



# SunGuide Software User's Group Meeting Minutes



Date: July 5, 2018

Time: 2:30pm-3:30pm EDT

## Agenda:

### Topic

Item 1: Intersection Locations

### Led By:

Tucker Brown, SwRI

## Attendees:

Robbie Brown, D1  
Justin Merritt, D1  
Luis Ruiz, D1  
Ray Mikol, D1  
Pete Vega, D2  
Jason Summerfield, D2  
Christopher Jones, D2  
Aven Morgan, D3  
Kevin Mehaffy, D3  
John J. McFadden, COT  
Marlon Chin Shue, 595  
Mark Lucas, D5  
John Hope, D5-CFX

Mark Laird, D6  
Jared Roso, D7  
Jessica Ogden, D7  
Mike Crawson, D7  
Charles Keasler, D7  
Tucker Brown, SwRI  
Derek Vollmer, CO  
Mark Dunthorn, CO  
Frances Ijeoma, CO  
Karthik Devarakonda, CO  
Jennifer Rich, CO

## Discussion:

### ITEM 1 Intersection Locations

This meeting is being recorded for the purpose of taking meeting minutes.

**Derek:** We have talked about this before and we will talk about it again. This was brought up by District 2 at a Change Management Board meeting probably about a year ago. They need it because they were having to enter in multiple events when there was a crash at an intersection on the arterial roadways. We are trying to find a way to only have one event when we have a crash at an intersection like that.

**Tucker:** We are in a single point phase for events and single roadway direction on the lane map per location. So if you have intersections with multiple events, an event per direction for tracking purposes. The problem with that is for performance metrics. So you are opening four events for what is really one event.

The idea here is to get the ability to configure an intersection as an intersection in an individual location. We are trying to get a location configuration that matches what we are currently doing but allows you to have multiple approaches. It has a roadway, approach and direction. Essentially you could rotate these around to match what the intersection looks like. You can switch these around to mimic the roadway configuration you have. You can also define what each of the lane maps look like (turn lanes, travel lanes, etc.).

Inputting all of these intersections will be a pain. So we did an exercise where we were able to extract the intersection data from the Navteq shape files. The idea here is that we would just tell it a roadway from point A to point B and it would pick up all of the intersections along there, what the approaches were, directions, roadway, lane types and it will put it together to let you see what it would look like. The user would have to review it and tell it which intersection to include. That way the user can make it the way they want. Then the tools will import the configuration into the system. That way you are not trying to do each one of these manually as you are trying to configure the system. In the future if you just wanted to add one intersection, you could probably use the operator interface. If you pick up a new roadway that have to do multiple intersections, it might be easier to use a tool and tell it the roadway limits. The tool is to be used initially but if you want more in the future you could use the tool again. Are there any questions about the configuration of these?

**Aven Morgan:** So is the intent that the wheel would be static and you could pretty much just turn it?

**Tucker:** So the degree heading will allow you to configure where each one of those approaches would go into the intersection. Once you set it, the initial configuration would be

provided in the event details. You can probably still change the lane mapping to how we do it now in the Operator Map.

**Derek:** Do you remember any multi movement lanes in the Navteq shape files? Like a left turn or turn type of lane. Are we going to try to capture that here or have it represented as a turn/left type of icon?

**Tucker:** That is up to you, that is just a new lane type to us. We will need to define that for Flatis For this particular one we would leave that out. But if we want to add that in later it would apply both to the regular roadway with a single lane map or this concept which has multiple lane maps per location.

**Derek:** I'm not sure if it is a benefit to have two movements defined in your configuration or not. District 2 do you have any comments on that?

**District 2:** No concerns.

**Tucker:** One way or another we would have to tell it to make it a turn lane or a straight lane.

**Derek:** I would do this, if it says it's both I would just assign it turn lane as a default.

**Karthik:** How will you configure the shoulders? If you wanted to configure the left shoulder. How do you understand by looking at the diagram there which is the left shoulder?

**Tucker:** The approach is always in the middle so left and right would depend on what side of the diagram is on. The direction of the approach is always to the middle.

**Karthik:** Could you give an example?

**Tucker:** So if you were looking at the very top part of the image, the top of the intersection details the middle would define what the direction of travel is. So in this case the direction of travel from the bottom to the middle of circle the left shoulder would be on the left.

**Karthik:** How does it appear in the event chronology?

**Derek:** That is a different slide, lets continue and let Tucker present the event detail slides and then come back to his second question.

**Tucker:** Normally you set the county roadway and direction, that's when you get into reference point and offset. That's where you get down to the intersection details. They will be embedded just like point base locations. You would be able to get down to the roadway and direction via a filter. The rest are going the opposite direction you would get a point base for the intersection and that would determine what your lane map would look like. They would be embedded together so you could select from either one. The difference here is that

a single intersection may appear in multiple lists. The reason for that is because of the approaches here you are setting a roadway and a direction for each approach. Regardless of the roadway and direction you set, it should appear in the offset list for you to select from. These intersection locations will appear in more than one list. Lane blockage selections will still apply to each approach and you can set them individually. You can grab any additional lanes and move those into the lane blockage diagram. The response plan will need to take into account that we are generating certain messages for that intersection. It's probably going to have to take into account the approach slot and maybe multiples. We may have to look into approaches and intersections by locations.

**Mark Laird:** If you have bi-directional roads going into the intersection, do you draw two things side-by-side? And can you put them in the same rotation?

**Tucker:** I'm assuming you mean they have Northbound and Southbound traffic and both sides of the roadway have North and Southbound traffic? The idea here is you would only draw the North from one side and the South from the other. If we need to we can probably offset these. In this diagram, we have the Northbound and Southbound look like they are facing each other but in reality, they would be offset and maybe the turn lane would line up.

**Mark Laird:** For example, you could have something that is leaving the intersection and backing up to the intersection blocking it. Maybe it still works.

**Tucker:** Whatever happens in the intersection, essentially part of the intersection is blocked and a certain approach is not able to do a certain thing. We were thinking whatever that is could be shown in this diagram. If we need to, we can offset these to make them look more realistic. Or if we need to draw outbound lanes on them we can do that too.

**Aven Morgan:** I think offsetting the opposite side would help out.

**Tucker:** The more lanes we add and the more offset we do the larger it will get which might not be an issue and they might just be scrolling through to see the lane blockages. So, if that is not a problem, the intersection is going to get a lot larger.

**Aven Morgan:** When you say to reference the approach, this is strictly for incidents to occur directly in the intersection, right? This is where it would have the most use. My question is, once the incident is created and the EM location is configured for the opposite side of the approach, would it automatically account for that?

**Tucker:** In this case, the EM location is dead center of the intersection. You will still have a point based incident and it will be the middle of the intersection. If there are problems that don't occur directly in the intersection they may cause backup into the intersection. They are

still blocking particular approaches. Another suggestion instead of making it an offset, we could make a new lane type. Essentially an outbound lane.

**Derek:** That might be too much clutter and become too complicated.

**Tucker:** I was trying to get an offset without moving the images over.

**Derek:** What if you just moved the images over?

**Tucker:** A four lane makes sense but what about a five lane? Tell me how we would shift those.

**Derek:** That's a great question, I am not sure.

**Tucker:** Yes, that is where it gets complicated.

**Pete:** I guess the thing is to think about how much it occurs. Do we deal with something like that on a case by case basis and keep it as simple as we can?

**Derek:** I agree with keeping it simple. I'm okay with not doing an offset at all and just showing the approaches the way they are. That's the simplest thing. However, I would like to know how I am supposed to know which roadway is which and what direction from the picture here.

**Tucker:** That's true and we have that information there. Does anyone have any thoughts for showing roadway and possible directions?

**Karthik:** We could have a compass showing the roadway.

**Mark Laird:** Could we take that description and drag it where we want in this? Or is that too difficult?

**Tucker:** How would we do it?

**Mark Laird:** Above, below or alongside one of these approaches I guess.

**Derek:** What about a hover over tool tip?

**Mark Laird:** That would be fine.

Although if we put a compass rose oriented for the direction, it would be helpful to go with the rotation of the roadways.

**Tucker:** That was the thought of being able to define the degrees.

**Mark Laird:** So you have the ability to adjust the approach?

**Tucker:** Yes. The other option here that could be interesting is if part of the configuration you were able to “screenshot” part of the map and tag it along with the location configuration. When they pop up to the right of where the lanes are configured, you also have a tiny inset version of the map that shows you where you are.

Would it be helpful to actually see a map to orient yourself? The map orientation would always stay north but you would be able to see the different roadways coming in. Basically, the lane map would match up with that.

**Mark Laird:** I think the people doing the configuration would find it intuitive.

**Tucker:** As part of this configuration, they would choose a spot on the map, take a snap of it and associated it with the lane map.

**Mark Dunthorn:** We are looking for the road name, are we going to see that on the map snapshot?

**Derek:** Would you be able to see the road names on it?

**Tucker:** I would think so. At each zoom level, whatever roadway is there you would be able to see the roadway name.

**Derek:** It would help with the name but doesn't mean it helps with the direction. I guess the orientation of the map would give the direction.

**Tucker:** The map of the direction would be North is up. We could always inset a compass into the image if we need to.

**Derek:** What is the complexity associated with doing something like you described? It sounds like it is difficult.

**Tucker:** Being able to take a snapshot of the map is not something we have looked into.

**Derek:** So, they would have to manually go around and take the screenshots?

**Tucker:** Yes, but I am just trying to think of things that would help orient the map.

**Derek:** I understand but you already put in the approach angle which is helpful. So this thing could be rotated counter clockwise if that was the way the intersection was oriented on the map.

**Tucker:** Yes, and it was designed to match up like that so I guess we could put the roadway name and an arrow in the direction of the roadway. At the bottom of each lane map you can tell the way it is and the direction of travel it is going into the intersection.

**John Hope:** I would hope that what we are looking at would only be used for less than one percent. The EM locations Tucker you mentioned earlier that you would build some sort of process that would automatically generate the EM locations for the intersections based on the mapping data. I have a lot of questions associated with that:

- How frequently would the intersections be generated? There are a lot of intersections that aren't of interest. How will that be regulated?

**Tucker:** Conceptually, you would give it a section of roadway that you are interested in and it tells you all of the intersections along that and there is a point that is between when it is generated and when it is being reviewed. The person can choose what they want. They can also review the lane map. If they get the configuration how they want it there before importing it into SunGuide.

**John Hope:** So, you do have to go intersection by intersection even though it is an automated process?

**Tucker:** It is an automated process to generate what we think you want and then a review would be necessary to confirm that is what you want.

**John Hope:** Do you have any concepts or designs of what you're talking about, the selection of intersections?

**Tucker:** No, we have done that part yet. We have done the point where we have generated a roadway report of intersections and got all of that information out of it. That is as far as we have taken it. If there are too many locations and you don't want to sort through them, you could tell it that and let it put it in. Then everything is automated but then you would have to go back in and tell it what you really want.

**John Hope:** It would be good to specify at a certain level of density of intersections or if there are roadway levels of categories that you could select. Like if you only want US routes or something to that effect.

**Tucker:** You are defining the roadway that you want it on. It would give you the particular roadway and all along that roadway here is every intersection along that roadway.

**John Hope:** That leads me to my next question:

- When it comes to the mapping data, it doesn't name the roadways like Navteq names them. There is a discrepancy and that is why in SunGuide you have to specify what you want the roadway names to be. If you are drawing that from the mapping data, there may be a difference.

**Tucker:** The overall roadway might be named differently but underlying information such as county and direction will be consistent which are the two main pieces under the top roadway. You can tell it what you are generating it for and give it the SunGuide roadway name. Now you are down to the reference point and the offset which can be generated from the Navteq data. The reason why you would review it is because it might not give you the

name you want but it will give you a description of what it is. If you don't like the description then you would be allowed to change it.

**John Hope:** I absolutely want a tool especially if you can generate these automatically. If you have a tool that could speed up the labor, that would be fantastic.

**Tucker:** I agree that there will be a matching issue of naming conventions and that's why I don't think we can do a full automated process. There has to be someone to review it to confirm and approve the information.

**John Hope:** Down the line I imagine we will have to reuse this tool over and over again every time the map is updated. I think we are going to want to run this again and find the differences to update it accordingly. Doing this intersection by intersection is so painstaking.

**Tucker:** I agree. We are bound by the Navteq and SunGuide shapefiles. If we could try to do some matching there it might be helpful. We have found instances where the Navteq data is slightly off things like that are out of our hands. But you are right the tool is not something just for this particular release, it would be used in the future.

**John Hope:** Even if it would have the ability to have different aliases for the roadway, we could maintain that list.

**Tucker:** It might be something we would have to develop with the Districts. Give them the initial tool and have them give us feedback and go from there. We might have to go through different iterations to find out what it is generating vs. what the Districts are needing and using.

**Derek:** I agree, it will be helpful. The issue with the roadway names is tricky because you also have roadway name changes along the same roadway which makes it difficult. But trying to find something that will help map the roadway name to the other locations that come from the map data would be fantastic. Were there any more questions about these parts?

**District Question:** With regards to the orientation, I believe it was mentioned that operator would reorient the intersection. Is that correct? Does that orientation become the new orientation or is it just for that particular event?

**Tucker:** You are able to re-orient it in the configuration not in the event details dialogue. In the event details dialogue you could have a remove lane similar to how the lane blockage configuration is currently. We wouldn't allow shifting of the approaches in the event details dialogue.

The other thing to account for is reporting. The existing reports for event locations all look the same. It would pick up these new intersection type locations but the difference is since we have multiple roadways and directions as part of these locations it would pick them up and report on the intersections related to it. Would that be desired behavior or should we do new reports for intersection specific things?



**Mark Laird:** For performance reports, we would not want to count it twice if you selected multiple things but otherwise when selecting a roadway and direction, I think I would want it to show up. Performance measures essentially are just counting events, right? It wouldn't show up multiple times would it because it effected multiple roadways in that report, is that correct?

**Tucker:** Correct.

**Derek:** I am not hearing any other comments or questions.

**Karthik:** I still have a question regarding the shoulders. Are you able to add a left shoulder to the roadway which is pointing to the bottom of the page? In the event details?

**Tucker:** You would grab a shoulder icon from the right and drag it over to whatever approach you want to add it to. The operator can add it if they want to.

**Karthik:** How does it appear in the event chronology?

**Tucker:** In terms of the blockage? Usually a blockage description shows up in the event chronology. The same description (no lanes blocked or lane blocked) will show up in the event chronology.

**Derek:** Your blockage description would be the roadway, the approach, and which lanes are blocked?

**Tucker:** yes, and I guess it is questionable if we want to say each approach and what the blockage of that approach is or just do the ones that have blockage.

**Derek:** Only list the approaches that have blockage is what I was thinking.

**Tucker:** Yes, or say no lanes blocked.

**Derek:** I am okay with either way. Does anyone have an opinion on that?

**Mark Laird:** I am okay with only having the blocked ones but need to ask Alex. Is there a separate chronology for each approach?

**Tucker:** Right now, it is a single chronology. But do you want multiple? I was leaning towards single.

**Mark Laird:** I was thinking from a QC perspective it might be difficult to parse it if it is a single one.

**Tucker:** If you are going from that approach, you probably want multiple. You also want a defined template of roadway direction and a lane blockage description.

**Mark Laird:** I don't think we are trying to parse on each one but maybe looking to see that everything got cleared. So that if they clear one at a time, we would be looking for a match of the description of the roadway.

**Tucker:** If all you are looking for is the clearance then one would have to say "no lanes blocked" if it is a single line.

**Mark Laird:** What happens when you start clearing one at a time?

**Tucker:** if you do it as multiple ones and you have to put the blockage for each approach, you will have five chronology entries per save as opposed to one that just lists all the blockages. It is not saving each approach individually. It is one for what the current lane blockage is.

**District 1 Question:** Would it make sense to add intersection time? We are seeing more and more roundabouts. I'm not sure if there would be a difference if there is a roundabout or just a regular intersection.

**Tucker:** That is an interesting one because you have approaches and now you have the potential to block the roundabout.

**Derek:** That sounds like a different concept.

**Tucker:** I am not sure how to do that. You can use these in a roundabout but you could only do the approaches, not the inner part of the roundabout.

**Derek:** How many roundabouts do you have on your Routes of Significance? Those are the arterials that we are starting to manage. On your major arterials, do you have any roundabouts?

**District 1:** I think there are but I am not positive. They are adding more all the time.

**Derek:** That they are. But for one thing, this would not capture those because when the query gets ran for the Navteq data, its only looking at signalized intersections. It's not actually looking at roundabouts. I don't know if you could get that information out of the data set.

**District 1:** It appears to me that you could get data because when the roundabout is blocked it blocks certain movements and that's how you would input it into this event. Eventually it will block all of the movements.

**Derek:** I am not sure how to handle that at the moment. I say we start with signalized intersections and later on get a roundabout concept figured out.

The ConOps is out for review so please add your comments into the SharePoint version. Let me know if you cannot access the SharePoint site.

Meeting adjourned around 3:29 PM

**New Action Items:**

**Action:**

**Responsible Person:**

Ask Alex about including blocked and/or no lane blockage on the report. What is the preference.	Mark Laird
Review the ConOps	Districts