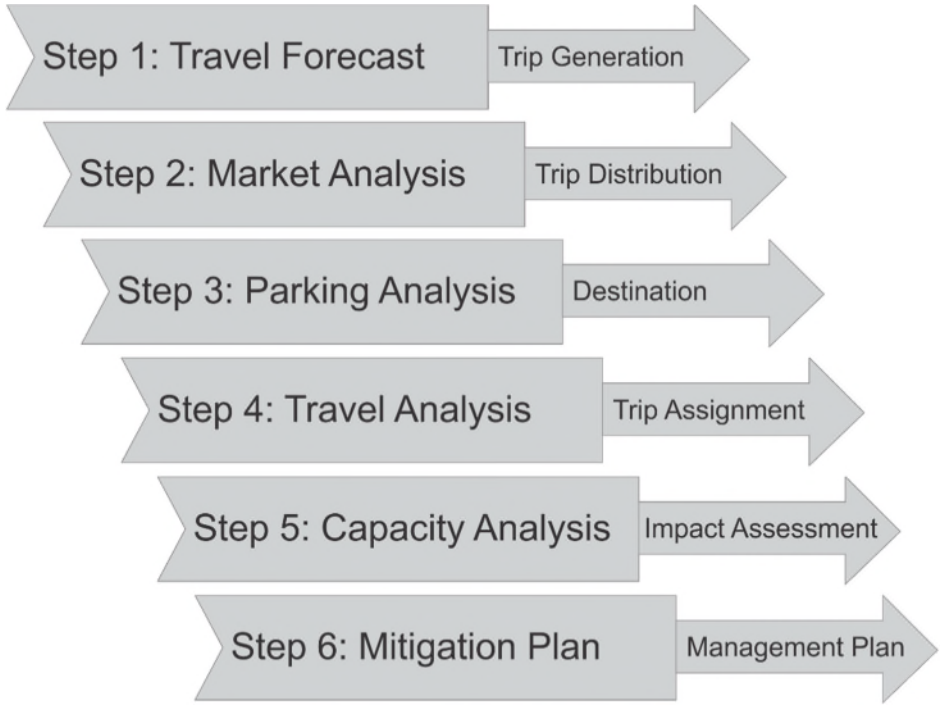



Figure 36. Six-Step feasibility analysis process. *Adapted from FHWA Feasibility Analysis Steps.*

## STEP 1: TRAVEL FORECAST

The purpose of the travel forecast is to identify how many vehicles the Festival will generate, and to prepare a profile of the arrival rates of event patrons. This assessment is prepared based on an assumed event attendance of 30,000 persons. There are three elements of the travel forecast step:

- Modal Split: Based on the rural location, the primary travel mode will be via personal automobile. Shuttle services to the Festival were previously provided at the Brownsville site, but had very low utilization and were subsequently discontinued. For analysis purposes it will be assumed that all trips occur by automobile, with no reductions applied for other travel modes.
- Festival Traffic Generation: This step identifies the number of personal automobiles arriving at the Site. This includes day use attendees, camping, volunteers, organizers, vendors, and performers. This step is influenced by vehicle occupancy, which is also influenced by parking pricing. Additional discussion of this step is provided below.
- Traffic Arrival Rate: This step separates the attendees by arrival time throughout the Festival duration. This includes setup personnel, arrival of campers, day use attendees, and the daily travel fluctuations until the departure of the campers on Monday by 10:00 a.m. following the completion of the event. Additional data and discussion is provided below.

### Festival Traffic Generation (Person Trips)

Within this step the key outcome is to identify the total number of persons present at the Festival across all categories, including Festival day-use attendees, campers, support staff, performers, vendors, and management. Each of these user types is defined below.

- Day-Use Attendees: This includes all those purchasing tickets to attend the Festival on a daily or multi-day basis but not staying overnight. This includes categories such as general admission (GA), premium general admission (PGA), and VIP seating.
- Overnight Attendees: This includes all those purchasing tickets to attend the Festival and staying overnight within any type of campsite (group, tent, RV, or “Glamping”).
- Support Staff: This category includes staff that are responsible for managing the Festival. This includes traffic and parking control, aid station, ticketing and money exchange personnel, trash collection, Festival hygiene services, lost and found, impound lot, emergency services staff, stage crews, audio/video crews, and security.
- Performers: Included in this category are the musicians and bands and all associated support staff.
- Volunteers/Vendors: This category includes food and concession sales that are within the Festival premises. Also included are volunteer organizations (local school districts, civic/service clubs, and informational booths).
- Management: Included within this category are the Festival organizers, Festival control stations, and other types of on-site coordination activities.

The attendance for the 2019 event will be limited to 30,000 attendees, inclusive of event volunteers, support staff, vendors, management staff, and artists/performers. The team has compiled data from past Festivals to identify the composition of each of these groups. This allows us to more specifically identify the total number of persons within the Site and the travel patterns associated with each user group.

The 30,000-person cap on attendees is closely monitored throughout the event and enforced by an electronic monitoring system that provides hourly reports to management staff from within the venue. Ticket sales are capped well below this number to account for the support and management personnel that are on-site within the camping or parking areas (but may not enter the venue and be counted by the electronic monitoring). Ticket sale quotas are set to conservatively assume that all ticket holders will be

present at all times and on all days, though from past events it is clear that the actual attendance is well below these caps, with peak attendance at the 2017 Brownsville event registering 20,800 persons within the venue of the 25,000-person capacity at the event's peak.

To manage the attendance, ticket sales are limited through "Platform Build" through a ticketing agency *(Frontgate[1])*. This allows WCMF staff to set ticket sales limits for all categories of ticket sales, parking passes, shower passes, and other services within the festival. This separates out the complimentary tickets that are provided to volunteers and vendors to have access into the venue either for services or during their off-shift times. This "pre-build" of the ticket sales platform is similar to those at other sporting or concert venues – tickets are not sold in excess of the venue capacity, and historically an approximately 20-percent buffer has been created to ensure compliance is maintained.

As requested by Marion County, as support and management personnel are not as clearly defined additional detail was provided by WCMF outlining the support personnel required to host the festival, as summarized below.

- Artists: The number of artists and support staff that would be on site at any time will not exceed 70 people. This includes a maximum (from the past 10 years) of 14 trucks on site and 10 busses for the days performances. Artists rotate throughout the event.
    - Main Stage artists normally arrive between 1:00 a.m. and 6:00 a.m., with their trucks and busses parked within the backstage area. These artists do not leave until the final act is loaded out, which as a rule takes until about 12:30 a.m.
    - Secondary stage entertainers are given information regarding peak traffic times and are encouraged to arrive early, with the day's artists usually on site before 12:00 p.m. Although they may leave earlier than the Main Stage Artists, they travel in personal vehicles, usually vans, most leaving in early afternoon or late evening after the peak traffic hours. All artists are advised to avoid festival traffic hours in advance of their arrival.
- Sanitation Traffic: The number of sanitation workers scheduled to be on site is 6 people who will be staying on site for the duration of the event.
    - Two truck and trailers will remove waste each day during non-festival hours. Should water hauling be required, six truck trips per day would be required.
    - Sanitation service trucks will service/pump all sanitary facilities twice daily, once in the early morning hours and a second time at approximately 7:00 to 8:00 p.m. (depending upon need). These trucks stay on-site and do not transport. They transfer their loads to large holding trailers that will be used to remove the days loads each day after hours so that they do not add to venue traffic.
- Vendors: The number of people on site for vendor booths varies between events based upon the staffing of the booths.
    - Food vendors will normally include 8-10 people staying on site so that they can work shifts
    - Craft vendors usually have 3 to 4 people on site.
    - With an average 22 food vendors and 15 craft vendors, estimated food staff would be a maximum of 220 persons and craft staffing would be a maximum of 60 persons.
    - Vendors are allowed to restock booths in the venue from 7:00 a.m. to 10:00 a.m. daily. This is done so that any traffic by vendors off site to obtain product is done after they have closed for the night, cleaned their area and met with the vendor coordinator to

[1] Frontgate and Ticketmaster are owned by LiveNation, which manages ticket sales for events throughout the US.

report their daily sales. This is not conducted until the public is out of the venue. So, vendors leaving to obtain merchandise will be doing so after 12:30 a.m. as a rule and must be back to stock before the 10:00 a.m. deadline the following day. Therefore, their traffic is during non-patron traffic hours. Most vendors and their staff prefer to stay on-site to avoid traffic. Several vendors have their own or share refrigeration units to avoid having to travel off-site.

- Trash Hauling: Dumpster hauling truck traffic will normally match the number of dumpsters on site. So, if there are 10 dumpsters, there will be ten truck trips to the venue and away each night.
    - A minimum of 8 to 10 thirty yard or larger dumpsters are placed on-site. Roving crews gather garbage from the trash containers and the grounds in the venue and campgrounds taking it to the dumpsters during festival hours and after the venue closes in the evening. The dumpsters are then picked up each morning between the hours of 6:00 a.m. and 8:00 a.m. with new dumpsters being delivered. On the first day, should additional dumpsters be needed the garbage will be stacked and the additional dumpsters delivered during non-peak traffic hours. The number of dumpsters on site will then be adjusted on the following days so that the morning routine is maintained.
- Production Vendors are responsible for the sound and stage. This includes the following personnel:
    - Brown United Staging – 6 crew who stay on site
    - US Audio – 4 crew who travel to the site each morning early and leave after the public is gone each night
    - Hollywood Lighting – 4 crew who stay on site
    - GoVision – 4 crew who will stay on site
    - Global Backline – 2 crew who stay on site
    - Crane for stage installation – one trip on Saturday before festival and one trip on Tuesday after festival
    - Yoakum Sound and Light – 2 crew who stay on site
- Contracted Personnel: Site and stage crew consists of a group of 35 people who camp onsite and work setting up, maintaining, and cleaning up/removing the stage and site. Most stay for the duration of the event arriving during the start of the build and leaving after the site cleanup is finished. Approximately a third might travel each day into the neighboring community to obtain supplies or eat at nearby restaurants.
- Contracted Sheriff's personnel are usually around 12 deputies and dispatcher who work shifts. They will travel to and from the site daily.
- Flaggers and traffic control personnel – these people normally work shifts with most camping on site throughout the event. At Brownsville events this has been about 12 people camping and another 6 to 8 driving daily. This number will adjust for the Ankeny site based upon the final traffic control plan.
- Security – Security staff camps on site arriving the day before the opening of the festival. They number approximately 100 people and as with the crew about a third will travel off site on any given day when they are not on shift to obtain supplies or eat at a local restaurant.
- Medical Staff normally consists of 9 doctors and nurses and 6 EMTs. The doctors and nurses camp on site throughout the event as do the EMTs.
- Administrative Staff includes contracted ticketing personnel, WCMC personnel and vendor management personnel. This staff will include approximately 20 people. While ticketing people may stay offsite and travel daily, coming early and leaving after closing, the rest of the administrative personnel stay on site throughout the event.
- Catering Staff – This includes the folks who provide catering for the crew, administrative staff and for the entertainers. There are normally two separate catering companies with a total staff of not

more than 10 people. This eliminates the need for all the crew, staff and entertainers to go off site for food.

- Wi-Fi/Internet Provider has two people on site to install, monitor, maintain and remove Internet service equipment. These people stay on site.

**Table 5. Summary of Support Services**

| Support Services | Number of Persons | Typical Travel Times |
|---|---|---|
| Artists | 70 | Early Morning |
| Sanitation | 10 | Early Morning |
| Vendors | 280 | Early Morning (NLT 10:00 a.m.) |
| Trash Hauling | 10 | Late Night/Early Morning |
| Contracted Staff | 190 | Prior to 10:00 a.m./Late Night |
| Production Vendors | 22 | Late Night/Early Morning |
| Total | 717 | |

If desired by Marion County staff, WCMF management staff are willing to work collaboratively with the County to review and approve of the ticketing platform build (essentially the number of tickets available for sale throughout the various seating categories) in compliance with the 30,000 person attendance cap and providing appropriate buffers for event support staff. WCMF staff are also willing to provide the real-time person counts within the gated venue area that are provided hourly as an automated service through Frontgate. Demonstration and showcasing of these technologies can also be made available to County at the 2018 Brownsville event.

## Festival Traffic Generation (Vehicle Occupancy)

Festival vehicular traffic generation is a function of the number of person trips and vehicle occupancy. Vehicle occupancy varies based on the overall user cost (parking and fuel), travel distance, and difficulty to access the Site. Higher parking costs, further travel distances, or more challenging access all combine to result in higher vehicle occupancy. No historical vehicle occupancy data is available from the Brownsville Festival. Anecdotal observations from the traffic control staff and similar Jackson County event identified average occupancy rates between 2.3 and 2.5 persons per vehicle, but in the absence of specific data standard vehicle occupancy data is proposed for application within this analysis. The FHWA procedures Table 5-14b provides the following information within Table 6 on multiday events.

**Table 6. Vehicle Occupancy Data**

| FHWA Table 5-14b. Example Planned Special Event Vehicle Occupancy Factors: Continuous Event | | |
|---|---|---|
| **Event** | **Attendance** | **Average Vehicle Occupancy** |
| 1997 Stonewall Jackson Heritage Arts & Crafts Jubilee – West Virginia | 45,000 to 50,000 (four-day total) | 2.46 persons per automobile |
| 1997 West Virginia Honey Festival | 6,000 (two-day total) | 2.15 persons per automobile |
| 1997 West Virginia Wine & Jazz Festival | 3,500 (two-day total) | 2.42 persons per automobile |
| 22nd Mountain Heritage Arts & Crafts Festival – West Virginia | 25,000 (three-day total) | 2.30 persons per automobile |
| Average | 21,125 persons | 2.33 persons per automobile |

This table shows that within the four studies conducted, vehicle occupancy for multiday events ranged from 2.15 persons per vehicle to 2.46 persons per vehicle, with an average occupancy of 2.33 persons per vehicle. It was not known whether any of these events in 1997 included overnight camping and if separate fees were required for parking. For analysis purposes within this TIA the average vehicle occupancy rate was applied.

We anticipate that with the cost of parking at the festival and the increase in fuel costs since the 1997 studies that the actual occupancy rates will be higher than those from the national studies summarized within FHWA Table 5-14b.

### Traffic Arrival and Departure Rate

Understanding when vehicles arrive at and depart the venue is important in overlaying the Festival profile with those of the surrounding roads and freeway. While ideally the traffic arrival rate would be based directly on the specific time vehicles arrive at the Festival site, data is only available from the Brownsville Festival at the entry gates. When ticketed attendees pass through the entry gates their unique ticket ID numbers are scanned into the automated system, providing hourly attendance information within the Festival.

Campers may arrive at or leave the gated music venue during the Festival without leaving the overall festival grounds, and the data does not distinguish between exiting and entering persons (values only show overall persons beyond the gated music venue). Accordingly, this data does not provide a complete arrival profile, but does provide an indication of the overall arrival trends (particularly of day-use attendees). As shown within the data, the trends vary substantially by day in terms of both the profile and the hourly arrival numbers. *Note that on site hourly attendance information provided to the project team by a national ticketing agency. Ticket capacities are pre-set and include paid and non-paid patrons, volunteers, staff and support staff.*

## Festival Arrival Patterns

Attendance data within Figure 37 shows that Friday and Saturday experience similar event attendance, with lower attendance on Thursday and Sunday. While Thursday attendance is lower, this is also the day that campers will arrive at the site. The camping arrivals will use different festival accesses, operate larger and slower vehicles, and require more coordination and information at check-in than day-use attendees as further described within this report. The site opens earlier for campers than the event gates to stagger these uses.

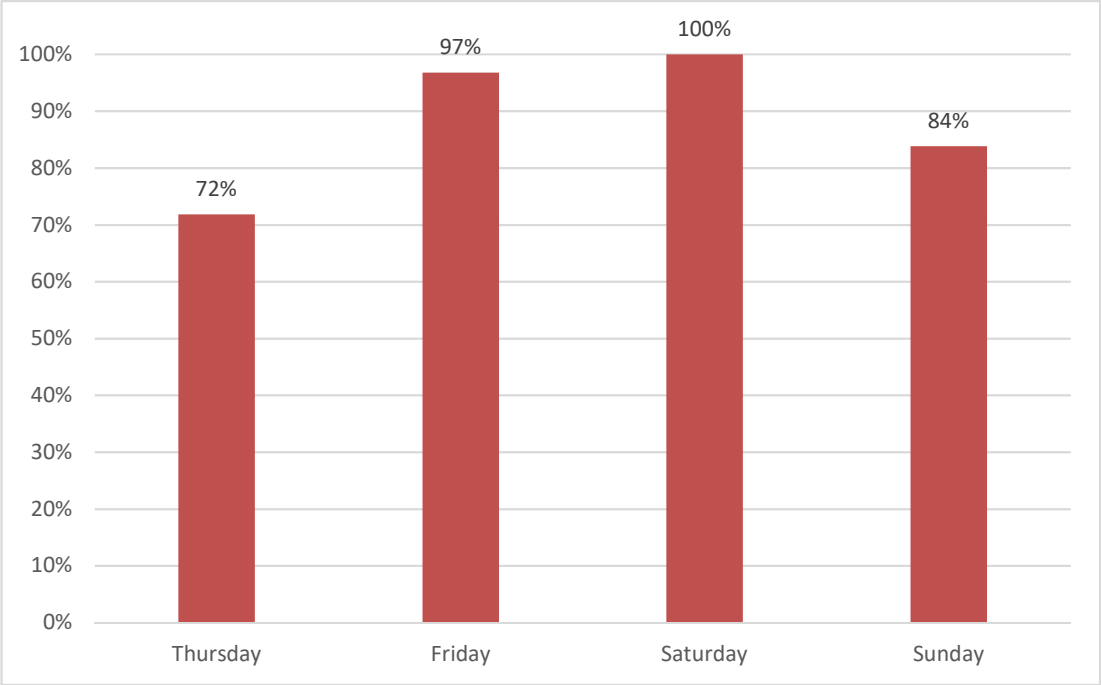



Figure 37. Daily Attendance Trends.

Figure 37 shows the daily attendance trends for the event. It should be noted that while maximum attendance occurs on Saturday, the recorded attendance was less than the 25,000 persons authorized in Brownsville. This reflects that not all tickets are sold, and not all persons that purchase event tickets show up each day or stay for all of the headline acts in a given day. A substantial number of tickets are donated through sweepstakes or given to volunteers that may not have the same incentive to attend the event as someone purchasing event tickets; however, these are still accounted for in the total allowable attendance. Regardless, while historical attendance is approximately 80% to 85% of the maximum allowed occupancy (based on third party gate attendance data), within this analysis it is assumed that Saturday attendance will include up to 30,000 persons.

In addition to variance in days, the attendance data was also used to identify the hourly arrival patterns. Again, the data available from the national ticketing agency does not distinguish between arriving and departing attendees and volunteers, or provide any information about daily outings by campers; the only information available is total persons beyond the music venue gates between the hours of noon and approximately 11:00 p.m. The critical information from this data represents the hourly change in attendees, as this reflects an approximate arrival rate (during the hour prior to when the data is reported). This automated information was not considered to fully reflect the event characteristics, and so was supplemented with information from the event traffic management team to better match field conditions.

Again, the arrival patterns within a specific day could vary based on the day of week and performances. The arrival trends provide an indication of hourly trends, but these trends are expected to vary annually, and the amplitude of the change will vary based on overall event attendance. For analysis purposes two elements were incorporated into the analysis:

- Arrivals by hour (expressed as a percentage to vary based on potential event attendance), and
- Maximum observed percentage change in any hourly period to estimate a maximum arrival rate.

This data shows that on weekdays attendance increases after typical workday hours with the highest arrival rate during the 4:00 p.m. and 5:00 p.m. hours in advance of the headliner acts. On weekends the rates gradually increase throughout the day with a similar peak arrival rate during the early evening hours.

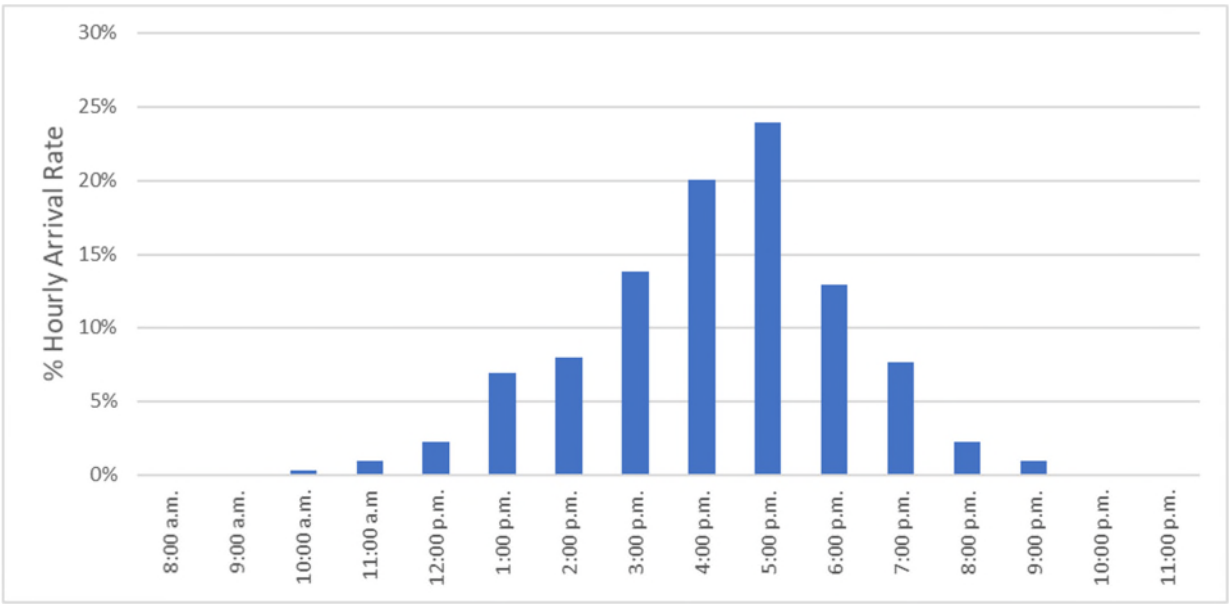



Figure 38. Typical Weekday Day-Use Event Arrival Pattern.

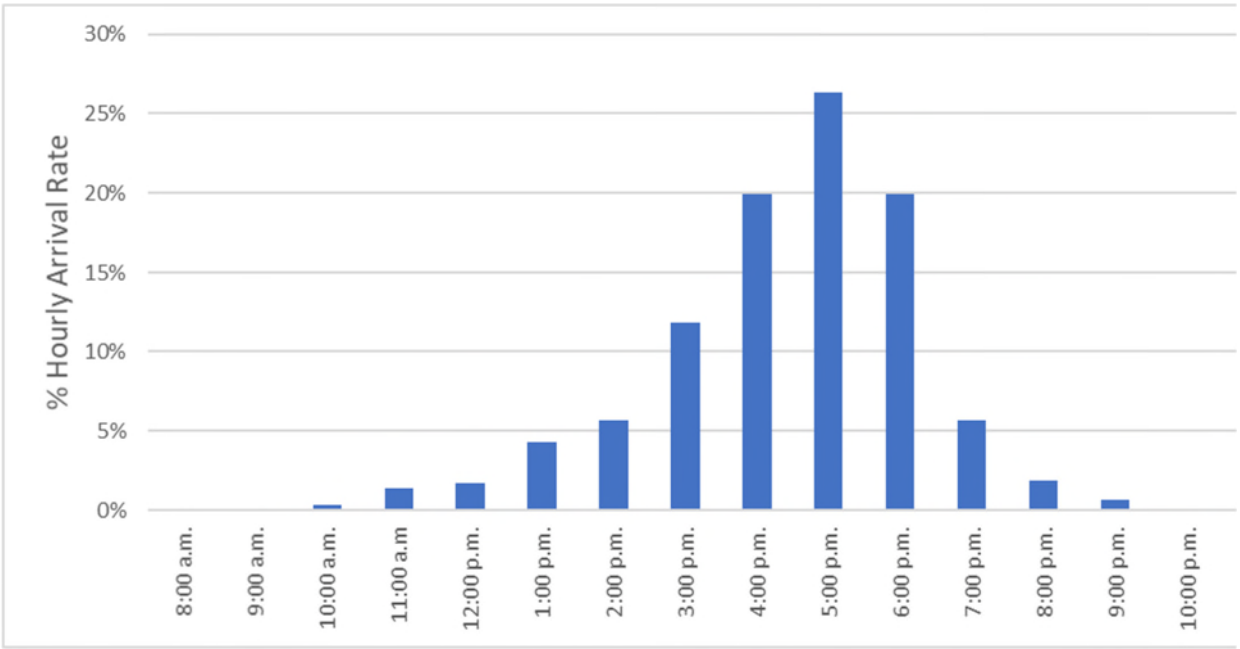



Figure 39. Typical Weekend Day-Use Event Arrival Pattern.

Event attendance is only one component of the trip generation profile for the festival. Day-use attendees (those that are not camping on-site overnight) are expected to bring the necessary supplies and equipment for the entire day, with no local trips outside the venue until they depart for the evening.

Campers are more likely to have some level of daily trips to local attractions, dining or recreation establishments, or nearby shopping. The number of trips is influenced somewhat by the amenities available within the area and the difficulty in exiting the site. WCMF staff overseeing the event indicate that the majority of campers pack food and supplies for the entire weekend, with limited trips off-site until their departure. Events are provided on site throughout the entire day (including the secondary sunrise stage, firemen's breakfast, etc.). Local outings are expected to generally occur in the morning and early afternoon hours prior to 2:00 p.m. between Friday and Sunday.

### Festival Departure Patterns

Discussions with the project team identified that during a typical day 20 to 25 percent of the attendees will leave the venue prior to the completion of the final performance to avoid the crowds and delays. For conservative analysis purposes it is assumed that 95% of event attendees stay until the completion of the final performance. This time period varies by day, with Thursday and Sunday concluding at 9:30 p.m. and Friday and Saturday extending until 10:30 p.m. Most attendees depart during that same hour, with some stragglers choosing to leave after traffic dissipates.

Departure patterns for the campers are different than those of day-use attendees. While some of the campers will depart the event following the completion of the Sunday night performances, official check-out occurs at 10:00 a.m. on Monday morning, allowing those campers with longer-distance trips to rest and recover before departing the site. No data is available from prior events on the percentage of campers that stay until Monday morning. It is expected that a significant portion of the campers will be returning to work on Monday morning, so we assumed that approximately 60% will remain on-site overnight Sunday, with site departures Monday beginning early in the morning.

The combination of daily festival arrivals and nightly departures, campers event arrivals and departures, and daily outings is summarized in Figure 40. This highlights the difference in overall trips associated with varying daily attendance levels, vehicle occupancy, and separates inbound and outbound vehicular trips.

## STEP 2: MARKET ANALYSIS

The purpose of the market analysis is to identify where the trips in Step 1 are traveling to and from. This includes two separate distribution patterns for the more regional arrival/departure trips and convenience trips associated with campers and local volunteers.

Based on review of prior events in Brownsville the proportion of event attendees by category is shown in Figure 41. This chart highlights the two categories of persons that comprise approximately 95% of the event attendees: Day-Use Attendees and Campers. To provide the most effective traffic management strategies, efforts will particularly focus on these attendee populations. The arrival and departure of sanitation staff, performers, vendors, and other minor categories will be well within the margin of error of these other categories, and as highlighted is coordinated to generally occur outside of the event peaks.

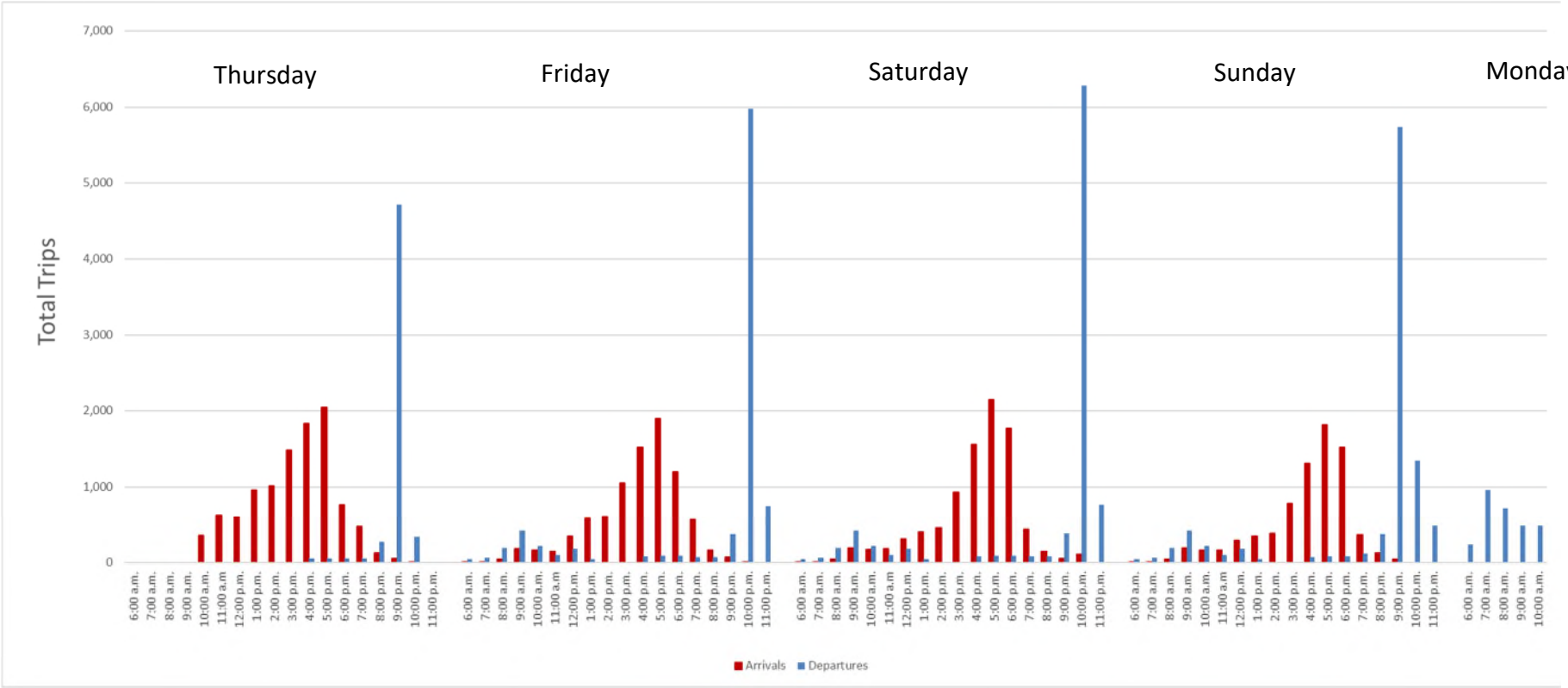



Figure 40. Daily Trip Generation Demand Profile (Thursday through Monday Shown)
*Actual outbound flows will occur over two hours due to the ingress/egress configuration*

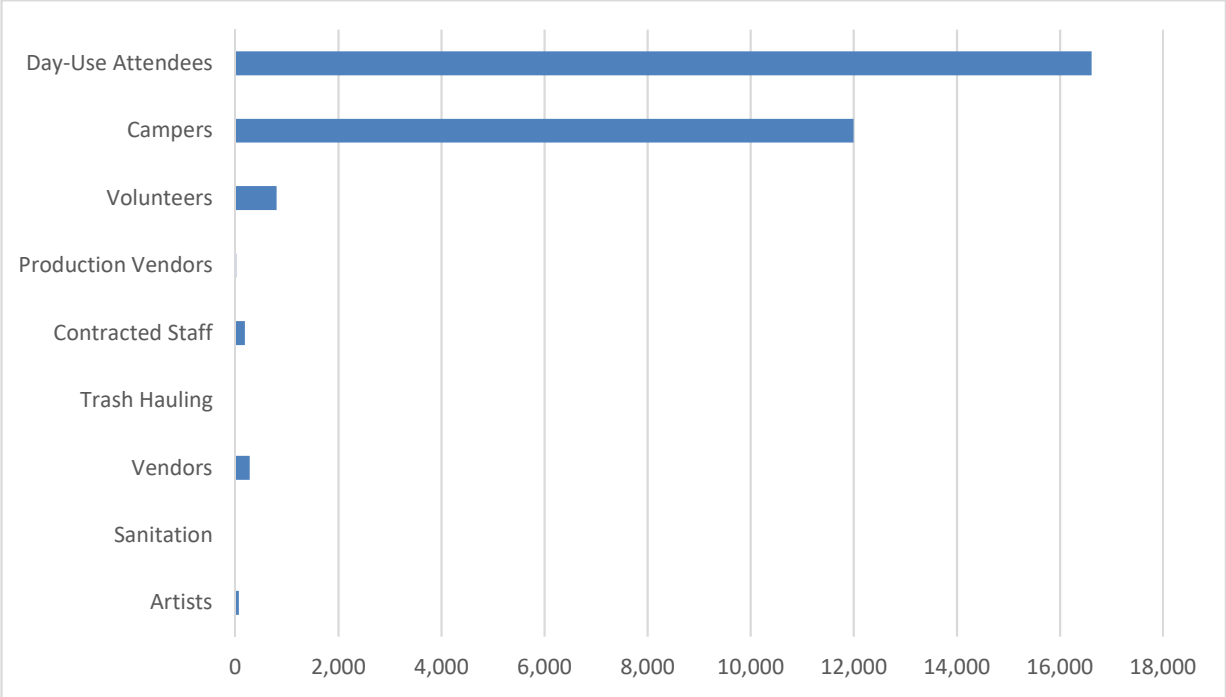



Figure 41. Approximate numbers of attendees by category *(Anticipated Day Use Attendees Increased to Equate to the 30,000-person Maximum for Analysis Purposes)*

## Arrival and Departure/Day Use Trips

Given the historical ticket information available from the Brownsville site, this step can be readily prepared for ticketed Festival attendees, which comprise the majority of the trips, particularly during the peak demand periods. Ticketing sales and subsequent data are provided to the project team by a national ticketing agency. Zip code information available from the ticketing agency was mapped to approximate where event patrons' residences are located, as shown in Figure 42. This shows that Festival attendees are primarily traveling from cities located along the I-5 corridor.

Information from this heat map was then aggregated to the various Site access routes. For example, Festival attendees from Eugene and Portland are assumed to travel to the site via the I-5 corridor, whereas attendees from Dallas or Independence are more likely to use the Marion County roadway system. This information was compiled to define the estimated trip distribution patterns for the overall event, as shown in Figure 43.

## Event Volunteers

Event volunteers are expected to exhibit a more localized distribution pattern. Volunteers may purchase general camping but are not charged for parking. In the initial year the site relocates to the Ankeny area many of the volunteers are likely to continue to travel from the Eugene area. The proportion of volunteers from Salem, Albany, and Jefferson is expected to increase over time.

## Campers

Campers generally arrive throughout the day on Thursday and depart the site either on Sunday evening or Monday morning. Camping sites allow RV's, tent camping, and are large enough to accommodate an additional vehicle. It is anticipated that trips from campers may seek out local attractions, services, and recreational opportunities. This could include trips for coffee or breakfast in the morning, lunch outings,

or the arrival and departure of friends/family prior to the start of the concert with the second purchased vehicle parking pass. Day trips could also include use of the Ankeny Wildlife Refuge trails, the Enchanted Forest, and goods and services in South Salem and Jefferson.

Prior events in Brownsville have shown that after arriving at the festival campers generate relatively few daily trips. Typically, campers prepare for the concert and remain on-site throughout much of the weekend. While the start times for the gate opening varies daily from 3:00 p.m. on Thursday to 11:00 a.m. on Saturday, events for campers occur throughout the day on the secondary *Sunrise Stage* starting at 9:00 a.m. Food vendors remain on-site, and events such as the firemen's breakfast (daily Friday through Sunday from 7:00 a.m. to 11:00 a.m.), providing dining and social activities for event patrons.

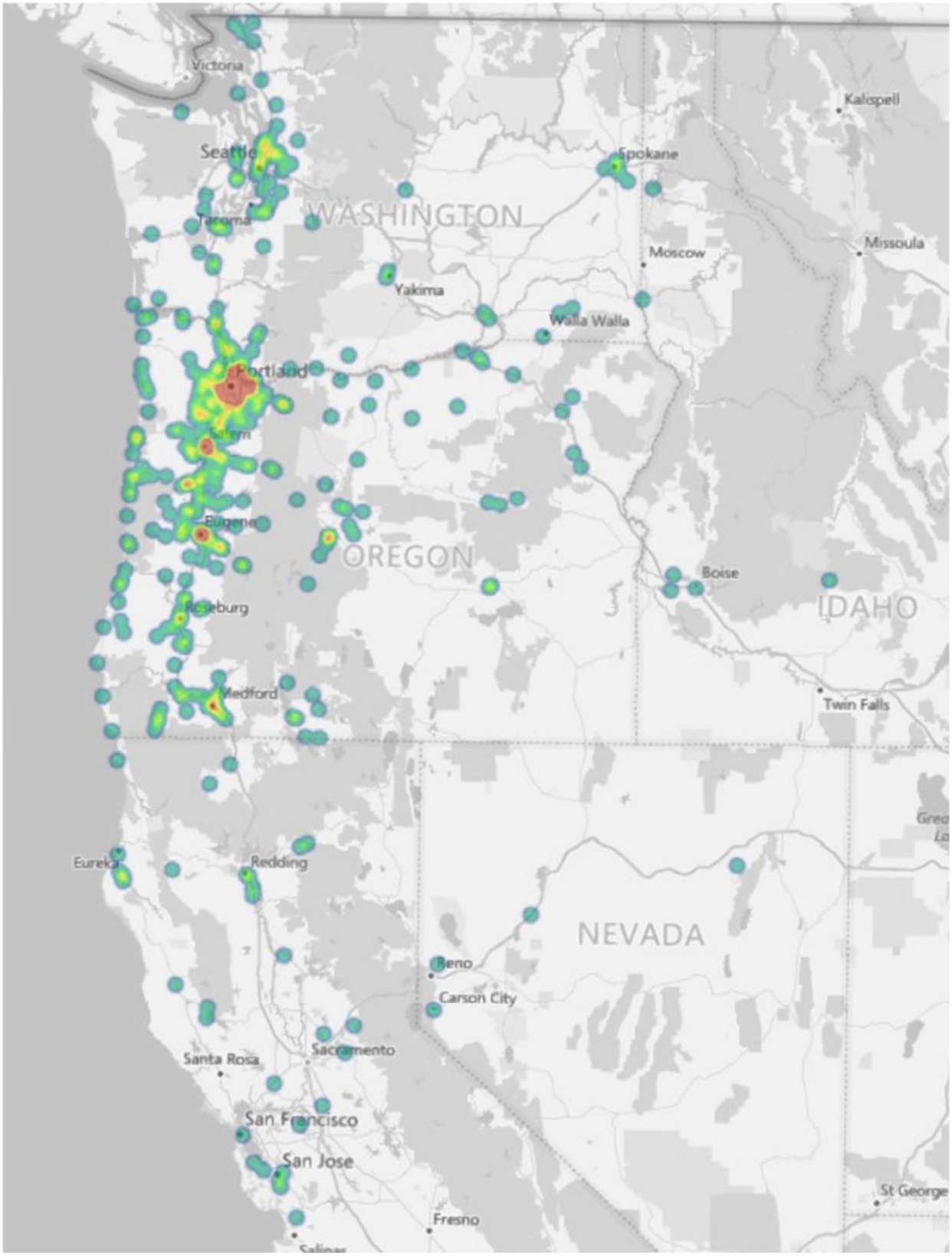



Figure 42. Heat Map Compilation of Automated Ticket Sales Zip Code Data.

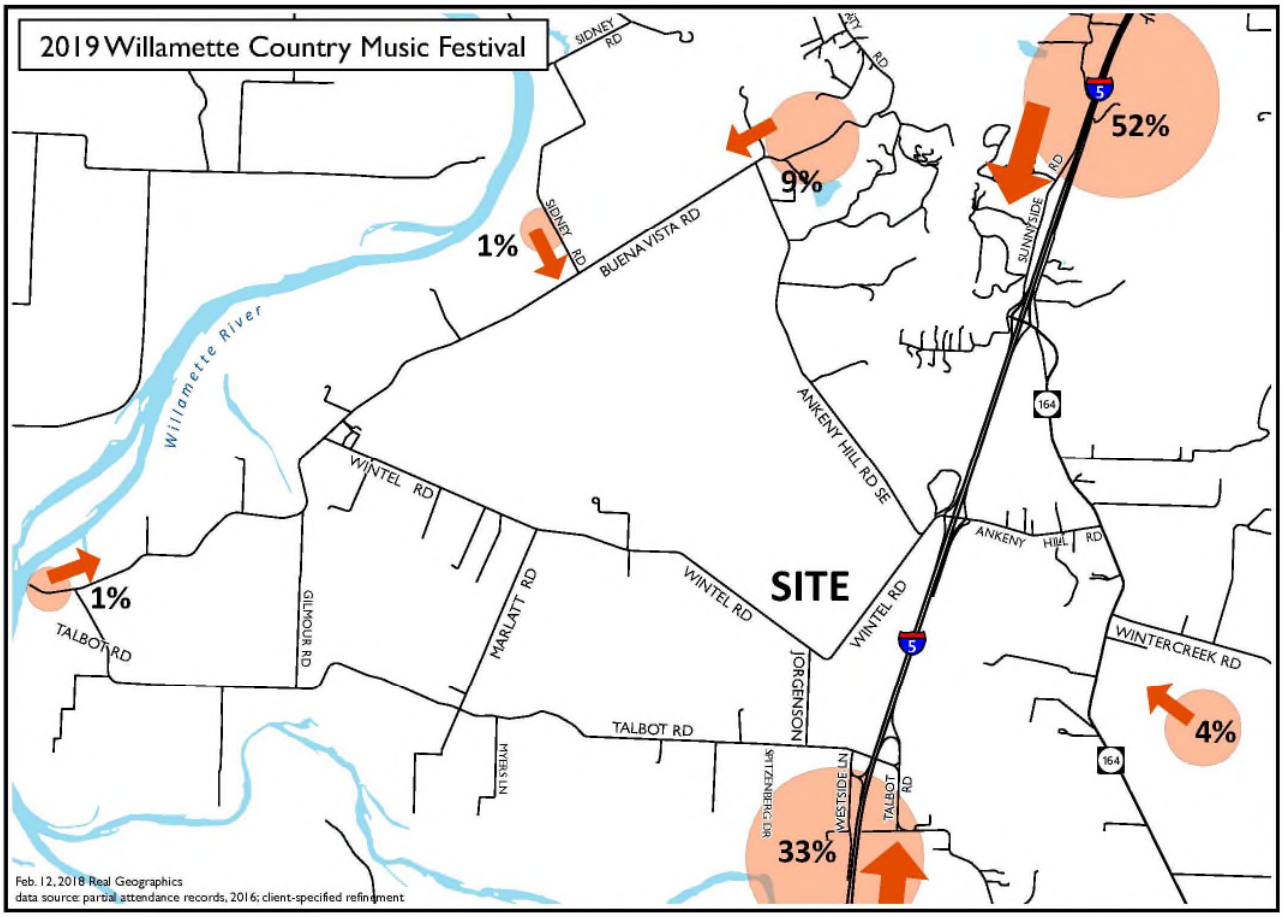



Figure 43. Estimated Arrival and Departure Trip Distribution Data Based on Ticket Sale Zip Codes

## Event Routing

Vehicles heading to and from the event will primarily be using I-5 as shown in Figure 43. The size of the event and resulting traffic generation requires additional planning on the routing of vehicles to and from the event site to minimize impacts to adjacent land uses and I-5. Multiple routing options were considered. These alternatives and considerations are included in the appendix. Based on meetings with and feedback from Marion County and ODOT staff, the following routes were developed for ingress and egress to the venue.

### Ingress to the Site

To optimize the operations during the ingress to the event and minimize potential queuing impacts onto the I-5 corridor, two primary routes to the site were identified based on feedback from Marion County and ODOT staff. For each of these routes a contingency route was also developed, should the primary route experience congestion or delay due to any type of incident or to accommodate the movement of oversized vehicles.

#### *Southbound I-5 Route*

Vehicles heading southbound to the site on I-5 will be directed by Portable Changeable Message Signs (PCMS) to exit at Ankeny Hill Road. Flaggers will be stationed at the Wintel Road/Ankeny Hill Road intersection and vehicles will be directed to continue on Wintel Road to the event. This will be the primary route to the site and is shown in Figure 44. This route has the advantage of being the most direct and

impacting the fewest adjacent property owners and agricultural uses. The risk with this route is that it provides a relatively short queue storage area, so as required by ODOT and Marion County a contingency route was identified that provides approximately eight miles of additional queuing area before queues would back onto the I-5 mainline.

If traffic management or flagging staff identify that queuing is backing near the Ankeny Hill Road/Wintel Road intersection the traffic control flaggers will redirect the festival attendees at the Wintel Road/Ankeny Hill Road intersection to turn right on Ankeny Hill Road and proceed on the contingency route from Ankeny Hill Road to Buena Vista Road to Wintel Road. The contingency plan provides 8 miles of additional queue storage on County roads and utilizes the low-volume roads around the perimeter of the Ankeny Wildlife Refuge. Flaggers and signs will be located along the contingency route for all four days of the event, so that if it is necessary to temporarily direct festival attendees onto the contingency routes the traffic control change can be quickly implemented.

The primary benefit of this route is that it requires no changes for Southbound I-5 drivers in terms of the appropriate exit or route. The transition can occur almost instantaneously and be restored to the primary route as soon as any incidents or blockages are cleared. The benefit of retaining this longer route only as a contingency (rather than a primary route) is that outside of any incidents or congested conditions it will allow local traffic continued access to the wildlife refuge and surrounding roadways.

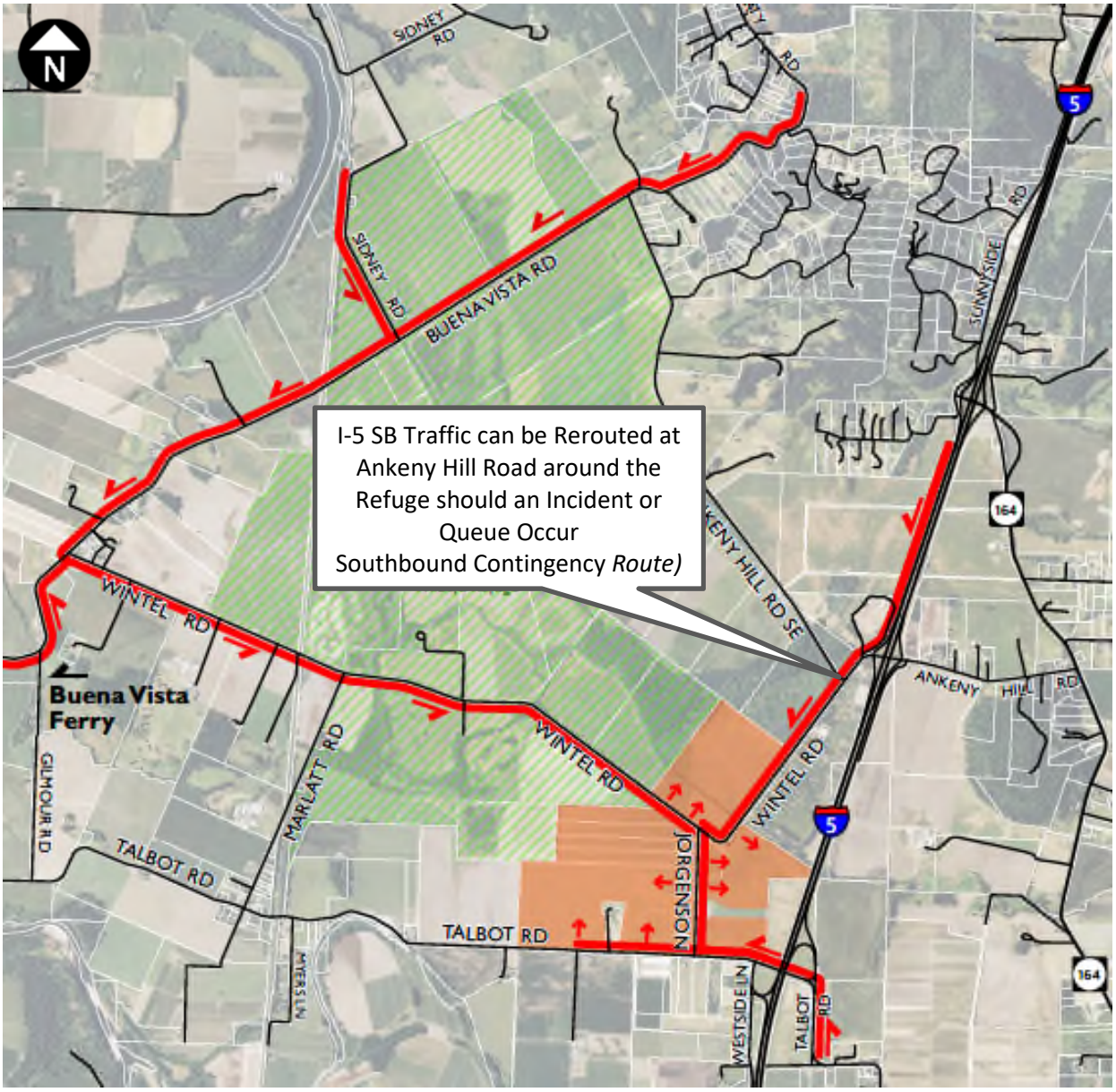


Figure 44. I-5 Southbound Ingress Primary and Contingency Routes

*I-5 Northbound*

The northbound I-5 routes have been modified from the original TIA dated February 20, 2018 based on feedback and direction from Marion County and ODOT. Vehicles heading northbound to the site on I-5 will be directed by PCMS to exit at Ankeny Hill Road exit. The primary route shown in Figure 45 will direct motorists to use Ankeny Hill Road to travel east to the Jefferson Highway, then south to Talbot Road to access the event. This route provides 7.5 miles of queue storage for the I-5 northbound traffic. Flaggers at the Ankeny interchange will monitor the conditions of Ankeny Hill Road and the ramp. Should a queue begin to form on Ankeny Hill Road that is nearing the interchange, the flaggers will contact the event monitoring and incident management teams and the northbound routing would change to the contingency plan that incorporates the North Jefferson interchange. In the event the contingency route was required, the message on the PCMS would be changed on I-5 to direct all northbound motorists to use the Jefferson Highway interchange.

The benefits of this route is that it significantly improves the queue storage available for the event and it simplifies the use of the somewhat complex Talbot Road interchange loop ramps. It also provides simpler wayfinding directions to attendees by directing all traffic to the Ankeny Hill exit, while keeping the northbound and southbound I-5 traffic separate on the east and west side of I-5.

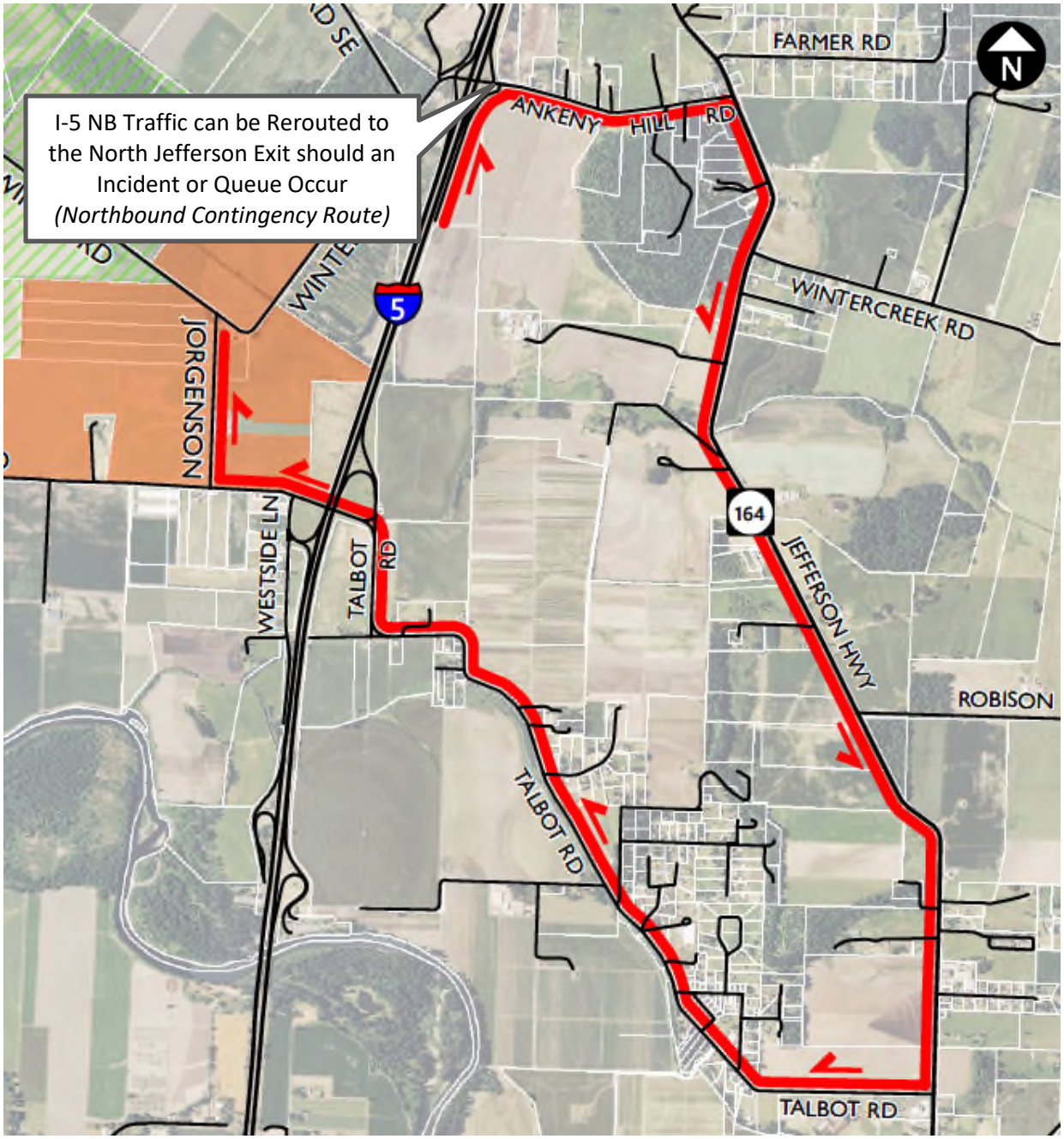



Figure 45. I-5 Northbound Ingress Primary and Contingency Route

Based on the selection of these routes, Figures 46 through 48 illustrate the critical Thursday arrival traffic and the Saturday peak egress traffic on the off-site transportation system. The specific routing of these trips into various access points is discussed within the internal site layout section of this report.

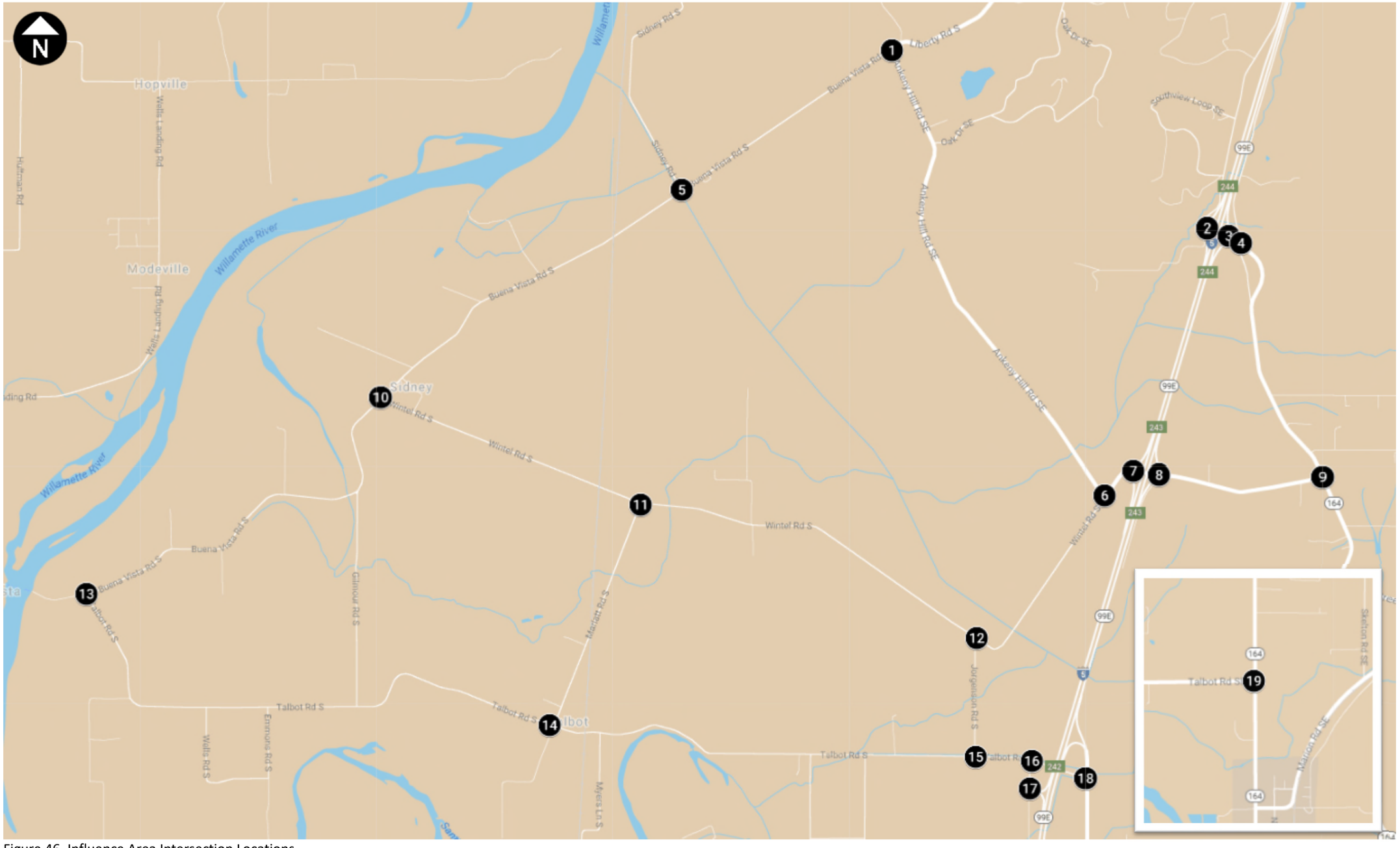


Figure 46. Influence Area Intersection Locations.

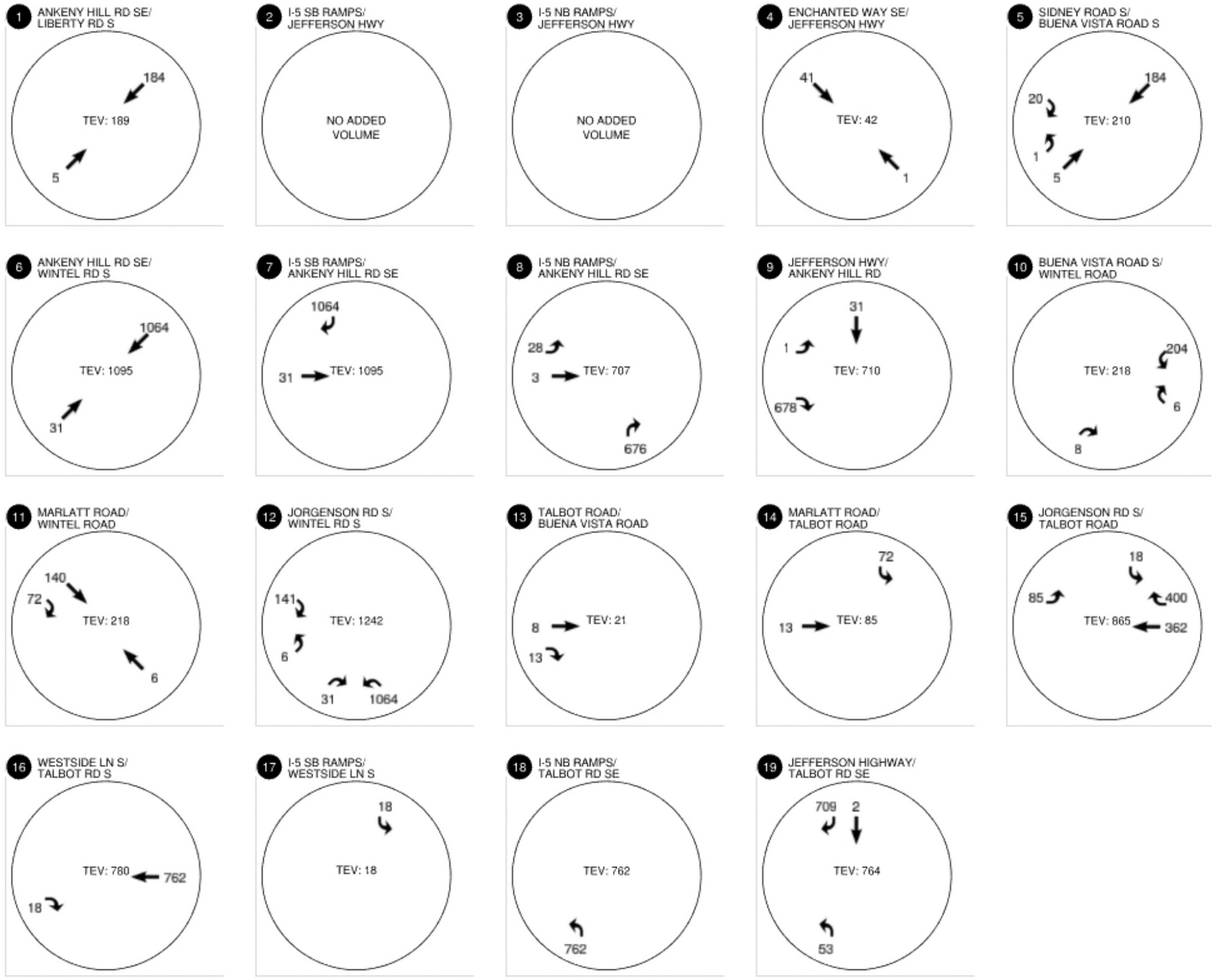



Figure 47. Thursday 5:00 p.m. Critical Ingress Demands (Refer to Figure 46).

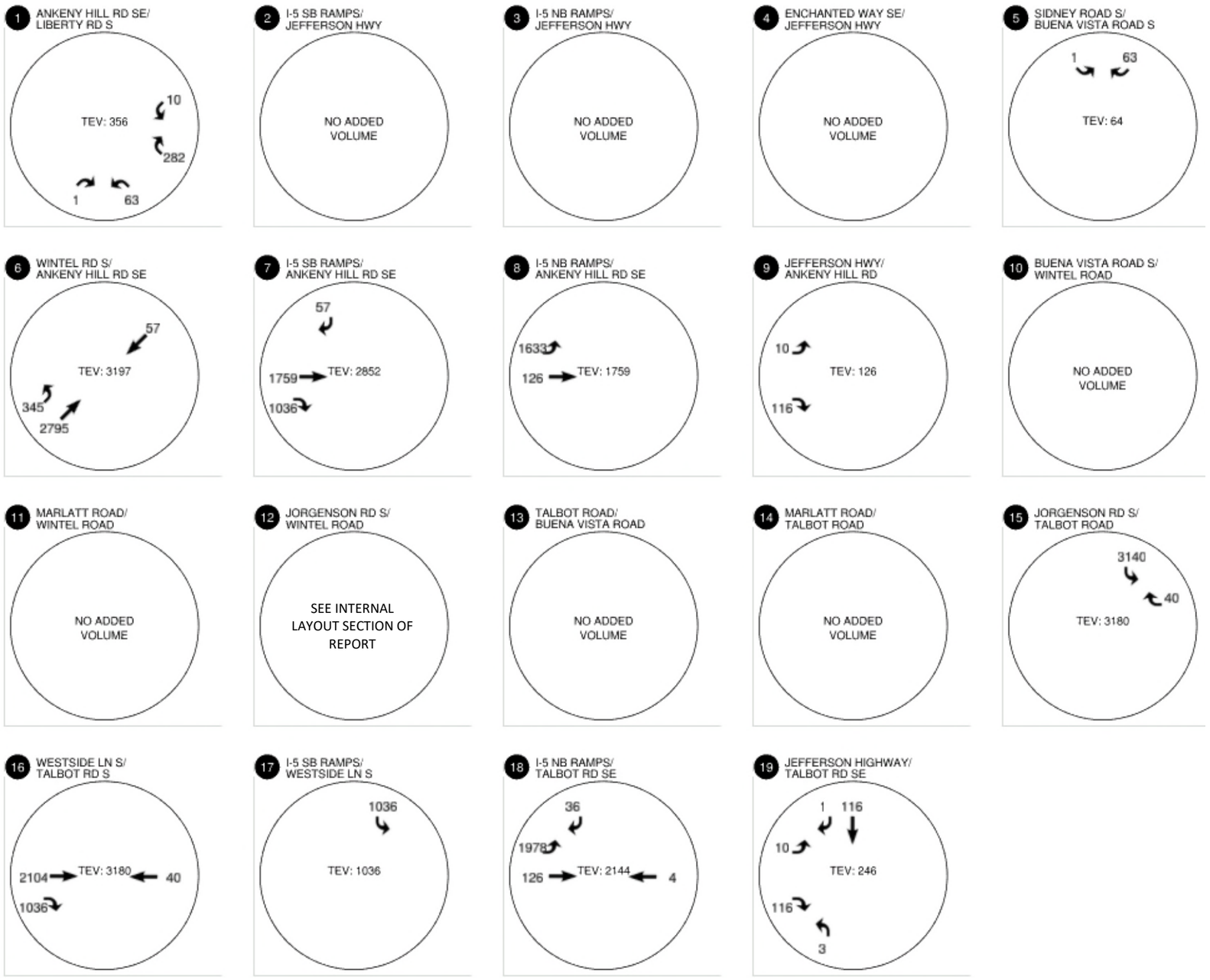



Figure 48. Saturday 11:00 p.m. Critical Egress Demands (Refer to Figure 46).

## Egress from the Site

Vehicles exiting the site have several egress routes shown in Figure 49. The primary emphasis of the site layout is to separate the main egress routes from pedestrian crossings. While local traffic volumes on area roadways (including I-5) will be low and have ample reserve capacity when the event closes for the evening, the design and layout of the site will maintain exiting queues on-site. This design allows local traffic to continue to use the routes in either direction during the peak event hours.

While ingress traffic is separated based on where the trips are traveling from, egress trips are generally separated based on where within the parking fields motorists are parked. This allows the event management staff to select a location that all vehicles must exit toward the south from (toward the Talbot Road interchange), and a point above which motorists must exit toward the north (Ankeny Hill interchange). The location of this boundary allows the festival to split demands toward Ankeny Hill and Talbot Road, allow attendees to exit the site quickly and in a single direction without any required routing decisions while exiting the site. This also allows for a high-capacity pedestrian crossing of Jorgenson Road that will not conflict with exiting vehicles.

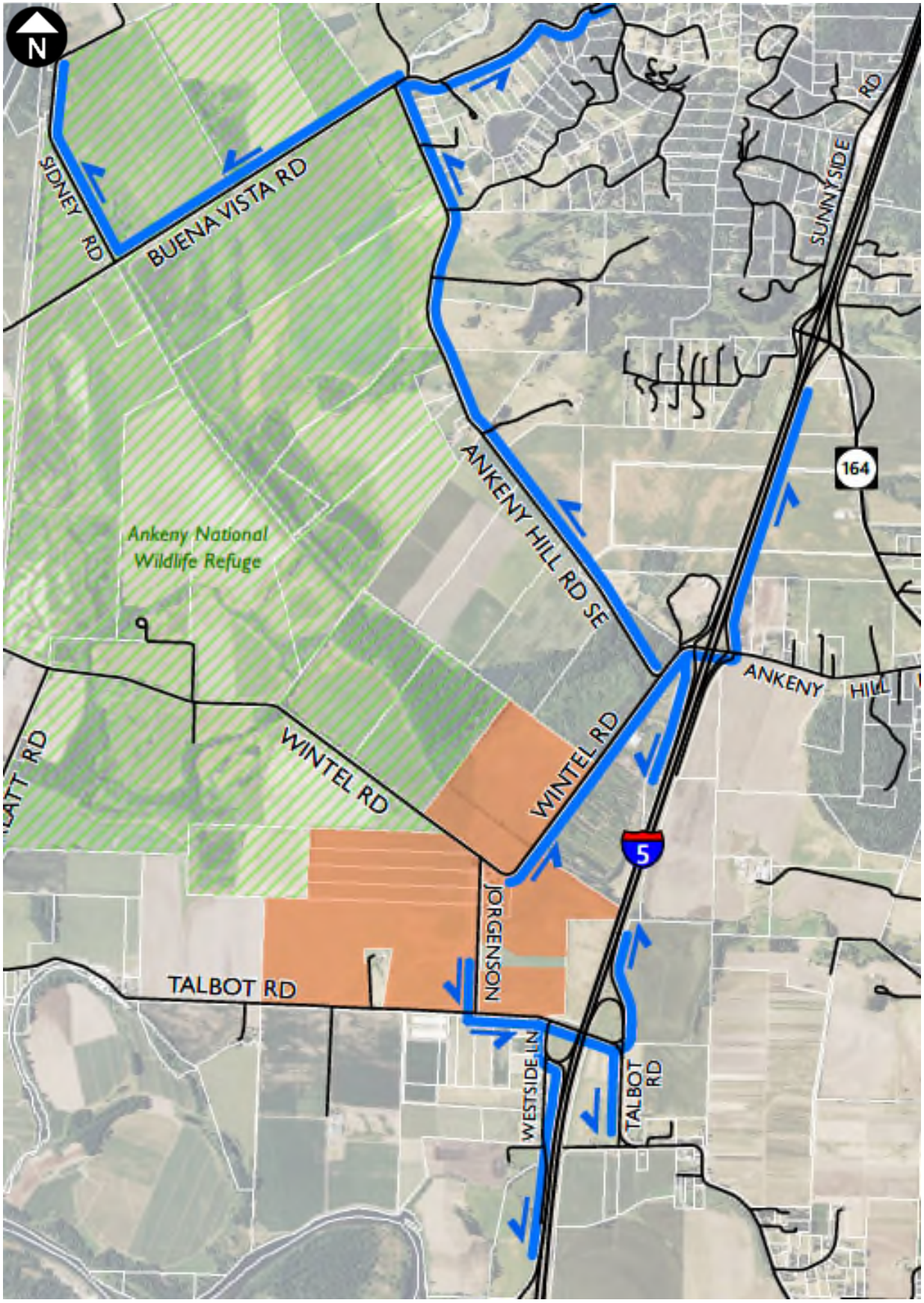



Figure 49. Primary Event Egress Routes.

## STEP 3: PARKING DEMAND ANALYSIS

The purpose of the parking demand analysis step is primarily for events that occur in urban areas that already accommodate background parking demands during non-event periods. This step is less applicable to the Willamette Country Music Festival as there are no parking demands within the fields outside of the event period. However, this does help to highlight that event parking can adequately accommodate projected attendance without spillover. Within this step parking demand was simplified to only consider campers and day-use attendees; support staff, performers, vendors, and volunteers were all classified within the daily trips to conservatively show that adequate on-site parking will be provided.

The on-site camping activity will include 3,000 camping spaces on 250 acres. The camping spaces have a maximum occupancy of six people and provide adequate space for an RV and a small tent, or for two tents. Assuming an average of 4.0 persons per camping site and a higher vehicle occupancy within the camping section of 2.5 persons per vehicle this area will accommodate approximately 12,000 attendees and their vehicles. The camping sites can accommodate two vehicles, and parking aisles include wider 35-foot travel lanes for maneuvering.

After accounting for the camping sites and associated parking, this leaves the potential parking demand to accommodate up to 18,000 persons per day. Parking requirements for the 18,000 daily Festival attendees is based on an average vehicle occupancy rate of 2.33 persons per car, resulting in an estimated maximum of 7,725 vehicles each day. As a general rule of thumb, approximately 132 parking stalls can be assumed per acre for unstriped temporary use resulting in the need for approximately 59 acres of land designated for day-use parking. Areas designated *Premium Parking, General Parking North* and *General Parking South* contain 89.5 combined acres, which provides 30 acres (51%) more on-site parking capacity than required. In addition, there will be 4.5 acres designated for 250 handicap parking spaces. Figure 50 illustrates the preliminary festival parking layout and location of accesses and pedestrian crossings.

Even assuming lower vehicle occupancy rates, the surplus space provided is more than adequate to accommodate the forecast parking demands without spillover.


Figure 50. Preliminary WCMF Camping and Parking Layout

## STEP 4: TRAFFIC DEMAND ANALYSIS

The fourth step in the feasibility process is to identify what the demands on local roads are during non-event periods (in August to coincide with the event). This "background" analysis also needs to account for planned road closures and detours that are ultimately recommended as part of the traffic control plan. This step is largely informed by historical data collection efforts completed by Marion County throughout the area in August 2016.

In addition to the historical link data provided by the County, data collection efforts were conducted on Wednesday, January 17th, 2018 at the locations shown in Figure 51. These traffic counts were used to calibrate the segment volumes and identify area travel patterns at the intersections. Comparison between the intersection turning movement counts in January and segment counts in August showed negligible variance, with the January counts approximately 2% higher than those recorded during the summertime (as summarized in Table 7). This comparison only applies to the Marion County facilities; travel along I-5 experiences different seasonal patterns that are separately addressed within this report.

**Table 7. Historical and Current Traffic Count Comparison, Peak Hour Volumes**

| Location | Segment Count Date | Day 1 | Day 2 | Average | January 2018 Counts | % Change |
|---|---|---|---|---|---|---|
| NE Leg of Liberty/Ankeny | 7/31/2012 | 47 | 42 | 45 | 49 | 110% |
| SW Leg of Buena Vista/Ankeny Hill | 7/31/2012 | 58 | 48 | 53 | 85 | 160% |
| NW Leg of Wintel/Ankeny Hill | 8/26/2016 | 126 | 146 | 136 | 127 | 93% |
| NE Leg of Ankeny Hill/Wintel | 8/29/2016 | 146 | 159 | 153 | 137 | 90% |
| NW Leg of Wintel/Jorgenson | 7/31/2012 | 32 | 22 | 27 | 24 | 89% |
| SW Leg of Wintel/Ankeny Hill | 8/26/2016 | 21 | 19 | 20 | 18 | 90% |
| **Weighted Average** | | | | **433** | **440** | **102%** |

In order to analyze the "background" conditions in 2019 without the impact of the WCMF average Daily Traffic (ADT) volumes on the County road system in the event vicinity have been adjusted and increased to reflect the anticipated traffic volumes for the summer 2019. An annual growth rate of two-percent was used based on a review of the projected traffic volumes on the area roadways in the Marion County Rural Transportation System Plan and confirmation with Julia Uravich at the County. Based on the county data, the ADT volumes were further refined to identify the number of trips in each direction on the county roads, for the afternoon and evening commute hours, to correspond with the peak travel hours for attendees arriving at the festival.

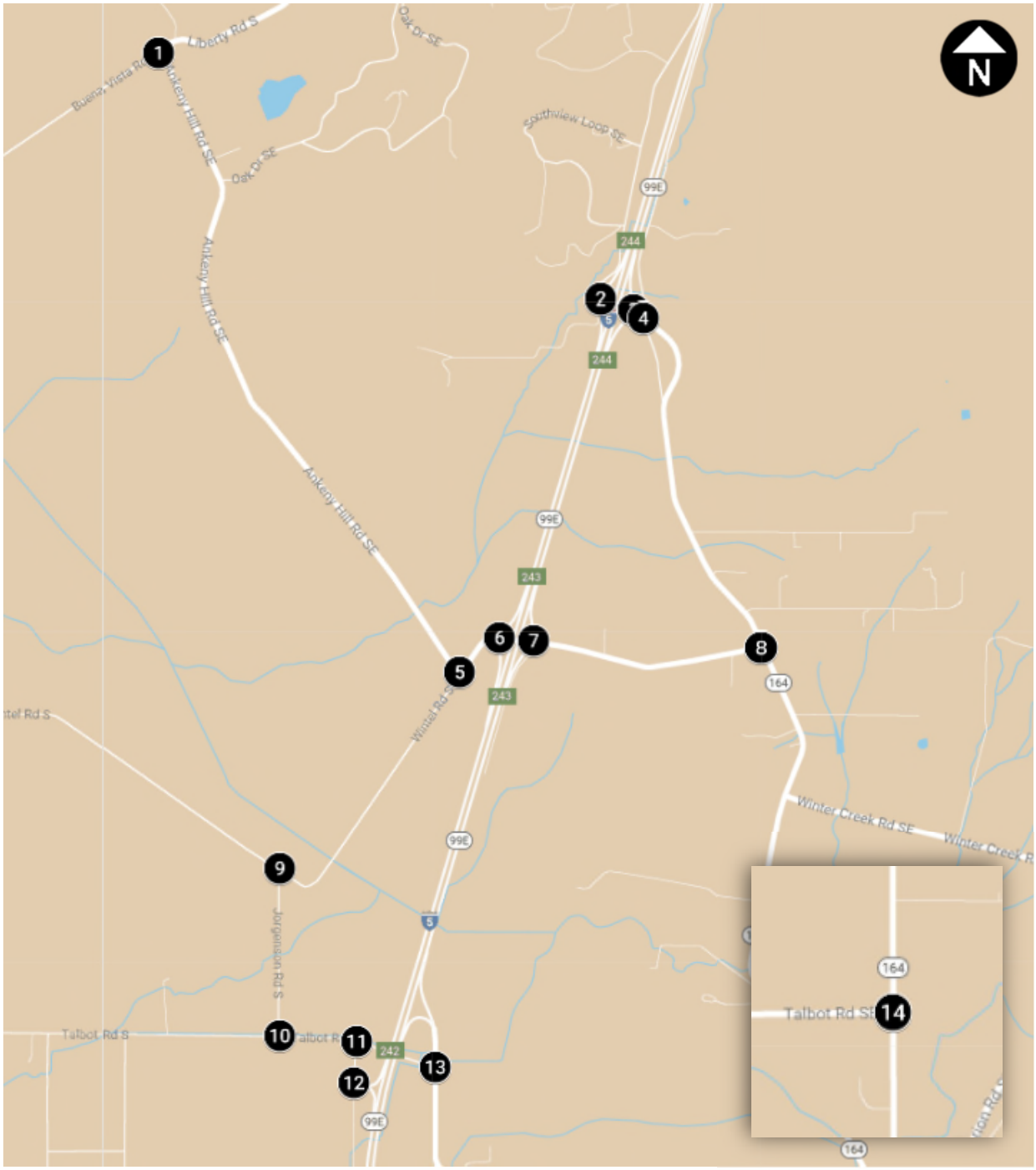



Figure 51. Turning Movement Count Locations.

# STEP 5: ROADWAY CAPACITY ANALYSIS

This section of the report reviews the available capacity within the supporting roadway network to accommodate the forecast year 2019 traffic volumes within a non-event period and overlay these conditions with the event traffic developed in Steps 1 and 2. This analysis was conducted within a four-tiered process:

1. Are there adequate entrances and exits to accommodate the traffic flows entering during peak times or exiting after the final performances?
2. Does the intersection of various County or Interstate ramps provide adequate capacity in their current configuration to effectively process the forecast demands?
3. Can the County roadway system accommodate the forecast travel demands within the existing roadway sections?
4. Can the I-5 system accommodate typical and event traffic demands from the north and south? Will the interstate system be operating within or over its carrying capacity, and how will this influence traffic control needs or the potential use of alternate routes?

The order of these steps was provided to reflect the metering that occurs within the transportation system, as shown within this analysis, the ability to exit the Festival and access the I-5 corridor will be limited by the capacity of the County roads.

## Event Entry and Egress Analysis

The festival layout is separated by Jorgenson Road and Wintel Road. As shown in Figure 50 (and Figure 5), the main stage is located on the northernmost field. The layout of the site has been revised to combine Premium and General Admissions parking east of Jorgenson Road for ease of control, with Premium Parking located closest to the venue and closest to the exits. General admission parking is located south of the Premium parking and interconnected with drive aisles.

The layout of the site allows multiple access points into the parking stalls and substantial internal queue storage area. Since the parking area is required to be vacated each night, ingress flows simply start at the back of a row and fill in as patrons arrive, increasing the parking efficiency by removing the need to search for a parking stall. On-site parking staff will direct vehicles to the appropriate rows, allowing inbound maneuvers to occur efficiently.

Camping activities will occur on the west side of Jorgenson Road (with exception of handicap camping sites that are located near the venue). Each Campsite is pre-marked with marking flags and placards that correspond with the campers' assignment. Campers are pre-mailed their coinciding vehicle placards to display in their windows. Staff and Volunteers are present to direct campers to the appropriate sections upon arrival. There is an established cut-off date to purchase camping passes, and no campsite purchases are allowed on site.

In order to effectively allow event patrons to return to the camping sites or parking areas after the end of daily festival activities, clearly designated pedestrian routes will be provided from the gated venue area. The internal layout was developed to reduce conflict points with clearly designated pedestrian crossing areas and by separating traffic from the north and south to prevent conflicting movements while exiting. The following strategies are recommended:

- It will be critical that pedestrians do not travel down the roadways heading to or from the event. Fencing around the parking and festival areas will be necessary to ensure that pedestrian crossings occur only at designated locations and with appropriate flagging control.

- Getting vehicles off Wintel Road and into the parking areas will be important to avoid queues and back-ups onto the I-5 corridor. Ingress into the parking fields will need to provide a higher capacity than the inbound flows on County roads through multiple and controlled event access points.
- Due to the cost of Festival Tickets more than 95 percent of the Event tickets are pre-purchased. The only parking available to purchase on site is General Admission Parking. Vehicles entering the General Admission parking area without a pre-paid parking pass are met by one of six parking volunteers to sell them a parking pass. The Festival communicates prior to event that general admission parking is available on site and only cash is accepted.
- Handicap parking is provided near the gated venue area.

With these strategies coupled with the layout and event routes shown, event attendees will be able to efficiently exit the County roads and enter the site. The long entry aisles will allow motorists to turn off of the County roads before making parking maneuvers. In addition, a drop-off loop is provided near the General Parking South area to support ridesharing/taxi services.

Accesses for RV traffic is also located away from the Talbot interchange with I-5. The linear drive aisles and clearly marked rows reduce time spent wayfinding, and with larger pull-through campsites, 35-foot wide camping area roads, and 45-foot perimeter roads will further assist with maneuvering and preventing bottlenecks.

## Intersection Analysis

This section describes the intersection analysis. The junction of roadways and traffic control right-of-way designations are expected to provide the most significant constraints to traffic flow entering and exiting the event. The intersection analysis was conducted at intersections and I-5 ramp terminals along the primary ingress and egress routes.

Conditions for an event are typically prepared both for background (no-build) and with-event conditions to provide a comparison and highlight the impact of the event. However, area roads experience very low volumes, and field review shows that all of the area intersections currently operate well within agency performance standards today, likely at Level of Service “A” or “B,” indicating very low delays within this rural area.

The operations analysis was prepared using Synchro 10 analysis software and Highway Capacity Manual 6$^{th}$ Edition methodologies. Typical adjustment factors were included within the analysis (heavy vehicles, pedestrians, reduced saturation flow rates, etc.). Since the peak departure period is expected to include relatively stable and heavy traffic flows a peak hour factor of 1.0 was applied to this time period along the primary routes. A peak hour factor of 0.95 was applied to these routes during all other time periods within the study area, with lower peak hour factors conservatively applied to County roads west of the site to account for the more dispersed traffic conditions in the lower-volume areas.

As previously described within this report, January traffic volumes on the county roads were nearly equivalent to historical summer counts within the area. The traffic volumes collected in January 2018 were adjusted to reflect summer 2019 conditions through the application of a two-percent annual growth rate and were adjusted using the roadway profiles to reflect the peak event analysis periods.

The intersection analysis was conducted based on the existing traffic control. The purpose of showing the current conditions is to highlight the locations that will require mitigation measures to accommodate the projected traffic demands. Assessment of peak conditions was prepared by combining the hourly traffic flow profiles with the event trip profiles to identify critical time periods within the system. This review shows that with the low area traffic volumes the event peak hours will serve as the most critical time periods. This includes the Thursday evening arrival peak hour (5:00 p.m.) and the Saturday departure peak

(starting at 10:30 p.m.). These peak hours reflect the most critical inbound and outbound flow rates during the event assuming full event attendance of 30,000 persons.

It was noted that ingress on Saturday can be higher than on Thursday. However, on the first day of the event conditions reflect drivers that are less familiar with the area and with the parking and access routes, and traffic composition includes larger and slower recreational vehicles/camping trailers. Based on discussions with agencies and feedback from Brownsville events the Thursday ingress was considered the most critical period to assess.

### Event Ingress Peak Conditions

The operational analysis of peak arrival patterns confirmed key area deficiencies with the current traffic control, assuming traffic from the north is routed toward the Ankeny interchange and traffic from the south utilizes the Ankeny interchange to Jefferson Highway. This analysis includes a high percentage of RV traffic, as campers are still arriving on-site into the early evening hours. All camping traffic is routed to entrances along Jorgenson Road and Talbot Road, which will create some level of conflicts with pedestrians crossing from the General Admission area and heading toward the venue.

- The most constrained portion of the travel route is the Wintel Road section serving southbound I-5 traffic from the north.
    - The I-5 Southbound/Ankeny Hill Road interchange operates over capacity with queues that would extend onto the I-5 mainline without traffic control changes.
    - The I-5 Northbound/Ankeny Hill Road interchange operates with low delays but with queues that would extend onto the I-5 mainline without traffic control changes.
    - The I-5 Northbound Route onto the Jefferson Highway will require traffic control changes at the Jefferson Highway intersection and at the Talbot Road intersection. This will address both congestion and available sight lines.
    - The intersection of Wintel Road/Ankeny Hill Road also exceeds capacity in its current configuration, with the route toward the festival controlled by the stop sign.
- The use of the Talbot Road interchange to only serve through movements for event attendees reduces the pressure on the loop ramps. Despite the acceptable operations, traffic control will be required to ensure that event attendees use the marked route and local traffic has continued access from I-5.
- Intersections along County roads toward south Salem and Independence are well within their carrying capacity and will not require changes to the existing traffic control. Traffic control will be staged at the Ankeny Hill Road/Liberty Road intersection to support the potential implementation of the I-5 Southbound Contingency Route.
- Event patron use of the North Jefferson Interchange is expected to be low; however, if the Northbound I-5 contingency route is required traffic control changes will be needed at the northbound ramp terminal.

### Event Departure Peak Conditions

Event departure patterns occur at 9:30 p.m. on Thursday and Sunday and at 10:30 p.m. on Friday and Saturday. At these times the County roads are generally operating with a single vehicle every five to ten minutes under background conditions, with higher volumes on the Jefferson Highway. The low surrounding volumes substantial reserve capacity to accommodate event traffic.

The peak departure event occurs on Saturday evening when event attendance is highest. During this period the majority of vehicles are passenger vehicles, with most RVs and campers expected to remain in place. Within the analysis the flows are overwhelmingly outbound, with limited trips inbound reflecting

Uber/taxi service. While most of the camping attendees are expected to remain in place, some outbound travel associated with guest vehicles departing for the evening is expected. Trips for these uses were added to the analysis.

As previously described, the division of the northern portion of the parking areas toward Ankeny Hill Road and the southern portion of the parking areas toward Talbot Road disperses the traffic demands to either interchange and prevents conflicting traffic movements. All traffic routed onto Talbot Road will be directed toward the east (I-5) to prevent the late-night travel through the farming areas, over the passive rail crossings, and will reduce trips onto Liberty Road. While this will require out-of-direction travel for event attendees headed toward Monmouth/Independence/Dallas, alternate routes are available from the I-5 corridor.

- The Wintel Road segment toward I-5 north again reflects the primary system constraint, with the Wintel Road segment toward Ankeny Hill Road operating over capacity (requiring more than a single hour to serve all egress demands), and with the current stop-control affecting the primary egress route.
- The route toward I-5 south at Talbot Road operates over its carrying capacity and will also require more than a single hour to serve the egress demands.
- Marion County roads operate acceptably toward Independence and south Salem.

The internal layout of the site effectively captures queuing and delays within the event site. Exiting flows will be metered by the capacity of the driveways and County roads to access the I-5 ramp terminals.

## County Road Analysis

The second tier of the analysis was to assess the ability of County roads to carry the forecast traffic volumes. Unlike the I-5 corridor, area roads serve very low volumes today and the event traffic will comprise the majority of the vehicles on the facilities. As such, event peaks will dictate Country roadway facility peaks.

The review of County roads in the site vicinity was based on the HCM 2010 methodologies and ODOT's Analysis Procedure Manual Version 2 Addendum 11B. The County roadways near the site are categorized as Class II Two-Lane Highways for the purposes of the analysis. Class II highways are typically collector and local roads where travel at high speeds is not the primary objective of motorists. These roadways provide connections to arterials such as I-5 and River Road and generally pass through undeveloped areas.

The operations of two-lane highways can be determined by analyzing the Level of Service of a segment. However, capacity analysis is important for special event planning. Both are based on the percent time spent following, which represents the average percentage of time vehicles are in platoons behind slower vehicles due to an inability to pass.

The capacity of a two-lane highway under base conditions is 1,700 passenger cars/hour for a single direction, with a limit of 3,200 passenger cars/hour for the total of both directions. The interaction of the opposing flows of traffic is such that when one direction is at capacity with 1,700 passenger cars/hour, the maximum opposing flow would be limited to 1,500 passenger cars/hour.

The capacity of a Class II Two-Lane Highway is calculated with the equation,

$$c_{dPTSF} = 1{,}700 f_{g,PTSF} f_{HV,PTSF}$$

$c_{dPTSF}$ is the capacity in the analysis direction under prevailing conditions based on the percent time spent following.

$f_{g,PTSF}$ is an adjustment factor to account for the road grade. For level grades such as on the study roadways, this factor is 1.00.

$$f_{HV,PTSF} = \frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$$

$f_{HV,PTSF}$ is an adjustment factor to account for trucks and recreational vehicles in the traffic flow. To calculate the heavy vehicle adjustment factor, a base capacity of 1,700 passenger cars/hour is used when reviewing the tables in the HCM 2010. For any vehicle demand greater than 900 vehicles per hour, which is what is used when calculating capacity, the values for $E_T$ and $E_R$ are 1.0 based on Exhibit 15-18 from the HCM 2010. Therefore, regardless of the percentage of trucks and recreational vehicles, $f_{HV,PTSF}$ is equal to 1.0 when determining the capacity on these roadways. Essentially, trucks and RVs provide a significant factor in the percent time spent following other vehicles, but at higher volumes the impact of these vehicle types is lessened due to the increasing congestion.

$$f_{HV,PTSF} = \frac{1}{1 + P_T(1.0 - 1) + P_R(1.0 - 1)}$$

And $$c_{dPTSF} = 1{,}700 * 1.00 * 1.00$$

$$c_{dPTSF} = 1{,}700 \text{ veh/hr}$$

Given the balanced directional distribution assumed for the background 2019 volumes, the two-way capacity of the segment would be 3,400 vehicles per hour. This exceeds the limiting capacity of 3,200 passenger cars per hour; therefore, a total two-way capacity of 3,200 passenger cars per hour would prevail, with a directional capacity of 1,600 vehicles per hour. This segment flow rate will meter the amount of traffic that can exit the festival at a given time, limiting the demands that can reach area intersections and the I-5 corridor.

## I-5 Analysis

The roadway capacity analysis on I-5 was based on Highway Capacity Manual (HCM) 2010 methodologies, in collaboration with ODOT Analysis Procedures Manual (APM) methodologies. As of January 19, 2018, the ODOT APM webpage states that "Chapter 11 – Segment Analysis – Not Yet Complete," so the operations analysis was based on the HCM 2010, Chapter 11 Basic Freeway Segments, with application of seasonal calibration factors per the APM.

Information on this adjacent section of I-5 was provided from ODOT TransGIS is summarized in Table 8.

**Table 8. I-5 (ODOT Highway No. 1) Characteristics**

| Metric | Value |
|---|---|
| Average Annual Daily Traffic (AADT) | 62,900 (2016 Data) - MP 241.83 Talbot Road |
| Truck Percentage | 23.65% |
| Design Hour Factor (K) | 8.9 |
| Directional Factor | 52 |
| Posted Speed | 65 mph |
| Safety Priority Index System (SPIS) Sites | MP 239 (85th to 90th Percentile, 2016 Report)<br>MP 239 (90th to 95th Percentile, 2016 Report)<br>MP 243 (85th to 90th Percentile, 2016 Report)<br>MP 244 (90th to 95th Percentile, 2016 report) |
| **I-5 Southbound (North of Talbot Road)** | |
| Travel Lane Width | 12 feet |
| Left Shoulder Paved Width | 4 feet |
| Left Shoulder Gravel Width | 0 feet |
| Right Shoulder Paved Width | 10 feet |
| Right Shoulder Gravel Width | 0 feet |
| **I-5 Northbound (South of Talbot Road)** | |
| Travel Lane Width | 12 feet |
| Left Shoulder Paved Width | 4 feet |
| Left Shoulder Gravel Width | 0 feet |
| Right Shoulder Paved Width | 10 feet |
| Right Shoulder Gravel Width | 0 feet |
| **I-5 Southbound (North of Ankeny Hill)** | |
| Travel Lane Width | 12 feet |
| Left Shoulder Paved Width | 6 feet |
| Left Shoulder Gravel Width | 0 feet |
| Right Shoulder Paved Width | 10 feet |
| Right Shoulder Gravel Width | 0 feet |
| **I-5 Northbound (South of Ankeny Hill)** | |
| Travel Lane Width | 12 feet |
| Left Shoulder Paved Width | 4 feet |
| Left Shoulder Gravel Width | 0 feet |
| Right Shoulder Paved Width | 10 feet |
| Right Shoulder Gravel Width | 0 feet |

Field observations and data from the ODOT TransGIS website shows that there is limited right shoulder width on the approaching shoulders for vehicles to park. Accordingly, providing adequate capacity at the ramp terminals and queue storage into the Site will be critical to avoid back-ups that could otherwise affect the mainline.

Data from permanent traffic count station (Automatic Traffic Recorder 22-005) was obtained from ODOT for 2016 and 2017. Within this data, the hourly profile of the coinciding weekend was reviewed. As there

were travel impacts associated with the Solar Eclipse (August 21, 2017) impacting the 2017 dataset only the 2016 profile was used, as this is expected to better reflect summer conditions on the I-5 corridor.

Volume data from the I-5 ATR shows that more traffic is carried on the I-5 corridor on Friday than any other day, and daily weekday travel is higher than on weekends though the peak hours on weekends reflect the maximum flows on the facility. The HCM segment analysis was conducted with the ODOT dimensional data and the hourly directional traffic flows. A peak hour factor of 0.95 was assumed based on the high-order facility type.

Equation 11-1 of the Highway Capacity Manual 2010 Edition states that the Free Flow Speed (FFS) for a freeway is related to the lane width ($f_{LW}$), lateral clearance ($f_{LC}$), and interchange ramp density (TRD). For this section of I-5 the following applies:

HCM Equation 11-1: $FFS = 75.4 - f\_LW - f\_LC - 3.22\ 〚TRD〛\ \text{^}0.84$

$FFS = 75.4 - (0.0) - (0.0) - 3.22\ 〚(1.7)〛\ \text{^}0.84$

$FFS = 70\ mph$

Equation 11-2 adjusts the demand volumes from passenger cars to passenger car equivalents to account for trucks and recreational vehicles, as follows:

HCM Equation 11-2: $v\_p = (v * k * d)/(PHF * N * f\_HV * 〚f〛\_p)$

$v\_p = (62{,}900 * 0.089 * 0.52)/(0.95 * 2 * 0.89 * 1.0)$

$v\_p = 1{,}721\ passenger\ cars\ per\ hour\ per\ lane$

With use of the hourly ATR data that provides separate directional volumes, assumptions translating the daily flow to peak hour volumes can be removed:

HCM Equation 11-2: $v_p = directional\ v_{hour}/(PHF * N * f\_HV * 〚f〛\_p)$

Exhibits 11-2 and 11-6 identify the capacity curve for a freeway facility with an approximately 70 mph free flow speed. Exhibit 11-2 identifies that the maximum carrying capacity of a freeway segment with a free-flow speed of 69 mph is 2,400 vehicles per hour per lane. Exhibit 11-6 translates this flow into Level of Service and density, as shown in Figure 52.

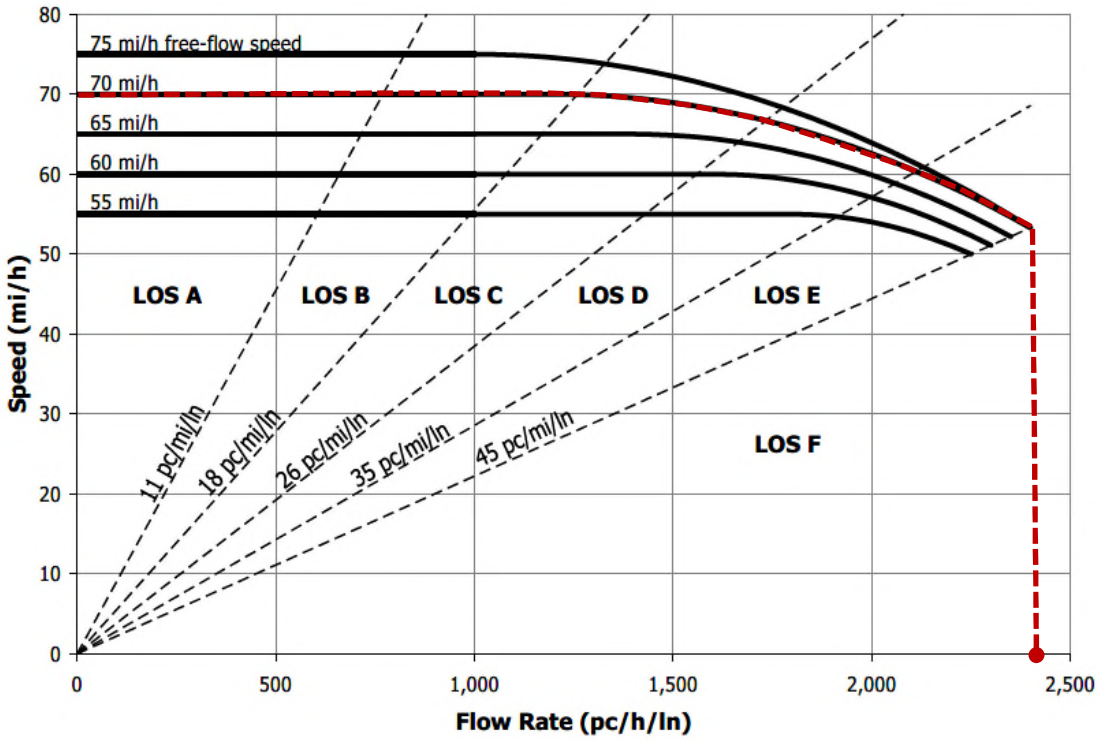



Figure 52. HCM 2010 Exhibit 11-6.

Equation 11-4 summarizes the relationship between the mean speed of traffic *(S, mi/h)*, demand flow rate *($v_p$, pc/h/ln)*, and Density *(D, pc/mi/ln)*.

HCM Equation 11-4: D = $v\_p/S$

Review of the hourly I-5 capacity plots throughout the festival dates (with 2016 volume profiles adjusted to 2019 volumes) shows that the corridor operates at up to 80% of its carrying capacity in the northbound direction on the corresponding mid-August Sunday during the noon hour.

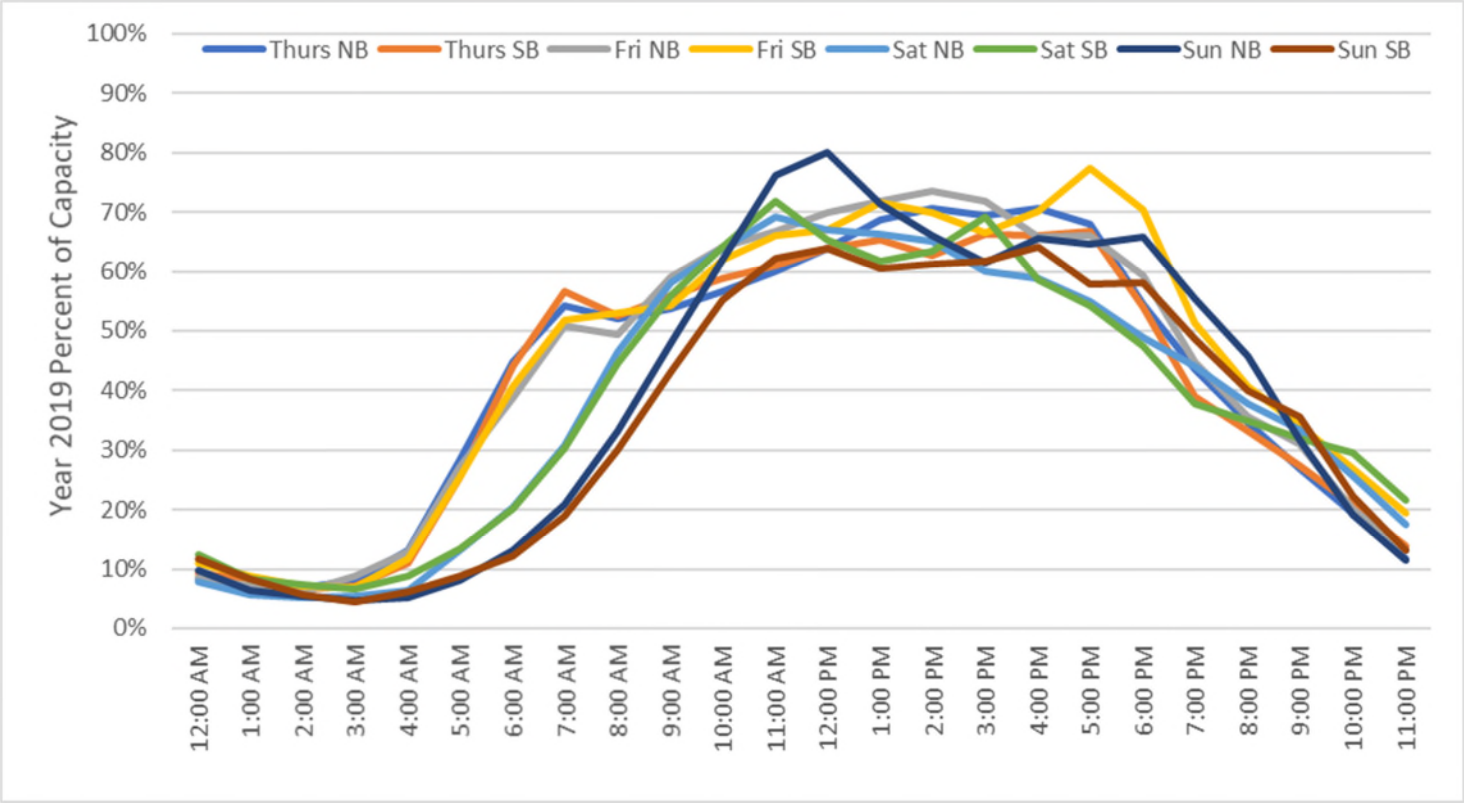



Figure 53. Projected Year 2019 I-5 Directional Mainline Capacity, Background Conditions (Near Talbot Road)
*Note that the background conditions shown reflect the 25,000 person event in Brownsville.*

Generally, this data shows that the I-5 corridor near the Site has a capacity of approximately 2,400 vehicles per hour per lane, and currently serves between 70% and 80% of its carrying capacity. Peak time periods on the I-5 corridor occur during the evening commute period on weekdays and around the noon hour on weekends.

Assessment of I-5 conditions was also prepared with the inclusion of event traffic to understand how the additional vehicles will change conditions on the corridor. The August 2016 traffic volumes were used within the baseline conditions; this double-counts festival impacts as the base volumes already include traffic from the Portland and Salem areas that were traveling to or from the 2016 Brownsville event and provides what is likely an overly conservative analysis of I-5 conditions.

The ability to access the I-5 corridor will be metered during the event egress periods by the segment capacity along the County Roads. The only nearby locations to access the I-5 corridor are the Ankeny Hill and Talbot Road interchanges. These interchanges/overcrossings also provide a connection to Jefferson and other communities to the east but will be limited to approximately 1,600 vehicles per hour that can access the ramp terminals. The peak Saturday egress demand of nearly 6,300 vehicles will require more than a single hour for event patrons to access the interstate system based on the event routes proposed.

Event traffic profiles reflecting the metered flow rates were overlaid on the I-5 volumes from mid-August 2016 that were increased to reflect 2019 conditions. The I-5 corridor analysis shows that the system will narrowly operate above capacity during the Friday evening commute hour in the southbound direction heading toward the event (assuming flows aren't metered due to typical congestion within the urban areas). This could further extend the entry profile into the 6:00 p.m. hour.

During the event egress periods there will be heavy I-5 on-ramp volumes at Ankeny Hill Road and Talbot Road. The on-ramp volumes can be accommodated on the higher-capacity I-5 corridor, but it is recommended that signage inform through motorists on I-5 to use the left lane.

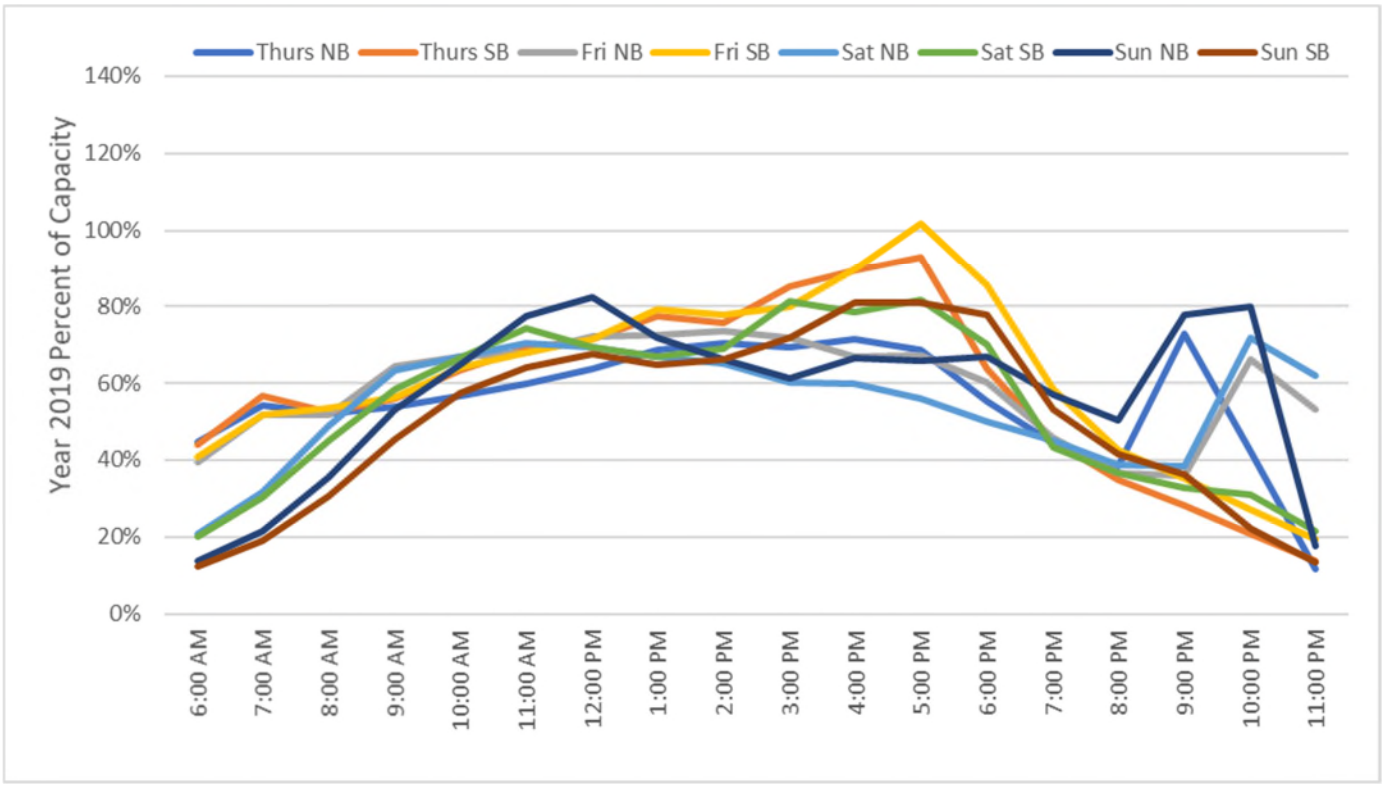



Figure 54. Projected Year 2019 I-5 Directional Mainline Capacity, With Event Conditions (North of Ankeny Hill) *Note that the background 2016 traffic volume profiles for I-5 include the approximately 25,000 person WCMF event in Brownsville. Addition of the proposed event trips as shown is double-counting a significant portion of the festival trips.*

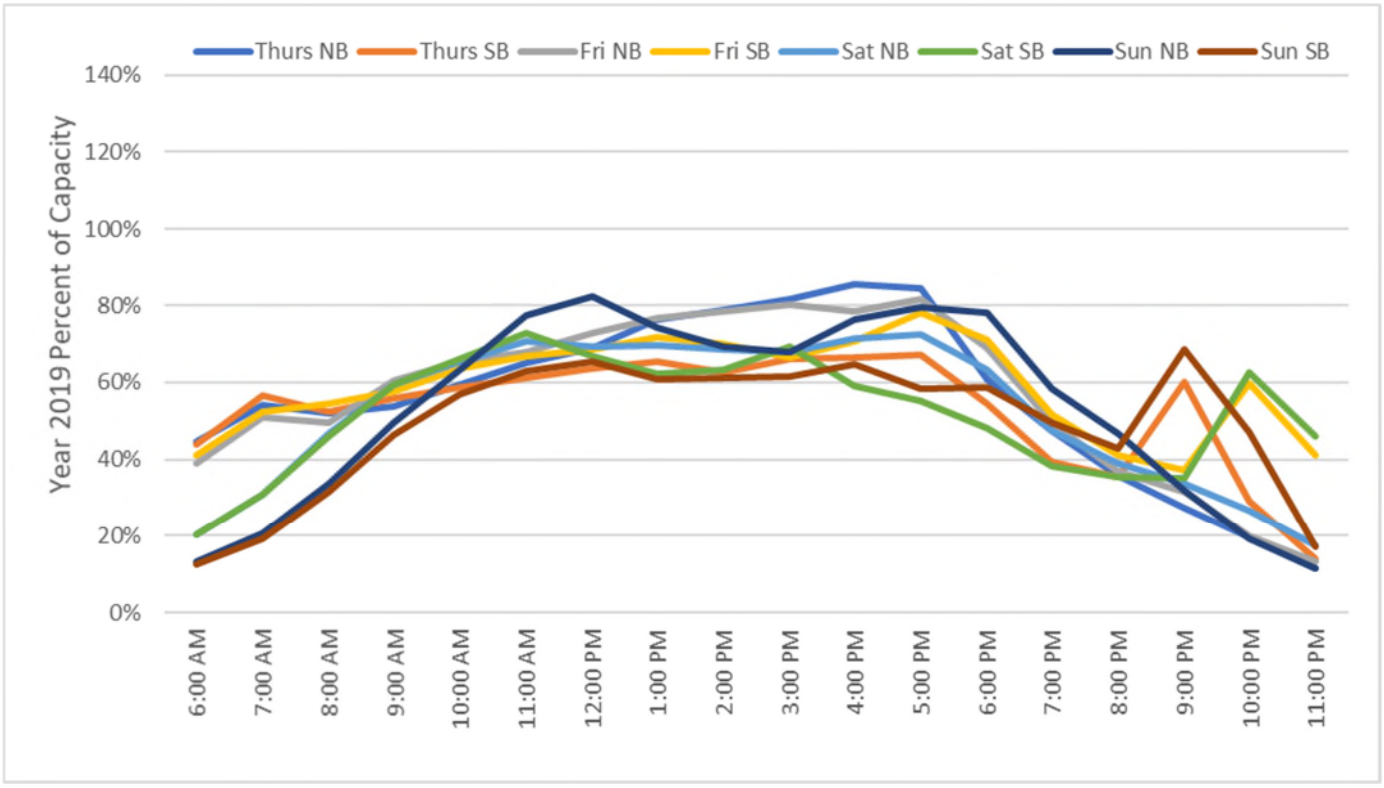



Figure 55. Projected Year 2019 I-5 Directional Mainline Capacity, With Event Conditions (South of Talbot).
*Note that the background 2016 traffic volume profiles for I-5 include the approximately 25,000 person WCMF event in Brownsville. Addition of the proposed event trips as shown is double-counting a significant portion of the festival trips.*

## Local Travel Accommodations

A critical concern expressed by area residents is the ability for people and standard dimensional vehicles (to include trucks) to access the wildlife refuge, area farms and rural homes, or to move standard-dimensional farming equipment between fields or to market during the August event. The proposed traffic routes for the festival will use both the Ankeny Hill and Talbot Road I-5 overcrossings to separate and manage event traffic.

Based on available historical data, peak event travel times will occur from 3:00 to 6:00 p.m. when the majority of event attendees arrive, and again when the events are concluded each day. Of the two interchanges, the proposed event routes provide the highest level of available capacity at the Talbot Road interchange for local traffic. During the festival ingress period the eastbound route along Talbot Road will generally be clear, as nearly all traffic will be westbound heading into the event site. Therefore, the contraflow travel from the west will generally operate unimpeded, albeit with reduced travel speeds given the increased presence of traffic on the road.

Westbound travel on Talbot Road will be impacted by the event, with speeds of 10 to 15 miles per hour expected during the peak times extending from the Talbot Road intersection with the Jefferson Highway to the event driveways west of Jorgenson Road. The proposed closure of the Talbot Road interchange to event traffic (while remaining fully open for local traffic with flaggers present at the ramp terminals) will allow area residents to bypass most of the event route queue, reducing the amount of time and length of travel for area residents within the event route to approximately one-half mile, or 3 to 5 additional minutes along this public County road.

Passenger car travel from I-5 along the Ankeny Hill Road exit will experience control delays from the flagging staff. During the event peaks the flagging staff will prioritize movements along the event routes to prevent I-5 back-ups and queuing, so while minor delays are anticipated for eastbound traffic entering I-5 at Ankeny Hill Road (avoiding the event routes) there may be additional delay incurred at the Ankeny Hill Road/Wintel Road intersection to cross the inbound event flow as this will not operate with its existing free-flowing turning maneuver (unless the contingency route is in place).

Westbound travel on Ankeny Hill Road will enter the queue with the I-5 Southbound exiting motorists. Travel along this route is expected to proceed at 10 to 15 miles per hour for approximately 1,000 feet, until local travelers can continue west along Ankeny Hill Road rather than into the event site along Wintel Road. If the contingency routes are active this would add more significant delay along the 2.5-mile shared route to the Liberty Road/Ankeny Hill Road intersection, adding approximately 15 minutes of travel time.

Alternative travel routes are available throughout the area (such as through the Delaney/Sunnyside/Hylo Road route to connect to Liberty Road north of the event area. Generally, travel in the direction of the event flows and along the event routes will add delays, and while traveling contraflow with the event will have limited travel impacts, traffic control at intersections that crosses the event routes may also add delays. These will be most impactive along the routes from I-5 as this is where the majority of the event patrons are expected to travel.

## Over-Dimensional Farming Equipment Travel Accommodations

The outreach conducted with the local farming community indicated that maintaining operations on Talbot Road was the more important I-5 crossing for area farmers. While the crops are variable in mid-August and may or may not require movement of significant heavy or over-dimensional equipment, the timing of the crops is weather dependent and leaves the possibility that east-west travel across the I-5 corridor may be required. Farmers within the area own, farm, or manage lands on both sides of the freeway. From our discussions with area farmers and review of the equipment we understand that if harvesting operations are active the movement of some of this equipment will require the use of both travel lanes even in the equipment's most compact "transport" configuration, as minimum equipment width can reach 19-feet.

The typical transport of this equipment involves flagging or use of pilot vehicles to cross the Talbot Road interchange, as the bridge width of approximately 23-feet would be inadequate for an over-width vehicle to pass an oncoming motorist. Other sections of Talbot Road outside of the bridge are also limited, as the shoulder slopes into ditches would not accommodate passenger cars or farming equipment.

The volume of over-dimensional equipment is expected to be low, likely involving five or fewer movements per day. However, with the limited availability of repair parts for this equipment, some farmers have expressed concern that damage from incidents with motor vehicles could result in costly impacts to their ability to manage area crops. With these expressed concerns, a management strategy is proposed to accommodate these equipment movement needs.

- A daily conference call-in number will be available to area farmers to coordinate the times of over-width equipment movements.
- A call-in number with the WCMF on-site Festival Management Center will be provided should any additional coordination or movements be needed during the day.

The following coordination strategies could be employed as required:

- It is recommended that overwidth equipment utilize the I-5/Talbot Road interchange rather than the I-5/Ankeny Hill interchange, as Talbot Road serves as the less critical interchange terminal and the more heavily used farming route.
- Ingress Period Movements
  - Eastbound movement of overwidth equipment avoid the 3:00 p.m. to 6:00 p.m. hours to the extent possible, as closure of Talbot Road during this peak event ingress period could increase the likelihood for back-ups onto the I-5 mainline.
  - This Eastbound travel along Talbot Road may require temporary use of the heavy equipment to park along the Henningsen Lane turn-out to relieve queuing prior to continuing east along Talbot Road.
  - Westbound movement during this the ingress period would be directed into the event queue along Talbot Road and would proceed west at the speed of event traffic.
- Egress Period Movements
  - Any westbound movement of overwidth equipment during peak egress period between I-5 and Jorgenson Road should occur prior to closing of the final performance.
  - Eastbound movements during this period would be directed into the queue and proceed with event traffic.

## STEP 6. TRAFFIC MITIGATION PLAN

The final step is to identify a traffic mitigation plan that addresses the identified deficiencies within the analysis. This step builds on the proposed route maps shown in Figures 44, 45, and 49, which were designed to avoid wildlife refuge and farming impacts from vehicles entering and exiting the event. These routes were also developed with contingency routes to deal with any type of incident during the ingress period, with the primary goal of avoiding queues onto the I-5 mainline. In addition to changes to the event routes, changes were also made to the internal configuration of parking areas and accessways.

In addition to the revised event routes, the following management strategies are recommended:

1. Traffic control along all primary ingress and egress routes will require free-flow movements to avoid excessive delays and queues. It will be necessary to have traffic control changes and flagging staff at the following locations:
   a. Ankeny Hill Road/I-5 Ramp Terminals (see Figure 56, Ingress Traffic Control)
   b. Talbot Road/I-5 Ramp Terminals (see Figure 57, Ingress Traffic Control)
   c. Ankeny Hill Road/Wintel Road Intersection (see Figure 58, Ingress Traffic Control)
   d. Ankeny Hill Road/Jefferson Highway Intersection (see Figure 59, Ingress Traffic Control)
   e. Jefferson Highway/Talbot Road Intersection (see Figure 60, Ingress Traffic Control)
   f. Ankeny Hill Road/I-5 Interchange (see Figure 61, Egress Traffic Control)
   g. Talbot Road/I-5 Ramp Terminal (see Figure 62, Egress Traffic Control)
   h. Ankeny Hill Road/Wintel Road Intersection (see Figure 63, Egress Traffic Control)
   i. Traffic control will be required at these locations to serve the primary event ingress and egress as noted. The Ingress Traffic Control should start when RVs arrive on-site on Thursday and should be in place when venue gates open daily, extending until the headline performance begins. Traffic control must remain on-site at the Egress Traffic Control locations to transition control plans into the Egress operations, remaining on-site through the clearance of the entire venue (approximately 1:00 to 2:00 a.m.).

   j. Changes to traffic control will need to be appropriately noticed in advance of the event to allow typical roadway users an opportunity to adjust their travel routes to avoid event delays or traffic control changes.

2. Contingency routes are required to provide additional queue storage area and prevent potential back-ups onto the I-5 mainline. Separate contingency routes were prepared for I-5 Northbound and I-5 Southbound that can operate independent from (but not concurrent with) the primary routes.
   a. To accommodate the I-5 Northbound Contingency Route via the Jefferson Interchange, PCMS messages will need to be pre-entered as an alternate. Remote connection to the PCMS will allow the traffic control center to modify the message once the decision to use the northbound contingency route has been confirmed with and coordinated through ODOT.
   b. Traffic control personnel will be pre-staged at the Jefferson Interchange northbound ramp terminal between noon and 8:00 p.m. each day of the event.
   c. Signage along the I-5 Northbound Contingency Route will be pre-installed with appropriate "Event" signing designations at all turns and along the route at evenly spaced intervals.
   d. To accommodate the I-5 Southbound Contingency Route via Ankeny Hill Road traffic control personnel will need to be pre-staged at the Ankeny Hill Road/Liberty Road intersection.
   e. Signage along the I-5 Southbound Contingency Route will be pre-installed with appropriate "Event" signing designations at all turns and along the route at evenly spaced intervals.
3. Any required coordination with Federal Highway Administration related to changes to traffic control at the I-5 interchanges will be coordinated through ODOT. *At this time it is understood from ODOT that this coordination is not required.*
4. Event ingress will impact two PNWR rail crossings, one on Buena Vista Road and the other on Wintel Road. As these are not primary event routes it is recommended that supplemental red or orange flags are located above the STOP signs at the crossings to increase the visibility and awareness of drivers. Based on input from ODOT Rail and ODOT Region 2 Traffic Engineers, it is understood that flaggers will also be required at each of the railroad crossings for each of the four days of the festival from 12:00 p.m. until 8:00 p.m.
5. WCMF will coordinate with the Ankeny Wildlife Refuge to prepare a security plan during the event (Thursday through Monday morning). It is anticipated that this will include additional enforcement staff to patrol the refuge area and viewing pull-outs.
6. An on-site impound lot will be provided to support the event. This will include tow vehicles for passenger cars and RVs to assist with typical maintenance, recovery, or impoundment needs within the festival boundaries. Coordination will be required with the Marion County Sheriff's office to ensure that all support and impound activities are conducted appropriately and that all limitations are fully understood.
7. A drop-off loop is proposed within the parking area. This will support taxi/ridesharing operations provided within the area.
8. Event flagging staff will need to provide adequate ODOT and Marion County certifications. Critical locations include the I-5 ramp terminals and event entry points. As identified within the Temporary Traffic Control Plans, illuminated flagging stations will be required at all identified intersections to illuminate the intersections and provide more clarity that temporary traffic control is taking place during nighttime and low-light conditions, to improve operations, public, and flagger safety.
9. Any new (temporary) driveways into the parking fields will require approval and permits from Marion County Land Use Engineering and Permits. This is expected to require gravel driveway

entrances over culverts (driveways beyond the culverts will not be graveled) and is expected to require 12 to 15 access locations to serve the various parking areas. All temporary driveways are required to be restored to previous conditions following the event.

10. Pedestrian fencing will be required around the pedestrian walkways and marked crossing areas will be designated to connect event patrons with the camping and parking areas south of Wintel Road and east of Jorgenson Road. It is imperative that staff are available to prevent people from walking along the roads. Pedestrian walkways to the venue will be covered with sawdust to clearly identify the walkway location.
11. With camping and parking purchase, informational packets will be provided that include information specific to the type of parking purchased. Information specific to camping hours, specific access routes, and procedures will be included within the packet and available on the website. This information will identify the overhead or dimensional clearance constraints along the surrounding roadways. Use of navigation systems will be discouraged in routing instructions intended for attendees. The informational packet will be submitted to Marion County Public Works Traffic Engineering staff for approval prior to distribution.
12. Dimensional warning signs and rail crossing signs should be supplemented with orange flags throughout the event period to increase awareness of the potential hazards.
13. Both Premium and General Parking traffic will be routed into the General Admission parking fields. Access to the Premium Parking area will be through the field to simplify driver decision-making when exiting the public roads.
14. Detailed event and traffic routing notification will be furnished to all property owners and residents located along and in the general vicinity of the event ingress and egress routes. The notification and mailing list will be provided to Marion County Public Works Traffic Engineering for approval prior to distribution.
15. The Festival Command Center will provide a conference phone number to area farmers for a 6:00 a.m. coordination meeting. A neighbor liaison number will also be available should any issues arise during the event.
16. Event Monitoring will be required throughout the duration of the event. The on-site Festival command system will include coordination with ODOT Incident Command units, law enforcement, Marion County Public Works, and traffic control staff. The purpose of monitoring is to identify if changes in traffic control or detours are needed to respond to incidents, emergencies, or congestion. Marion County staff will require full access to the venue as needed for monitoring purposes.
17. Portable Changeable Message Signs (PCMS) will be required on I-5 north of the Jefferson Highway Interchange and south of Talbot Road to provide the event monitoring and incident management teams with the ability to modify event access routes or to inform motorists of conditions. ODOT approval is required for all mitigation measures along this facility.
    a. During the event, PCMS will instruct southbound I-5 event traffic to use the Ankeny Hill Interchange (with travel to the west). As the contingency route continues to rely on this interchange no secondary messages will be necessary. PCMS will instruct northbound I-5 event traffic to use the Ankeny Hill Interchange as well (with travel to the east). Secondary messages will instruct event traffic to use the North Jefferson interchange should use of the contingency route be necessary.
    b. After the event the PCMS will instruct I-5 through motorists to use the left-lane. This will support the heavy on-ramp volumes leaving the event.
    c. PCMS may need to be located both on the shoulders and within the I-5 median to ensure that the messages are fully visible to drivers in both lanes.
18. Coordination with and approval will be required on the traffic control strategies with ODOT Highway, ODOT Rail, and Marion County staff. Detailed traffic control plans will be prepared and

approved subject to Marion County and ODOT review and timelines, with on-going updates and coordination to ensure that the plans reflect conditions at the time of the event.

19. If desired by Marion County staff, WCMF management staff are willing to work collaboratively with the County to review and approve of the ticketing platform build (essentially the number of tickets available for sale throughout the various seating categories) in compliance with the 30,000 person attendance cap and providing appropriate buffers for event support staff.
20. WCMF staff are also willing to provide the real-time person counts within the gated venue area that are provided hourly as an automated service through Frontgate. Demonstration and showcasing of these technologies can also be made available to County at the 2018 Brownsville event.

The following illustrations (Figures 56 to 63) show the recommended ingress (Red) and egress (Blue) traffic control routes. The arrows highlight the free-flowing maneuvers that will be implemented through flagging staff, cones, and other measures identified within the traffic control design plans.


Figure 56. Recommended Ankeny Hill Road/I-5 Ramps Event Ingress Control showing the non-conflicting I-5 Southbound and I-5 Northbound routing. Flagging staff will modify the intersection control and support local access movements while managing and monitoring queues.

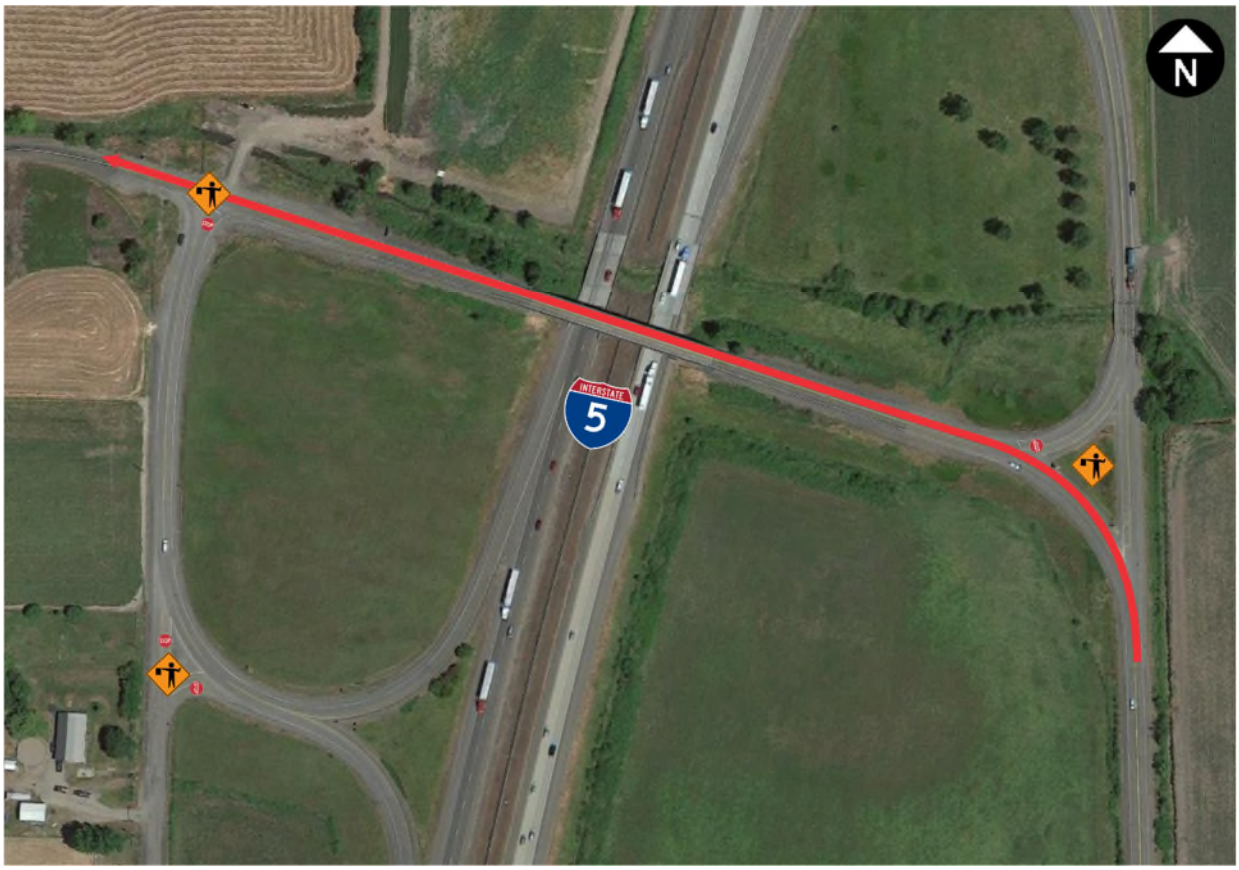



Figure 57. Recommended Talbot Road/I-5 Interchange Ramps Event Ingress Traffic Control. Route shows I-5 Northbound Route from Ankeny Hill exit via the Jefferson Highway. Flagging staff will be in place to manage queues from the I-5 ramp terminals and support local trips/farming equipment movements.

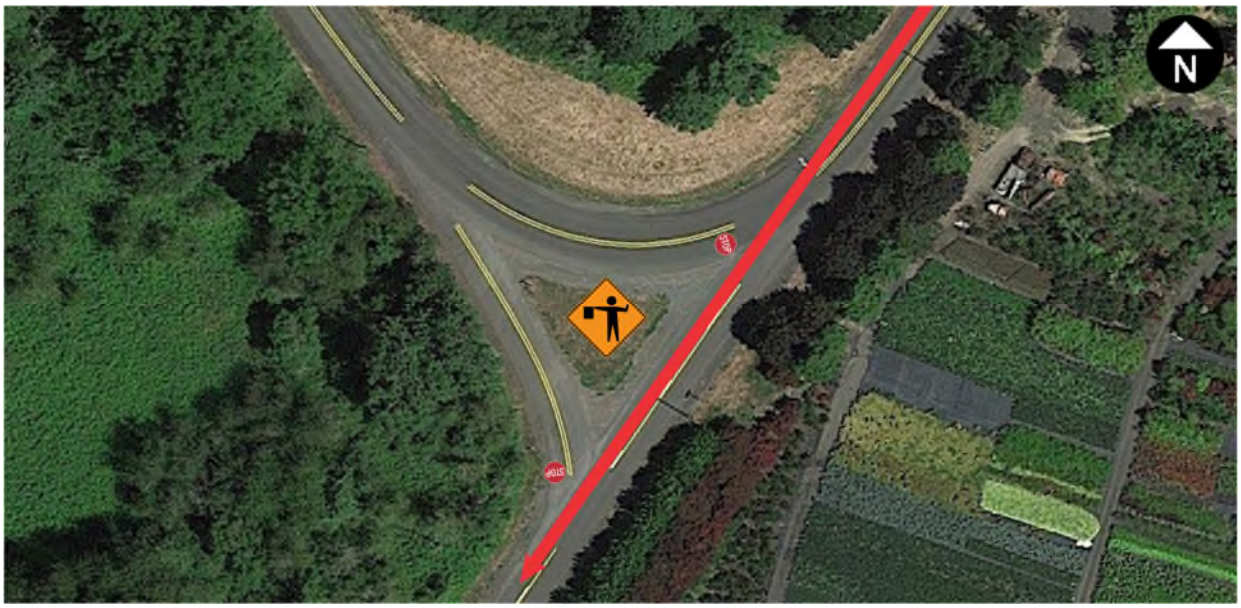



Figure 58. Recommended Ankeny Hill Road/Wintel Road Intersection Event Ingress Traffic Control. Flagging staff will modify the current traffic control to provide the southbound movement as a through movement and will initiate the I-5 Southbound contingency route around the Ankeny Refuge (if required) by reinstating the southbound right-turn as the primary movement.

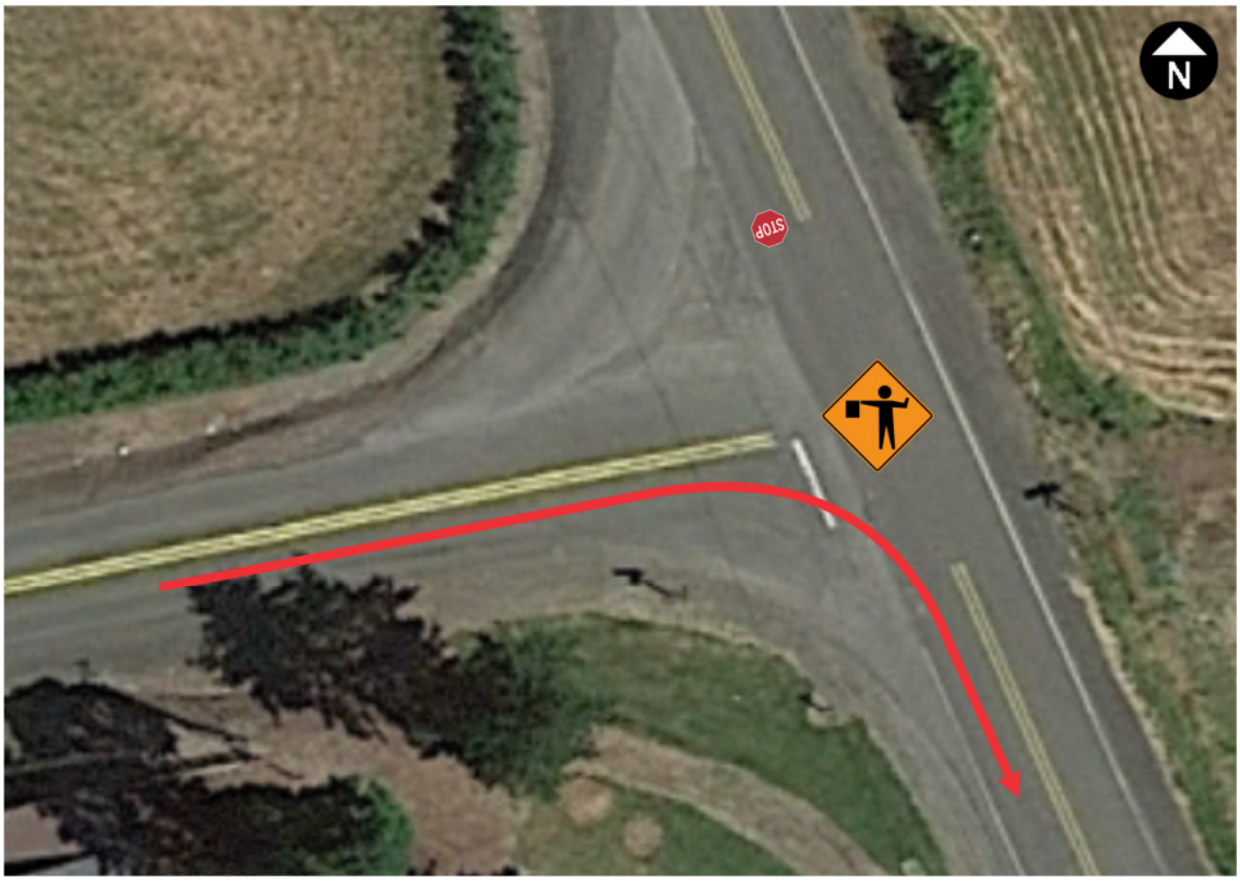



Figure 59. Ankeny Hill Road/Jefferson Highway Intersection Event Ingress Traffic Control. Flagging staff will be present to help manage queues that form on the Jefferson Highway in the southbound direction and to provide free-flowing right-turns to the primary I-5 Northbound Event Ingress Route.


Figure 60. Jefferson Highway/Talbot Road Intersection Event Ingress Traffic Control. Flagging staff will be present to help manage queues that form on the Jefferson Highway in the northbound direction and to provide free-flowing southbound left-turns along the primary I-5 Northbound Event Ingress Route.


Figure 61. Recommended Ankeny Hill Road/I-5 Interchange Event Egress Traffic Control. Flagging staff will be present with illuminated stations to help manage any queues that form.


Figure 62. Recommended Talbot Road/I-5 Northbound Ramps Event Egress Traffic Control. Flagging staff will be located with illuminated stations to help manage queues and assist with highlighting the primary routes.


Figure 63. Recommended Ankeny Hill Road/Wintel Road Intersection Event Egress Traffic Control. Flagging staff will be present with illuminated stations to manage queues and modify the traffic control for the event routes.

# TRAFFIC INCIDENT RESPONSE AND MANAGEMENT

In discussions with Kendal Weeks, ODOT District 4 Assistant Manager, it is understood that ODOT will be involved with traffic management related to I-5. ODOT's utmost concern is for safety and to prevent queuing of vehicles on the I-5 shoulders as Festival attendees exit the freeway at the I-5/Ankeny Hill Road interchange and the I-5/Talbot Road interchange.

As part of the Temporary Traffic Control Plan, variable message signs will be located along I-5, both north and south of the Venue to alert attendees on the appropriate exit to use when arriving at the Festival.

ODOT will have Incident Response (IR) staff and vehicles patrolling I-5 during the Festival to identify any traffic and/or safety concerns. IR will call the Festival traffic management staff should issues on I-5 and the I-5 ramps need to be addressed and resolved. The Festival traffic management staff will be responsible for updating and revising the variable message signs on I-5 as appropriate.

In the event that an incident on an I-5 ramp necessitates alternate routing for use by IR, this study has identified two alternate routes. The first route incorporates Jefferson Highway 99E, from the I-5/Jefferson Highway Interchange to Ankeny Hill Road, then west on Ankeny Hill Road. A secondary alternate route utilizes Jefferson Highway 99E, from the I-5/Jefferson Highway Interchange to Talbot Road SE, then west on Talbot Road SE across I-5 (See Figure 64).

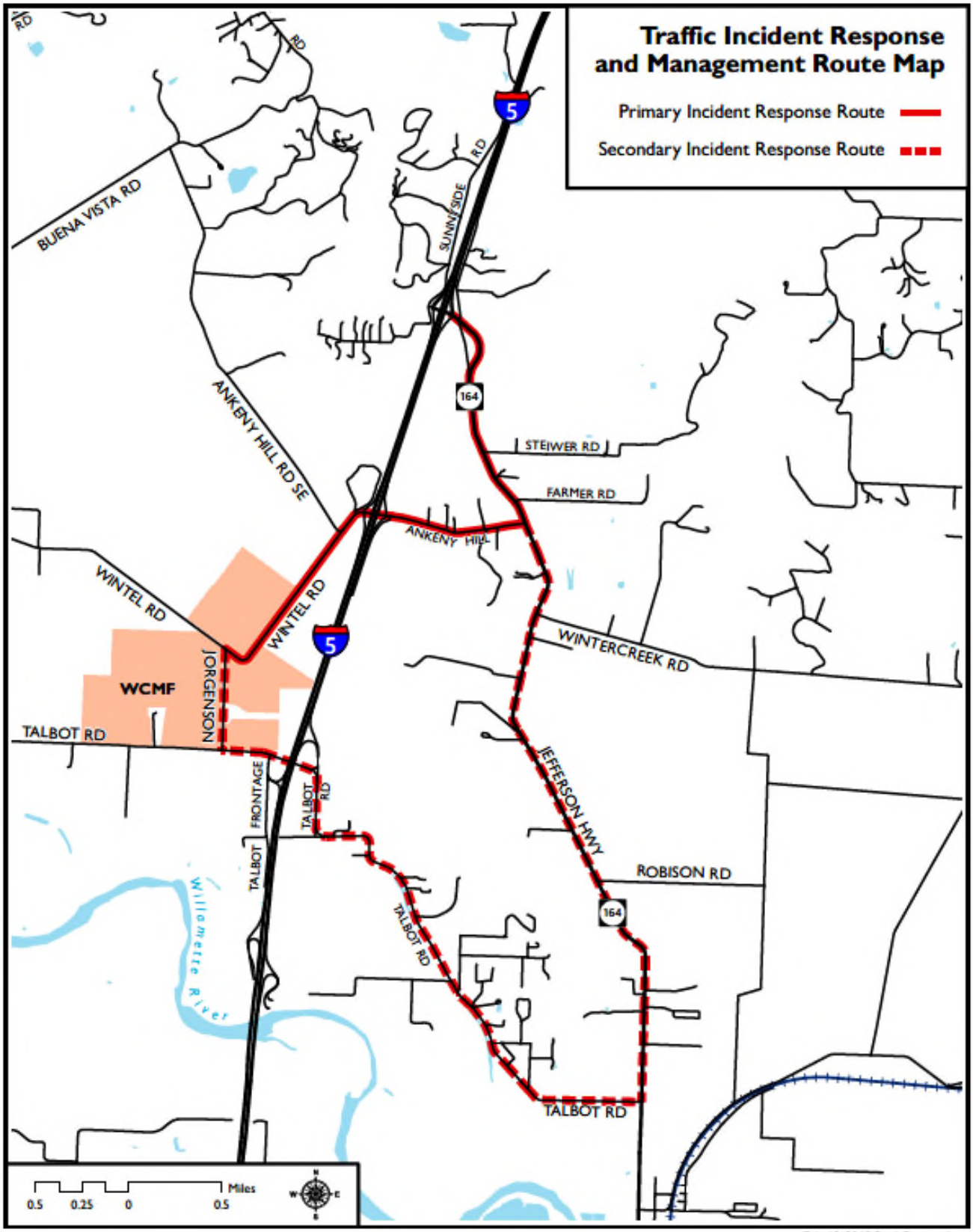



Figure 64. Traffic Incident Response and Management Route Map.

# NEXT STEPS

This Transportation Impact Analysis and temporary traffic control strategy has been provided to Marion County and ODOT staff for their review in response to the feedback received following the initial project hearing. Temporary Traffic Control Plans will be provided to Marion County under separate cover for review and comment. We trust that these materials provide the County and ODOT with the additional information requested and with the appropriate modifications and approval conditions to ensure the successful management of WCMF event traffic. Thank you for your time and efforts.

# CONCLUSION

Based on the information and analysis performed to produce this TIA, should the TIA, the proposed conditions, and the Temporary Traffic Control Plan be implemented as proposed by the Applicant, the Festival will not force a significant change in, or significantly increase the cost of, accepted farm or forest practices on surrounding lands devoted to farm or forest use, is compatible with existing land uses and will not materially alter the stability of the overall land use pattern of the area.

# ATTACHMENTS

1. Evacuation Plan
2. Public Outreach
3. Traffic Counts
4. Seasonal Adjustment Factors
5. Trip Generation/Event Data
6. Ticket Information
7. Documentation of Agency Coordination
8. LOS Operational Analysis Worksheets