CARS 5
Training Guide

Prepared for:

Kanas Department of Transportation

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This document is designed to assist new CARS 5 users in becoming familiar with the CARS 5 operator interface. It includes a guide for learning basic data entry and editing functions in the software. CARS 5 has additional features beyond what is included in this document. However, not all of the advanced features are discussed here, as this document is intended as a basic training guide to help new operators get started in using the program. This document assumes some familiarity with CARS and CARS-related terminology.

Note: CARS 5 is not compatible with Internet Explorer. Please use a modern browser such as Edge, Chrome, Firefox of Safari.

Objective #1: Becoming acquainted with the CARS 5 layout

CARS 5 offers a user interface built on a Google Maps background. Operators usually start at the Main Map. The left-hand side of the screen is a legend with checkboxes you can use to turn on and off the different types of icons you want to see on the map (closures, incidents, restrictions, etc.). As you check or uncheck the boxes, the map updates immediately to reflect the changes.

Figure 1: CARS 5 Header Bar

CARS 5 includes a header bar with controls for accessing the system menu drop-down and creating new events, as well as a means of displaying operator notifications. In the upper left corner, above the legend, is the System Menu drop-down button ☰ . The System Menu allows you to navigate through the different screens in CARS 5. The key screens it allows you to visit in CARS 5 are the Main Map and the Event List, but other options include: 511 Floodgates, Road Condition Reporting (TG-Segment), CARS-Metrics, Rest Areas, and KC Scout.

To the right of the System Menu button is the "Create Event" button ◆. Clicking on this button will open the event creation screen, where you can enter new event information. The event creation screen can also be accessed by R-Clicking on the map wherever you'd like to create an event.

To the right of the Create Event button, is the Operator Notification button ①. Clicking on it will show a list of recent notifications for expiring event (15 minutes before expiry time) and events that have passed their Next Update time.

On the far right of the header bar, next to the first name of the user currently logged into CARS 5, is the User/Group Settings button ⚙. Users can click on the gear icon and a context-sensitive menu of items will appear. Typical users will have three options in this list:

- <Operator's> Account Settings
- Change Password
- Log Out

Users who have CARS administrator permissions will see a fourth option in this menu:
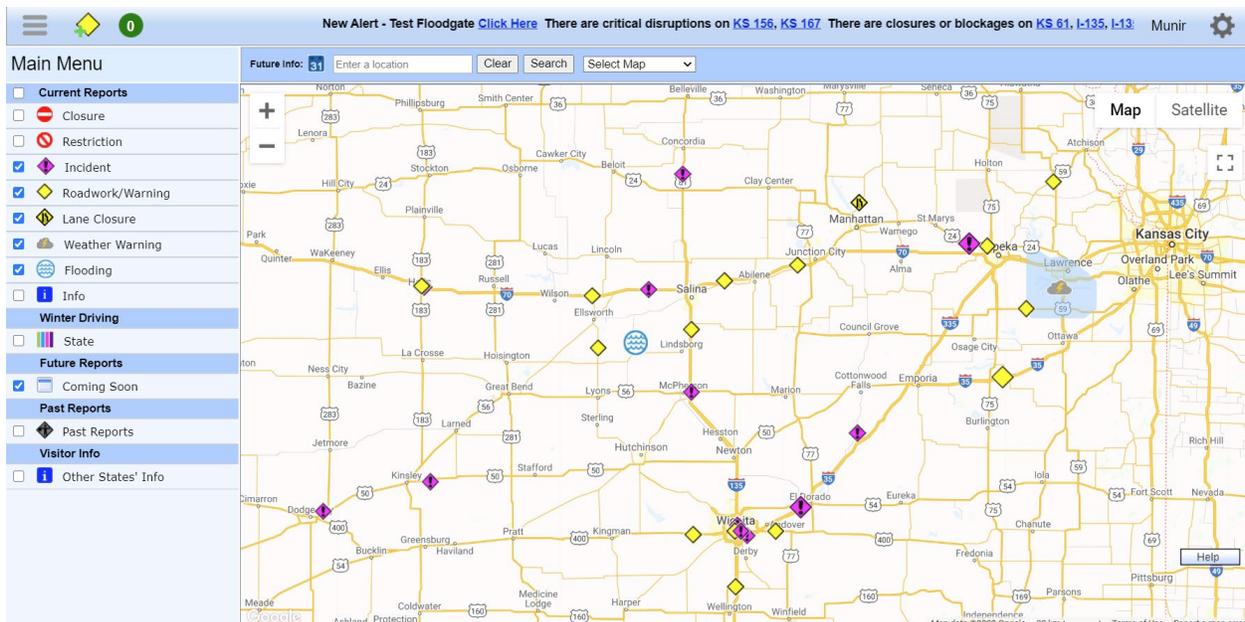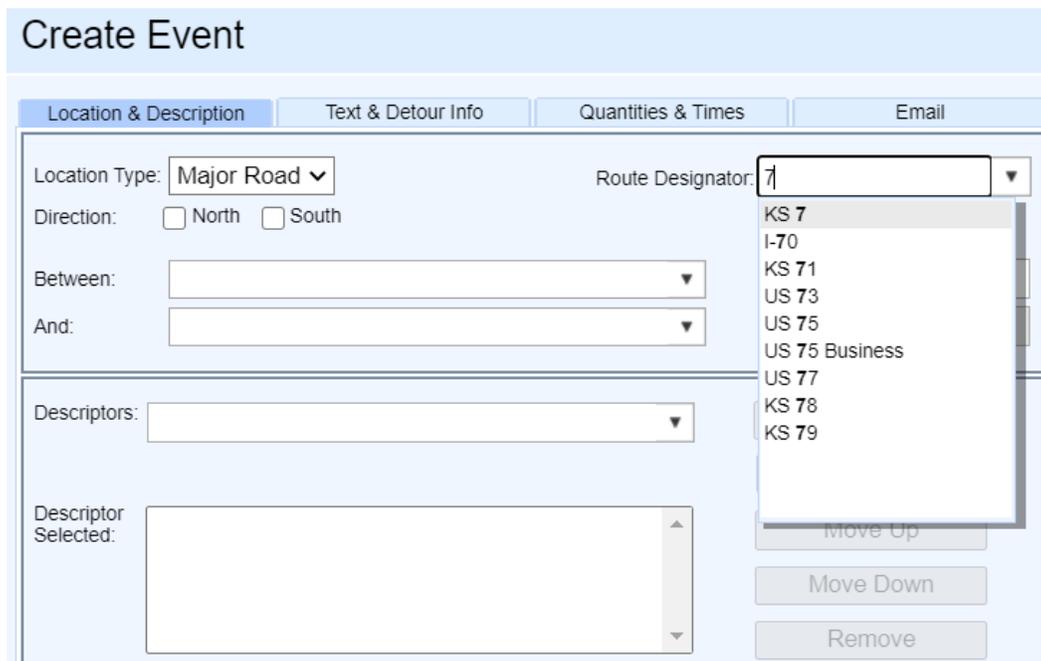
- <Operator's> Account Settings
- Group Admin
- Change Password
- Log Out

Figure 2: CARS 5 user interface

In CARS 5, you can move the map around just as you do on the Google Maps site. Click and drag the map to move it around. Double click on the map to zoom in. You can also use the zoom bar right of the legend to zoom in and out. The Map and Satellite buttons allow you to switch between the Google Map and an aerial photo view.

Objective #2: Creating events in CARS 5 using the Map

You can create a new event in CARS 5 by right-clicking anywhere on the Google Map. Even if you don't right-click exactly at the right spot on the map, you can still change the route designator, or the event's location on the route, on the event editing screen.

The route designator can be changed by using the route designator drop-down menu or by typing the route directly into the box. When typing, a narrowed-down list will appear beneath the box, containing only those routes that match the input. This list will be narrowed down further as more characters are typed. For example, typing "7" would yield a list including KS 7, I-70, KS 71, US 73, US 75, US 75 Business, US 77, KS 78, and KS 79. If the user continues entering "70," the list would finally be reduced to one matching entry, I-70.

Figure 3: Route selection by typing

A yellow pin will appear on the map at the selected point. If the user selects a secondary location, a purple pin appears on the map at the secondary location point, and the map jumps and zooms to show the entire extent of the event. If the event only occurs at a single point, rather than on an extent between two points, operators may remove the secondary location by right-clicking on the purple pin or by clearing text from the "And" field in the Event Editing screen. The event's location and extent can be changed by

clicking and dragging the purple and yellow pins along the route; by entering milepoints; by using the location drop-down menus; or by typing the event's location into the "Between" and "And" location boxes, as described with route designators. Events can either take place at a single intersection ("point" events) or affect a section of roadway between two defined points ("extent" events).

Note that when using the type-and-search feature for an event's location, the text field must be cleared in order to view the complete drop-down list of available locations. If any characters remain in the box, the resulting list will be filtered to show only the matching entries.
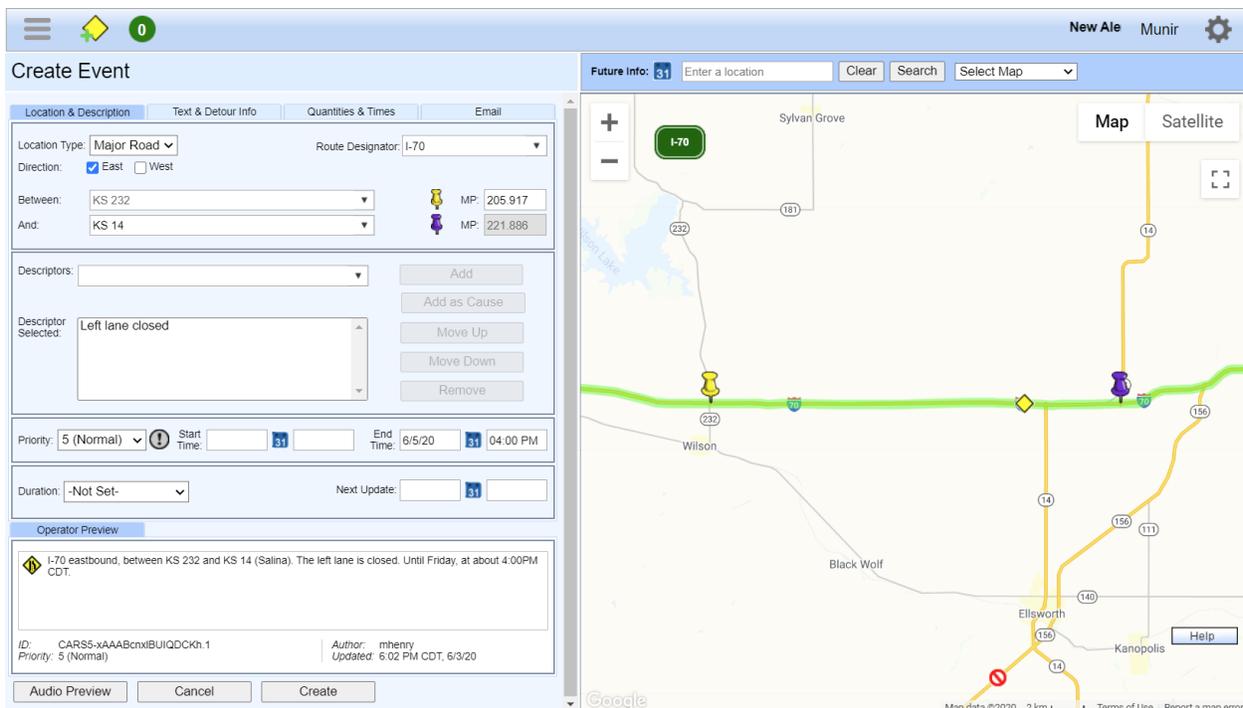

Figure 4: Creating a highway event in CARS 5

Figure 5: CARS 5 location pins

After selecting the route, the event's location, and the direction the event is affecting, you must enter an event description. Events are created by choosing *descriptors* (phrases

and causes). The Descriptors drop-down box will show the available phrases. Select the first phrase you want and click Add to add it to the description.

Alternatively, you can select phrases from the "Descriptors" field using the same type-and-search feature described for route and location selection. The more letters you type into the designated phrase field, the fewer phrases will match, and the list of matching phrases will continue to narrow down. At any point after typing the first three letters, you can scroll through the narrowed-down list and select the phrase you're seeking or continue typing to further narrow down the list.


Figure 6: Phrase selection by typing

The sequence of letters you enter can match any part of any phrase. For example, typing "close" could yield a series of closure phrases including "bridge closed," "center lane closed," etc. Each item in the narrowed-down list will use bold text to highlight the matching letter sequence. Only the first twelve list items will be immediately visible; if the list contains more than twelve matching phrases, you can scroll down to view all available choices.

Note that the text field will need to be cleared in order to view the complete drop-down list of available descriptors. If any characters remain in the box, the resulting list will be filtered to show only the matching entries.

You can choose one or many phrases to describe the event. Events must have at least one "headline" phrase, which is the phrase at the top of the list of selected descriptors. You can rearrange the phrase order by selecting a descriptor and clicking the Move Up/Move Down buttons. The Remove button allows you to take away phrases that you previously added to the description.

You can also add a phrase descriptor as a cause. When you do that, the phrase will be preceded by "due to" or "because of" in the description. For example, if you add "incident" as a cause, CARS 5 will add the words "due to a traffic incident" to your event description. To add a cause, you must have at least one other phrase in the description.
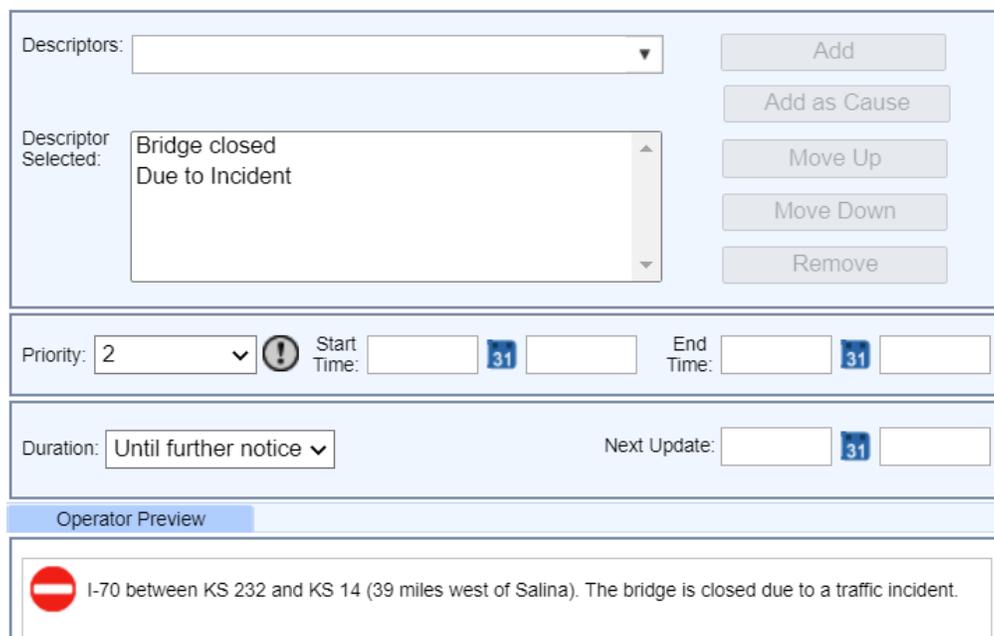
Figure 7: Selecting categories and descriptors in event description

The event's Priority—which is an indicator of the relative impact of the event on other traffic—will be automatically set by CARS 5 according to the first phrase of your event description. You can manually override the default priority when necessary using the Priority drop-down list. If you choose Priority 1—the highest priority—the circle to the right of the drop down will turn yellow, emphasizing the seriousness of the event. Priority-1 events are displayed with special icons on the map and are also displayed in the critical events list on the OneWeb public website. You can click the circle to reduce the priority to level 2 or use the drop-down to select any other priority. Priority 1 is usually limited to major, unexpected road closures.

You can set the event's End Time by choosing a predefined duration (1 day, 2 weeks, until further notice, etc.) or a by picking a specific date and time in the future. A Next Update Time can also, optionally, be added. If added, a notification will appear 15 minutes before the selected Next Update Time.

As you make changes to the event report, the Current Event Description at the bottom of the screen will update to show how it will be presented on the public web site and 511. For example, if you select the "road construction" phrase, the Current Event Description will be updated to read "Road construction work is in progress."

The **Text & Detour Info** tab allows you to add more information to the event. The tab is found at the top of the screen, next to the *Location & Description* tab. First, the Additional Audio Text box allows you to add free text to the event that will be announced on 511. After typing the text, you can preview how it will sound on 511 by clicking the Audio Preview button. It's a good idea to keep audio text as brief as possible, as callers prefer short, snappy messages on 511. The Additional Web Site Text box allows you to add more free text information that will show up on the web site only—not on 511.

The Operator Comment text box can be used for comments that will only be seen by other CARS 5 users. The My Group comment is used for comments that will only be seen internally by your user group (e.g., District 1.) Neither of these comments will go out over 511 or the web.

Figure 8: Audio and text message interface

You can hear an Audio Preview of how the entire event will sound on 511 by pressing the Audio Preview button. When you are finished creating the event, click "Create," and it goes out to the public.

Practice: Event Creation

Event 1: Road Construction

Create a road construction event affecting both directions of traffic on a state route of your choice. The road construction is happening between two named points on the road. Choose phrases to indicate that road construction work is in progress; the roadway is reduced to one lane; and there is a width limit in effect. The road construction project will end on October 1.

Event 2: Restriction

Create a restriction event that stretches between two mile points on the state route of your choice. Select the route, event locations, and event descriptors using the type-and-search feature. Phrase: width limit. The duration is "until further notice."

Add an operator comment.

Event 3: Future Event

Create a road closure event that begins on September 17. Choose any state route and select two points on that route between which the road will be closed.

Enter the following additional audio comment: The Oak Street Bridge will be closed to traffic for bridge resurfacing. Please use the detour.

Enter the following additional web comment: The Oak Street Bridge will be closed to traffic for bridge resurfacing. Please use the detour. Direct inquiries to the Field Engineering Office: 555-663-6361.

Event 4: Incident

Create an incident event. Choose any state route and one point on that route by dragging the pin. The event description should read as follows: A traffic incident is reported. The right shoulder is closed.

Objective #3: Creating local road events in CARS 5

CARS 5 features the ability to create an event on any road in the state, whether or not it is in the CARS database. You begin by choosing "Create Event" from the Header Bar. Then, pick "Other Road" from the Road Type drop-down menu. You'll also want to right click on the map to place the pin exactly where you want it.

Because local roads are not stored in the CARS 5 location database, you'll need to type the name of the road into the Route Designator box (e.g., "110th Street"). You can define a point event by filling in just the *Btwn/At* box. You can create an extent event by filling in both the *Btwn/At* and the *And* boxes. If you fill in just the *Btwn/At* box, it will come out as, for example, "On 110th Street at Main St " If you fill in both the *Btwn/At* box and the *And* box, it will come out in CARS 5 as, for example, "On 110th Street between Dogwood Avenue and Eagle Avenue." You can then fill in the city-related information to indicate what the nearest city is. Because there can be, for example, many Main Streets in a single state, it is important to add this additional information. You can indicate that an event is in, near, or within X miles of a particular city in the state.

Other than describing the location, creating an event on a local road is exactly the same as creating one on a state road.

Figure 9: Creating a local road event in CARS 5

Event 1: Flooding. Indicate that flooding has caused a road closure on some local roads that are near some Interstate on/off ramps. The duration is "until further notice."

Event 2: Construction Work. Create an event indicating that construction work will be going on this week on a local road going through a large town.

Objective #4: Creating an email notification list

When you create an event in CARS 5, you can automatically send a notification of the event to one or more e-mail addresses and/or preset email lists. Those email recipients will be notified when the event is created, modified, deleted, or when it expires.

To begin, select the **Email tab** at the top of the Event Editing Screen. To add an individual email address, type an email address into the text field next to "Add more here:" then press the **+** button. To add an administrator defined preset email list, select a list using the **Email List** drop-down and click "Add." To remove an address or preset list from the event's notification list, click the trash can icon next to the address or preset list. The Add and Remove functions only affect the notification list you are creating for the current event.

Figure 10: Email notification interface

To set your own Default Notification List, first populate the list, then click the **Make this my default** button. All addresses in the list will be automatically included in the email notification list for any new event that you create while logged-in with your username. To permanently remove an address from your default list, delete it from the list using the trash can icon and then click **Make this my default**.

When an event is updated, a message will be sent to each address in the notification list unless the CARS 5 operator modifies the list before pressing the **Update** button.

Practice: Email Notifications

Create a Construction event and add your email address. Once submitted, take a look at the alert that was sent to your email.

Objective #5: Becoming familiar with the CARS 5 Event List

The CARS 5 Event List allows you to see all current events, with a variety of sorting and filtering options. Events can be sorted by route, update time, start time, end time, next update time, author, phrase type, priority, event ID, source, and status. Choosing one of those options will reorganize the events in the list, and update the header bars (e.g., LAST HOUR) according to the sort type you chose.

Clicking on the event's header bar (the gray bar) will highlight that event, opening its description and causing the map to display that event. Clicking the black arrow next to the description displays more details about the event.
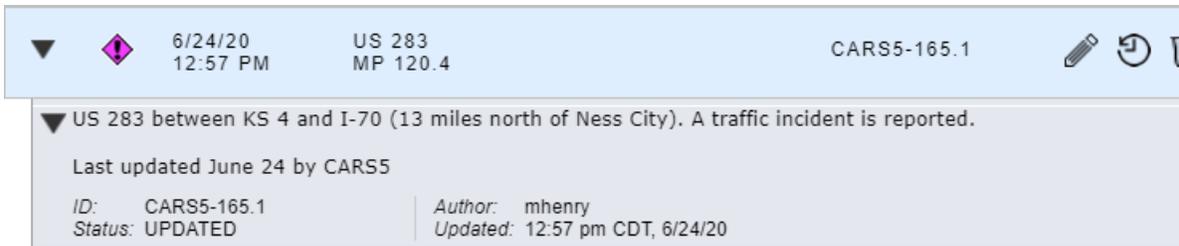

Figure 11: CARS 5 Event List

Figure 12: A closer view of the expanded event list

Objective #6: Editing & deleting existing events in CARS 5

Existing events can be edited or deleted directly from the Event List or the Main Map. From the Event List, click on the pencil icon in the event header bar to edit the event. To delete the event, click on the trash can icon.
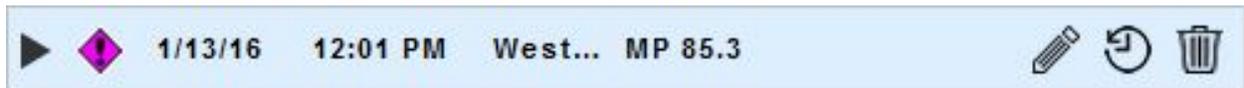

Figure 13: Event Header Bar

You can also edit or delete an event through the Main Map. Click on the event, then click the pencil or trash can icon in the pop-up box.
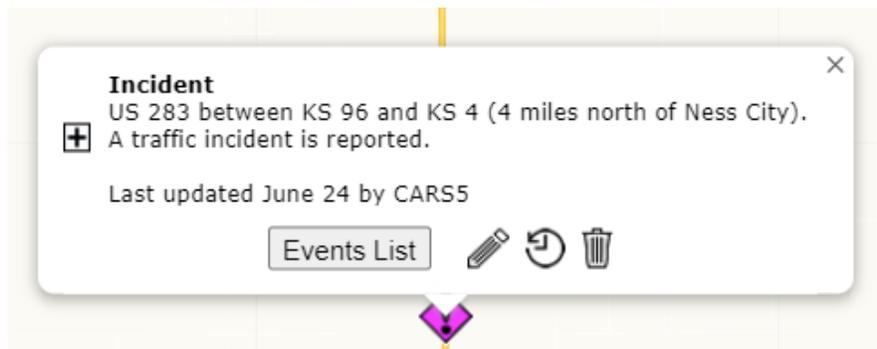

Figure 14: Event pop-up box

Objective #7: Building detours in CARS 5

Detours associated with an event can be plotted on the Google Map in CARS 5. The detour path will then be shown to the public on the traveler information web site, when a user hovers over the event icon.

To add a new Detour, click Add Detour at the bottom of the Text & Detour Info tab, and give your detour a name. Begin drawing your detour by right clicking on the map at your detour start point and then select either "Start on road" or "Start off road" to drop your first pin on the map.

Defining your detour by clicking "Start on road" is similar to using Google's "Get Directions" feature. You tell the system where the detour goes by clicking at a few strategic points along the road, and it uses Google Maps' "Get Directions" to figure out the most efficient path between those points. Click another point a bit further down the road and select "Continue on road" to drop a second pin on the map. The system will use Google Maps to find the path between those two points. You can mouse over an intermediary point along the detour segment you are currently creating, which will turn the cursor into a white circle. You can then click and drag this white circle to force the route to take another path.

Defining your detour by clicking "Start off road" and continuing on by clicking "Continue off road" allows you to draw your detour shape point by point without Google Maps "Get Directions" snapping your detour to a roadway. Going off road will allow you to draw detours independent of Google's roadway network. At any point along your detour, you can go off road by clicking "Leave road here" or you can go back on to the Google roadway network by clicking "Join road here."
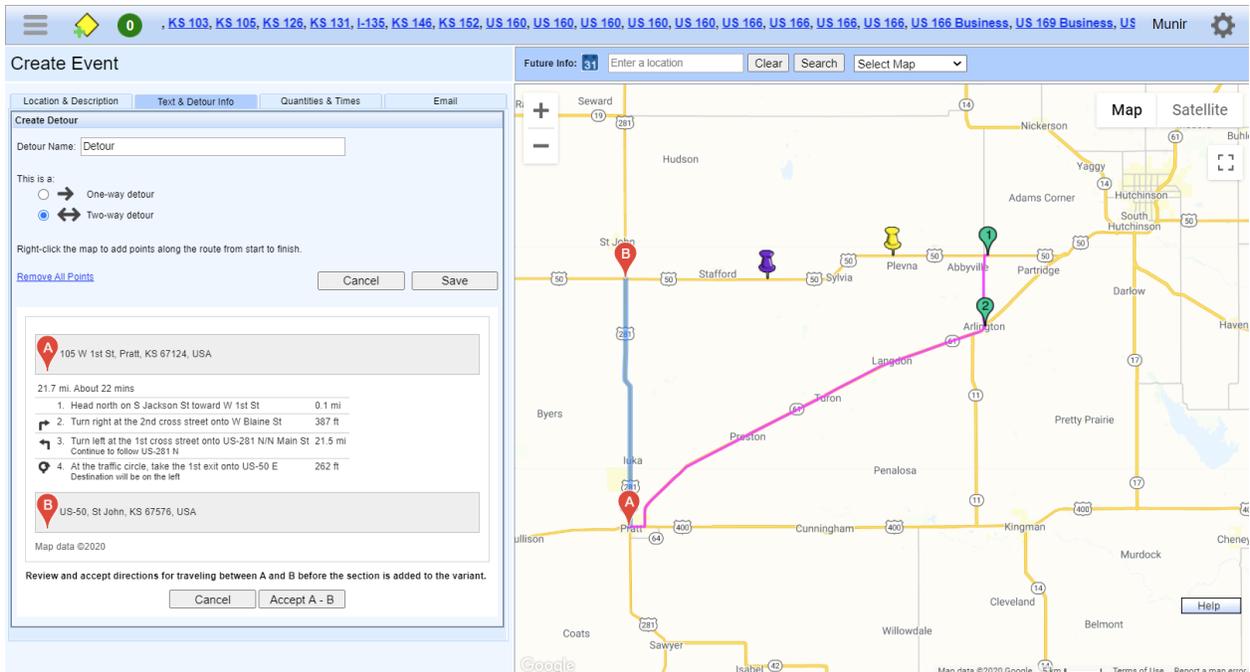
*Figure 15: Creating a detour in the event editing screen*

After you have made some progress with the initial portion of the detour, you save your detour so far by clicking the "Accept A – B" button. You can then drop another pin on the map by right-clicking and choosing "Continue on Road." That new segment will be appended to the previously defined detour. Again, click the "Accept A – B" button to progressively save your work. Saving your detour in multiple small segments in this way—rather than in one long segment—will make your detour easier to modify later. When you have your final detour ready, save your work by clicking "Save", and your new detour will appear in the Detour list.

You can also illustrate a detour by uploading an image file to CARS 5. Click the Attach button, then select a PDF, GIF, or JPEG file (no larger than 2 MB). When the file has been successfully uploaded, the filename should appear on the event creation screen. The filename will also appear in the final event description as a hyperlink in the event pop-up box. Other CARS 5 users, and users of the public web site, will be able to open the detour map by clicking on the filename.

Objective #8: Creating recurrent events in CARS 5

Some events, such as roadwork or intermittent road closures, will affect traffic only at certain times on some days of the week. Events can be created in CARS 5 with specific recurrent times in addition to a fixed duration.

To specify one or more recurrent time periods, begin by creating a new event or editing an existing one. Click on the Quantities & Times tab. You will then be able to select the days of the week during which your event will take place. Times can be entered by clicking inside the *From* and *To* fields, then choosing specific times (15-minute increments) from the dropdown selector.
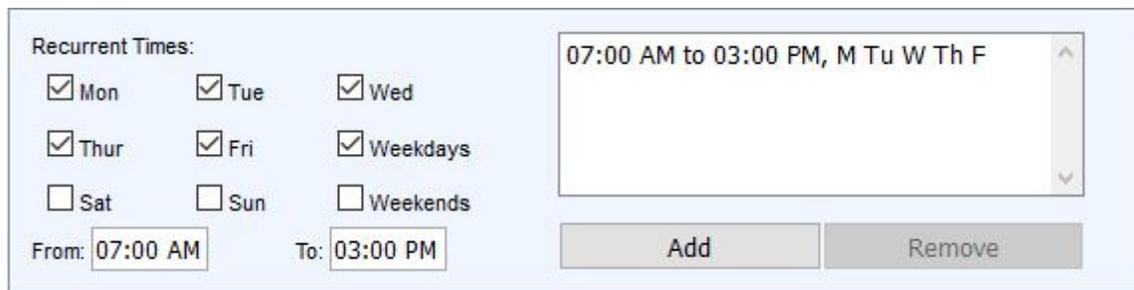
Figure 16: Adding recurrent times to an event

When you click the Add button, the days and times you have selected will appear in a box to the right. The times will also be added to the event description—for example, "From 7:00AM to 3:00PM on weekdays." Recurrent times will be displayed on the public web site.

To define an additional set of recurrent times for the same event (e.g. if roadwork will take place on weekday afternoons but also on weekend mornings), simply repeat the above process. Time periods can be deleted by highlighting the description and clicking the "Remove" button.

Practice: Event Creation

Event 1: Intermittent Road Closure Munir.henry@castlerockits.com

Create an event with the headline phrase "Intermittent lane closure." The closures will occur between 9:00 AM and 4:00 PM on Mondays, Wednesdays, and Fridays and from 6:00 PM to 10:00 PM on weekends.

Objective #9: Adding quantity phrases to CARS 5 events

Events that involve trucking restrictions or significant traffic delays will be most useful to the public if specific information is provided about those restrictions. As you learned earlier in this training, events can be created that use only standard phrases such as "height restriction." You can add to these simple descriptors by selecting quantity phrases on the CARS 5 event creation screen.

Begin by creating a new event or editing an existing one. Click on the Quantities & Times tab. Toward the bottom of the screen you will see a dropdown menu labeled "Quantities." When you select the type of quantity you wish to add, you will be shown the range of values that are possible. For example, a vehicle height restriction may range from 6.5 feet to 18 feet. Choose the appropriate quantity using the scrolling selector buttons. When you are satisfied, click the Add button.
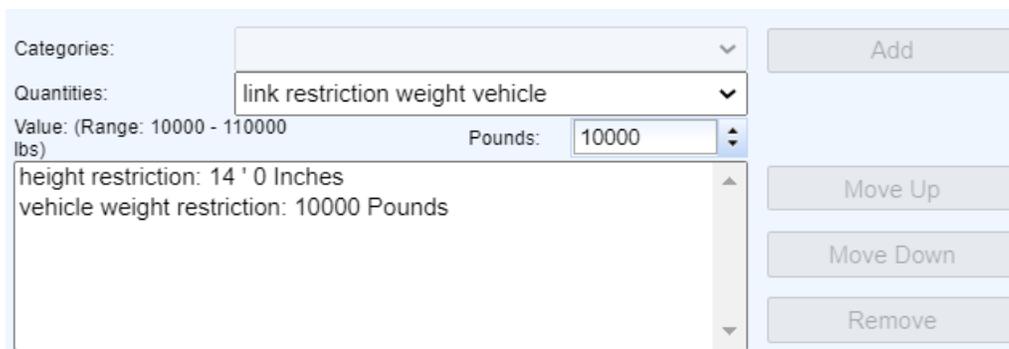
Figure 17: Adding quantities to an event

Clicking "Add" causes the specified quantity to appear in the resulting event description. You can add one quantity of each type to an event. To change the order in which they appear, highlight them in the box and press "Move Up" or "Move Down." You can click "Remove" to delete a quantity phrase. (Note that the "Categories" field is not yet active in this version of CARS 5.)

Practice: Event Creation

Event 1: Trucking Restrictions

Create an event with the headline phrase "Truck restriction." Specify a vehicle weight limit of 40,000 pounds and an axle count limit of 10. Set the event to expire in 3 days.

Appendix: FHWA Notification

The local FHWA office has a duty to stay apprised of unplanned road closures and traffic incidents. If you include the 'FHWA Notification List' in the Event-Email Notification, an email will be sent to the FHWA with the event information. Using the 'FHWA Notification List' will eliminate the need to call the FHWA for road closures as stated in the Maintenance Manual.

The 'FHWA Notification List' must be added to the 'Event – Email Notification' to make notification of various emergency occurrences involving the Kansas highway network. Select the 'FHWA Notification List' ->click the 'Add' button.

See FHWA Notification instructions below.

FHWA Notification Instructions

An FHWA notification is used to inform FHWA of unplanned road closures and traffic incidents which meet any of the following guidelines.

1. Road Closures due to snow, ice and high water.

2. Highway related incidents which impact highway operations due to natural disasters such as floods, earthquakes, and tornados. A terrorist incident involving a highway facility.

3. Any incident that causes a major highway (K, US & I-routes) to be closed for more than 4 hours except where the public has been notified in advance via newspaper, radio, social media, or television announcements.

4. Any incident that causes major damage (in excess of one million dollars) to the highway network.

5. All bridge failures or emergency closures of regionally important structures. Indicate if the closure is related to a bridge inspection.

6. Any incident involving hazardous materials, fire, explosion, or release of hazardous materials.

7. Any incident that creates national media attention.

8. Any chain reaction incident where more than 10 vehicles are involved, regardless of the number of injuries.

9. Any incident involving the deaths of 6 or more people or any incident involving a school bus resulting in serious injuries or deaths to school children.

   Note: When the event expires the FHWA will receive notification that the event expired.

Appendix: Descriptor List

Abandon Vehicle	Fog
Alternating lane closures	Gusty winds
Automated traffic signals	Hazardous materials spill
Blowing dust	Height restriction
Blowing sand	High winds
Blowing snow	Incident
Bridge closed	Intermittent lane closure
Bridge construction	Lane closed
Bridge demolition work	Law Enforcement activity
Bridge maintenance operations	Left lane closed
Center lane closed	Left shoulder closed
Closed	Length restriction
Closed to thru traffic	Local Event
Construction work	Long term road construction
Crash	Major road construction
Debris on roadway	Mobile maintenance operations
Downed power lines	Mudslide
Dust storms	Narrow lanes
Entrance ramp closed	Opposing traffic
Exit ramp closed	Paving operations
Flagging operation	Pedestrian in roadway
Flooding	Permanent Height Restriction

Permanent Length Restriction

Pilot car in operation

Posted Bridge

Slow moving maintenance vehicle

Railroad crossing repair

Smoke hazard

Reduced to one lane

Special event

Reduced to three lanes

Stalled vehicle

Reduced to two lanes

Storm damage

Rest area closed

Traffic congestion

Restricted bridge

Train derailment

Right lane closed

Truck restriction

Right shoulder closed

Utility work

Road construction

Vehicle fire

Road maintenance operations

Width restriction

Road marking operations

Wildfire

Roadside spraying

Work in the median

Roadway sweeping

Wrong way driver

Roundabout

Electronic toll lanes

Shoulder closed

Inspection lanes

Toll lanes

Toll plaza