KITTELSON & ASSOCIATES, INC.
TRANSPORTATION ENGINEERING / PLANNING
610 SW Alder Street, Suite 700, Portland, OR 97205 P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: January 12, 2017

Project #: 20651

To: Dayna Webb
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045

From: Susan Wright, P.E., and Kristine Connolly

Project: Highway 213 and Beavercreek Road Alternative Mobility Targets

Subject: CAG Meeting #1 Minutes

On January 5, 2017, the first Citizens Advisory Group (CAG) Meeting for the Highway 213 and Beavercreek Road Alternative Mobility Targets project was held at the Oregon City's City Hall. *See Attachment 1 for the Meeting Agenda.*

The meeting began with introductions, and Susan presented the project. *See Attachment 2 for the presentation slides*. The advisory group provided comments throughout the presentation. These comments are summarized below.

- Damon suggested that it would be helpful to have a representative from ODOT at future CAG meetings.
- Laura introduced the background of the project
    - There are a few locations in the City where solutions present themselves but the City cannot afford to implement the solutions
    - This project was designed to set aside time with the community to collectively discuss solutions
    - In this case, there is a capacity problem and the solutions are not financially feasible
    - Development is stunted without a resolution to the problem, so we are looking at alternative mobility standards
    - Most trips through the intersection do not start or end in Oregon City, so the burden is unfairly placed on the city to resolve the capacity issue
- Susan pointed out that an interchange solution at the intersection was removed though the TSP update because it was determined not to be feasible
    - Accepting a higher level of congestion would allow the City to continue planning a solution

  - Note: Alternative 1 would require maintaining a northbound exclusive right turn deceleration lane. Corrections will be made to future exhibits.
- Comments on Alternative 1:
  - Mike: concern with left turns onto Maple overfilling the left turn lane.
    - The third receiving lane in this alternative would help alleviate that issue
  - Rick: seems like a short-term solution to a long-term mess
  - Dan: did you look into extending the existing southbound left turn lanes? Could the third receiving lane become a dual left onto Maple? What is the AM peak traffic impact? Do future conditions take into account ITS and connected vehicles?
  - Christine: fear that the capacity solution will be cancelled out by future development
    - Volume projections assume full buildout of development/redevelopment
  - Christine: need to take the cottages into account. Additionally, when there is a crash or landslide, there are no parallel routes available for people to avoid the congestion.
  - Damon: It would be beneficial to move the lane closer to 1st. The WB to NB right turn doesn't have any runout—extending the merge would improve flow. The 3rd receiving lane allows space for queuing, which will alleviate the issue with rear ends from people making the southbound left taking gaps without looking for vehicles stopped ahead. Perhaps the 3rd receiving lane alone would be beneficial without the 3rd southbound left.
    - Dan: a 1200' extension of the WB to NB merge has been studied. City to share drawings with Kittelson.
  - Bill: overall growth may be 2% but rural areas are experiencing higher levels. How many crashes were red light runs? Consider red light cameras.
    - John: cameras have been considered but they increase rear end crashes. Speed is more of the issue.
  - Henry: move the entry/exit to shopping center further south? Pay attention to pedestrian crossings. There was a recent fatality at the intersection. Contra-flow lane? Morton road should be extended.
  - Bob: this is a major intersection in the county, but it is outside of the urban growth boundary. This alternative will not keep up with growth. Need to spend more money to come up with a solution that solves the long-term problem.
    - Susan: Preferred solution will need to be adopted in the TSP before funding can be sought
    - John: $5-10M solutions seem obtainable and could be funded through SDC's. But larger project would have to be state-driven. Can we live with congestion for a longer portion of the day?
- Comments on Alternative 2:
  - Everyone agrees to discard this alternative
- Comments on Alternative 3:
  - Renate: it doesn't seem like there is enough space between signals

        - Susan: the distance would need to be fine-tuned to store the number of vehicles arriving each cycle. Kittelson to distribute a video of how this innovative intersection works. Other DOTs are implementing this solution in multiple locations along corridors.
    - Luke: this is better for pedestrians since it does not increase crossing distance as much as other alternatives. Is there an opportunity for looking into a shared use path on Beavercreek instead of the existing bike lanes?
    - Dan: eliminate pedestrian crossings on the north side and enhance them on the south side? Keep slope in mind for the displaced left turn crossover.
    - Christine: Morton Road has the 2nd largest landslide on 213.
    - Mike: is the propose storage for the displaced left turn signal within a curve? With this alternative, storage for the left turn onto Maple is reduced
- Comments on Alternative 4:
    - Henry: Beavercreek has a need for left turn stacking.
    - Michelle: Why didn't the TAG recommend this alternative?
        - Susan: this was mostly due to the cost of impacting the northwest corner
    - John: City is hesitant about both Alternatives 3 and 4
    - Dan: consider shifting the centerline of Beavercreek south to avoid geological hazards on north side.
        - Susan: this would require shifting east as well, which would impact developed land
    - Committee recommends continued analysis of Alternative 4
- Comments on Alternatives 5-7:
    - Susan: note the negatives in the comparison chart. Alternatives 5 and 6 create 2 intersections for vulnerable users to traverse instead of 1.
    - Damon: Alternative 6 is functionally useless—it directs people too far out of their way. Consider a solution somewhere between alternatives 5 and 7. Was a traffic circle considered?
        - Susan: since this is an ODOT facility, the footprint of the roundabout would be too large and impactful
    - Renate: suggest keeping an interchange on the table. Alternative 7 seems to have the least impact.
    - Christine: does Alternative 6 leave room in the future to have lower cost improvements?
        - Susan: other bottlenecks in the area make an interchange at this location less effective
    - Committee recommends keeping a full tight interchange on the table
    - Kelly: TSP has 2011 data. Have you looked at current 2016 v/c? Kittelson to run 2016 counts in Synchro. Why spend $25M to be back at the same LOS we were at in 2011?
    - Laura: asked ODOT and County if they had funding to support the project, and they responded in the negative.

        - Susan: it is a risk for the City to put an expensive solution in the TSP without funding. There is potential for a hybrid between short-term and long-term strategies: implement alternative mobility target until there is regional support for a roadway improvement. The preferred alternative from this project could be a starting point.
    - Rick: timeline for implementation?
    - Bob: inefficient infrastructure costs businesses money—delay is a cost to industry

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MEMORANDUM

Date: January 3, 2017

Project #: 20651

To: Dayna Webb
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045

From: Susan Wright, P.E., and Kristine Connolly

Project: Highway 213 and Beavercreek Road Alternative Mobility Targets

Subject: TAG Meeting #1 Minutes

On December 14, 2016, the first Technical Advisory Group (TAG) Meeting for the Highway 213 and Beavercreek Road Alternative Mobility Targets project was held at the Oregon City's City Hall. *See Attachment 1 for the Meeting Agenda.*

The meeting began with introductions, and Susan presented the project. *See Attachment 2 for the presentation slides*. The advisory group provided comments throughout the presentation. These comments are summarized below.

- In addition to the intersection of Highway 213 and Beavercreek Road, Lidwien pointed out that the entire stretch of 213 from Beavercreek to I-205 did not meet standards. The intersection of Highway 213 and Redland Road was included in the jug handle project design but has not yet funded. Lidwien said the modeling assumed this project and still failed to meet standards. John Replinger suggested that the TSP be reviewed to determine what was concluded at Highway 213/Redland Road. John Lewis was unsure but thought SDC's were being collected for the Hwy 213/Redland Road project.
- Delay at Hwy 213/Beavercreek Road is affecting zone changes and development near the intersection, as well as larger projects farther away.
- Dayna asked whether the TAG would be open to an evening meeting on April 20th.
- The culvert outfalls on the northern leg have eroded and created concern. ODOT is working on a long-term solution. The cost of this solution would be considered in intersection alternatives.
- Oregon City sees the Holly Lane improvements as a significant benefit to congestion. However, the community is opposed to any changes to Holly Lane which would impact properties. The Holly connection would change travel patterns through the Hwy 213/Redland Road intersection.
- John Replinger to send 2040 volumes.

- There are TDM measures in place at Clackamas Community College. The regional travel model already takes regional TDM efforts into account in the forecast.
- The County did not adopt the Beavercreek Concept Plan. The City would need to take the lead on constructing/implementing the connections in this plan.
- Alternative 1
    - Avoid shifting the highway to the west where there is a landslide area
    - Would intersection improvements require ADA updates?
    - Third lane could enhance issues with weaving exiting the intersection, despite signage.
    - Safety concerns make this alternative unfavorable with ODOT
    - Would need to maintain an exclusive northbound right turn lane for safety
    - Vulnerable users have a tougher time traversing a wider intersection
    - The triple left turn would be a difficult maneuver if future bus service utilizes that movement.
    - Is there a way to make this alternative safe? Possible to limit the intersection to 2 turn lanes off-peak?
- Alternative 2
    - Avi interested in investigating a second quadrant road serving the eastbound left turn that would wrap around the shopping center.
    - A storage facility development was just approved where the quadrant road connection is shown for Alternative 2. If the connection is moved north, there is an issue with right turn safety. If moved south, travel time will further increase.
    - It would be difficult to make a left turn into businesses north of the connection due to the increase in oncoming traffic on the quadrant road.
    - The Fir/Beavercreek intersection has operational concerns, including bus stops.
    - Increase cost for retaining wall and right-of-way.
    - Clarify in memo why this alternative is infeasible.
- Alternative 3
    - ODOT concerned with close spacing of signals if the cross-over signal would be considered a new signal rather than part of one large signalized intersection.
    - Storage at the left-turn signal may require widening and earthwork, impacting the geologic hazard area.
    - KAI to distribute video simulation of Alternative 3 signal interaction and queueing, look into shifting east to utilize existing pavement, and provide some explanation of how other DOTs are implementing displaced left turns.
- Alternative 4
    - As drawn, Alternative 4 is impactful to the northwest corner of Hwy 213/Beavercreek Road
    - Would impact TriMet, as bus stop would have to be west of Fir Street
    - Need to provide a clear picture of the geologic hazards in northwest corner
- How would an alternative be funded? Is there a possibility of cost-share with ODOT?

- Eliminate discussion of connectivity since predicted failure of intersection already assumes a high level of connectivity planned in the TSP. State that the same amount of connectivity is assumed regardless of the Alternative.
- Include v/c results in comparison table. It would be helpful to have a column related to safety. Include column for issues that may make an alternative infeasible.

Direction from TAG:

- Further investigation of alternatives 1 and 3
- Move toward alternative mobility target

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MEMORANDUM

Date: April 12, 2017

Project #: 20651

To: Dayna Webb
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045

From: Susan Wright, P.E., and Kristine Connolly

Project: Highway 213 and Beavercreek Road Alternative Mobility Targets

Subject: CAG Meeting #2 Minutes

On March 2, 2017, the second Community Advisory Group (CAG) Meeting for the Highway 213 and Beavercreek Road Alternative Mobility Targets project was held at the Oregon City's City Hall. *See Attachment 1 for the Meeting Agenda.*

The meeting began with introductions. John Makler of ODOT and Mike Bezner of Clackamas County were also in attendance. Susan presented an overview of Technical Memorandum #2, including policy, the travel time study, performance measures, feasible improvements and funding. The advisory group provided comments after the presentation. These comments are summarized below.

- Bill: travel time data collected in January—how reliable? Susie: collected the last week, not during a snow event
- Henry: have not defined mobility. Also what is regional? Could you do a destination survey to see how many Molalla residents use the intersection?
- Susie: we know many northbound and southbound movements are regional, as well as some turning movements. We did not collect specific OD data. Traditional mobility measure is v/c, strictly based on vehicle. But we want to think about other modes. This project is to decide what measure to use to measure mobility and how we want to define mobility at the intersection.
- Damon: how accurate if there are a lot of older cars?
- Susie: Pickup rate was about 11%. Does data match what we think is happening in the intersection?
- Bill Avison: why was the north leg collector farther away? Susie: no physical pole to mount the equipment.
- Susie: main goal was to see the variability throughout the day.

- Henry: what is the cycle time? Susie: 120 seconds. Henry: so average person gets through in one cycle but 85th percentile takes two? Susie: Yes.
- Bill: 2035 v/c projection seems low. Susie: Intersection can only accommodate so much traffic. The peak hour will spread out. Kirstin: growth is incremental but small proportion of total volume. Laura: model takes into account growth as well as planned improvements. Damon: model only takes into account Oregon City's growth. If other areas grow, will this blow up? Laura: model accounts for all of the regions traffic growing. The City's growth is one portion of a larger area growth. John Replinger: Model assumes growth in all four counties. John Lewis: Metro model assumes widespread growth, not just in the region. Assumes growth at the rate those communities are planned. Jon: vouches for the models accounting for all growth.
- Rick Givens: what is advantage of v/c over LOS? Susie: for consistency with the measure currently in place and other ODOT intersections on the corridor. Rick: any studies to look at how LOS compares to v/c? Susie: no direct correlation. Can have D over capacity and F under capacity.
- Bob: knee deep in housing crisis. Keep in mind that all appeals to LUBA for zone changes and concept plans have to do with a lot of traffic . One of the elements in land use planning for the state. Need to coordinate the LUBA so they know what we're doing when we approve land use changes. Extends to state planning as well. Susie: City obligated to study since the TSP showed that there is a problem on the corridor. Still want the land use plans but need an exception at this intersection. Need exception to get concept plans approved and withstand an appeal to LUBA. Cannot solve every problem. This exception process allows the City to have control over where standards are exceeded. Laura: balancing many needs as a region.
- Eric Lee: is this intersection the biggest/worst bottleneck? John Lewis: for Oregon City, this is the most challenging because there isn't an affordable improvement to solve the capacity issue. Eric: why was v/c chosen instead of travel time? Susie: travel time is good for long-range planning, and requires costly data collection and tools for measurement. v/c is much more accessible and measurable.
- Damon: you would only need to eliminate one lane. Susie: will investigate eliminating one vs. both lanes.
- Mike: to get money for a $50M project, it would usually be part of a large transportation bill. Looking at I-205, I-5, Highway 217 and larger projects in the Portland region. Other grants like TIGER go to larger jurisdictions. Sunrise Phase 1 was $150M, 30 years in the making. Enacted by Oregon legislature. Opportunities to raise large sums of money. Jon: Washington County wants Highway 217 widened. Cornelius Pass widening is $1B. In Clackamas County ODOT is focusing on completing Sunrise and upgrading Abernethy Bridge. Not on ODOT's radar to put millions into this intersection. Mike: first ask is for maintenance. Jon: mobility for whom? What would it cost to provide commuters with desirable level of service? What would it cost to provide goods? That's 9-3. And the graph shows that this is fine here. There are places in the region where that is not true, and that is where ODOT is focusing. Tradeoff between goods movement during day and people movement during peak.

- Kristina: desirable communities like Sellwood have walkability. Live work and play within community. No need for commuting. One way to address these issues is to look at providing a livable community.
- Henry: because half of people using intersection aren't residents, why should the City have to pay for the entire cost. Kirstin: does not preclude funding agreement. Mike: no city would pay for this in entirety. Would have to come from a federal or regional pot.
- Redland Road: because improvement is not constrained, needs alternative mobility target in order to stand up to LUBA.

Question 1: Could you live with an alternative mobility standard?

- Kristina: could live with the delay. What if there was a camera/app to determine whether to leave at a certain time?
- Bill Merchant: can live with v/c ratio. Concerned with amount of time we allow the intersection to be gridlocked. May begin to impact the middle of the day. Jon: would set a limit to the number of hours.
- Damon: ditto
- Luke: could live with it
- Nathan: feasible to accept higher v/c for certain amount of hours, especially when new development would be impacted by SDCs. Regional capacity—other areas impacted along the corridor. Constraints from other signals and highway.
- Michelle: yes
- Rick Givens: have to accept something like that but hopes to limit the number of hours. Kirstin: look at next meeting at what does 3 hours or 4 hours solve
- Eric: would like a more quantitative look. OR213 is called a bypass. Bypass is not a vehicle for economic development. But yes open to alternative target.
- Bill Avison: in Molalla there is OR211 and OR213, and that's it. City is trying to grow—OR213 is a major route. The purpose of the ACT in Region 1 is to work for all four counties and look at rural and urban dollars. There will be some priorities for rural areas, not $50M but perhaps $5M. Don't give up on getting some money from ODOT. Feel like we have to develop alternative mobility target. Not opposed to looking at that.
- Mike: thinks this is the right way to measure, but we're kidding ourselves if we think it will only be 1.05. Thinks it will affect the worst peak hour just as much as other time of day. What happens when we exceed the allowed X hours? Important to get Damon's comment—only looking at removing ONE westbound left turn lane. Low-cost project. Do countdown ped signals save lives? Kicking can down the road. Need to do lower cost solutions now, but will be back to this in a few years. Kirstin: still possible to continue to advocate for long-term solution. Want to be realistic in the short term.
- Renata: if v/c is how ODOT looks at facilities, makes sense to look at that here. We're already almost at capacity. People are going to be upset about additional delay. Political issue.

- Henry: too easy to continue to move the line. Should keep the current standard and put a long-term solution in the TSP. dislikes v/c because you cannot define terms adequately. V is definable but c is not. Acknowledges that there is no viable solution.
- Bob: can get through the issue technically but not politically. How to justify approving the alternative mobility target? If we had the money, wouldn't be talking. Convince public that we will eventually solve the problem. Can't give up—this is the job of planners to find a solution. We have a choice. Deny applications because we don't have capacity to serve them.
- Luke: did you consider widening sidewalks to provide shared use paths? With increased vehicle traffic, less safe for peds and bikes. Susie: something to consider and bring back, but retaining walls have impact on cost. Luke: look at it along Beavercreek.
- Damon: change ped access to just southbound? Get people used to crossing at other intersections. Would be useful on average graph to see how long it would take you if you don't stop at all going 20mph through intersection. Question why there is a spike at 8pm for westbound left. v/c of 0.79 in morning ignores westbound rights. 1.04 is a failure. Where is the v/c failure happening? Jon: small sample size. Damon: smaller improvements could fix the movements experiencing delay. Why no roundabout? Solution is tollbooths. Susie: profile is different based on movement. Westbound left is one of the lowest movements. Southbound left is critical movement. We looked at that in the first memo. How to solve the capacity issues at critical movements. Certain amount of green time to those four movements. That's how we came up with triple left and displaced left alternatives. Roundabout would need 4 circulating lanes.
- Mike: westbound right is also critical movement. Takes 40 seconds to go through intersection without stopping.
- Bob: computerize state highway system? Get on cell and find out what congestion is occurring. Mike: already have apps like Waze.

Question 2: If we accept higher v/c ratio, How many hours do we accept? (to be addressed at the next CAG meeting)

Direction from CAG:

- Clear support for using alternative mobility target v/c.
- Preserve the right to advocate for longer-term solution.
- Determine when/where the v/c failure occurs.

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MEMORANDUM

Date: April 12, 2017

Project #: 20651

To: Dayna Webb
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, OR 97045

From: Susan Wright, P.E., and Kristine Connolly

Project: OR213 and Beavercreek Road Alternative Mobility Targets

Subject: TAG Meeting #2 Minutes

On March 1, 2017, the second Technical Advisory Group (TAG) Meeting for the OR213 and Beavercreek Road Alternative Mobility Targets project was held at the Oregon City's City Hall. *See Attachment 1 for the Meeting Agenda.*

The meeting began with a summary of the first Community Advisory Group (CAG) meeting. The CAG requested that an interchange alternative be kept on the table. They also thought it was important to have a County and ODOT representative at CAG Meeting #2. The CAG was comfortable looking at alternative mobility standards but want to build regional support for a long-term improvement. Lidwien suggested recommending taking an improvement to the regional table and having someone else convey that it is not a priority for the State/Region. Alternatives 1 and 3 have not yet been refined. Several lower cost solutions were suggested, but they do not address the 2035 capacity issue. Alternatives refinement is on hold in order to talk about the travel time study and funding. Outcome of these meetings will make a decision on what alternatives to continue to pursue.

Susan presented an overview of Technical Memorandum #2, including policy, the travel time study, performance measures, feasible improvements and funding. The advisory group provided comments throughout the presentation. These comments are summarized below.

Travel Time Study

- Note that AM peak analysis does not take queuing at the westbound right turn into account.
- Cycle length consistent throughout the day?
- Christian: recent signal timing changes impacting EBL vs. WBL green times
- SBL and WBR in particular have some challenges.

- Aleta: add volumes to each graph (to explain some erratic high delay)
- Christian: what is the free-flow travel time?

Alternative Mobility Targets

- Lidwien: isn't current standard 2 hours? KAI to verify current standard (1 or 2 hours?)
- Laura: 1st highest hour cannot exceed 0.99 and 2nd highest hour cannot exceed 0.99
- Susie: no direct correlation between v/c and travel time. Cannot reliably draw a line on the graph indicating v/c = 1.
- Whatever performance measure we choose, leave room for potential zone changes which could increase trips
- Laura: will likely come back to the intersection before 2035 and reevaluate then
- Lidwien: not obligated to approve zone changes
- Laura: most zone changes are through annexations
- Laura: What is the split between local trips and outside trips through the intersection? Was that included in the TSP analysis?

Performance Measures

- Susie: How to develop a 4th highest hour in 2035?
- Includes morning and afternoon.
- Easy to measure and easy to replicate and review. Require a 10-hour count. What is the trip generation during the 4th highest hour? Off-peak trip generation. Will need to develop methodology.
- Kelly: burden of additional study falls on private developers and reviewers.
- Lidwien: As far as the State goes, ODOT standard only applies to plan amendments. Up to the City what to do with permitted uses (already accounted for in TSP). ODOT standard does not apply to permitted uses.
- Replinger: Require developers to conduct TIAs to identify needs in immediate vicinity. Also to assess proportional share. Assess whether to move an improvement from 'not likely to be funded' to 'financially constrained'.
- Replinger: concerned that calculation of v/c in the 4th hour is going to be higher than we estimated.
- Susie: we know peak to daily ratio today. What is the peak to daily ratio in the future model? What is the expected daily profile in 2035? Will determine as part of next steps.
- Replinger: pass-by percent off peak? Changes throughout the day.
- Lidwien: ODOT has not had an opportunity for traffic to look at the memo. Peak hour spreading is already anticipated in OHP. Lidwien would start with three hours instead of jumping to four. Consider supplementing with one of the safety measures—could even be measuring queuing.
- Kelly: first goal in the TSP is safety. Can easily tie safety measure to the TSP goals.

- Susie: from development standpoint, hard to get into predictive crash rates. Set threshold? Make sure everyone mitigates impact? Apply just to TPR, not outright zoned properties? What improvements are reasonable? Then we can get into crash rate. Make sure what we propose does not increase future crash rate. Increased trips=increased crashes no matter what. What is City's standard for this intersection when it comes to outright zoned properties? Do you want to impose standard for outright zoned development? Have a different measure?
- Laura: TSP applied ODOT standard to all development, not just zone changes. Helps to calculate proportional share. Self-imposed analysis for permitted uses.
- Lidwien: can require traffic analysis to calculate SDC's and not call it a standard.
- Replinger: can require that the applicant calculate the volume of traffic entering the State Highway, not actually require analysis. Then charge per car, for example.
- Susie: can have improvements in the TSP and still have alternative mobility target
- John Lewis: what safety standard would you recommend in conjunction with v/c?
- Susie: predict future crash rate with improvements and compare to what the crash rate would be without the improvement. Set as standard? Improvements do not come in small increments though.
- Kelly: why is average travel time not a better measure than v/c?
- Susie: ease of application of predicting future travel time and cost of data collection. Difficult to model and expensive data for calibrating.
- John Lewis: for community group, more robust explanation of recommendation.
- Lidwien: public will not want to go over each measure
- Aleta: could we have the same graph for v/c in 2035?
- Lidwien: explain that this is existing, and it is very difficult to forecast. Then when you explain the recommendation, say it is because it is so difficult to forecast travel time. Could do travel time for intersection or corridor. Corridor would be more appropriate than intersection.
- Susie: will come up with something illustrative to show future v/c.

Operations and Safety Improvements

- What to implement in tandem with alternative mobility targets? What to go in TSP? What to consider financially constrained? What to include in unconstrained plan?
- John Lewis: see a lot of cross traffic crashes. In favor of the lighting, pedestrian countdown display and medium cost improvements.
- Susie: removing left turns from the intersection will improve safety.
- Lidwien: look at critical movement v/c? only look at v/c on 213 but not on Beavercreek?
- Susie: would build queues on the side street.
- Christian: does this get adopted into OHP? Susie: Yes
- Christian: anything like this implemented? Susie: some have increased v/c.

Funding

- Check the math on the households (numbers don't add up and the number of houses doesn't seem right)
- Lidwien: mentioned extending from Redland to Molalla. But we do not have improvements at Redland. They would also have to be added to the SDC list.
- Susie: Redland Road has improvement in TSP but project is unfunded.
- Lidwien: Have to have a way to fund, and have to get onto financially constrained RTP
- Susie: Redland Road needs alternative mobility target as well. Demonstrate how a 2/3/4 year target looks today and how it would look in the future.
- Replinger: financial infeasibility would justify alternative mobility target at Redland Road as well.
- Lidwien: need to demonstrate to ODOT why project is infeasible. Show your work.
- Dayna: Redland Road project is in RTP unconstrained list, but needs to be in constrained list to qualify for TPR analysis
- Susie: no conflict with having project in TSP and having alternative mobility target. Would not preclude City from having alternative in the constrained TSP and still pursue alternative mobility target
- Lidwien: would keep from implementing anything that would preclude TSP project in the future.
- Laura: did we look at Molalla in 2035?
- Replinger: decision not to analyze 213/ Molalla was because it had been studied recently for the Clackamas College. We'll be ok there with Meyers Road extension.
- Can we come up with alternative to constantly measure travel time? How much would it cost to have the equipment out there all the time?
- Having alternatives on the list will help the public accept an alternative mobility standard. May be some support for lower to moderate cost alternatives.

Direction from TAG:

- Continue looking at v/c for certain # of hours recommendation
- Work with City on looking at what improvements are easy to financially constrain
- Determine whether additional meetings will be necessary.

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MEMORANDUM

Date: April 27, 2017

Project #: 20651

To: Dayna Webb
City of Oregon City
625 Center Street
Oregon City, OR 97045

From: Nicholas Gross and Susan Wright, P.E.
Project: Highway 213 and Beavercreek Road Alternative Mobility Targets
Subject: CAG Meeting #3

On April 20, 2017 the third Community Advisory Group (CAG) meeting for the Highway 213 and Beavercreek Road Alternative Mobility Targets project was held at the Oregon City's City Hall. *See Attachment 1 for the Meeting Agenda:*

WELCOME, MEETING PURPOSE AND AGENDA REVIEW

The meeting was kicked-off by John Lewis of Oregon City's Engineering Department who welcomed back the group and thanked those in attendance for their continued participation. Kirstin Greene of Cogan Owens Green provided an overview of the meeting's agenda and reminded CAG members that their comments and opinions regarding the mobility targets would be documented and used to help guide the process moving forward.

John Replinger of Replinger & Associates provided an overview of the hierarchy of transportation planning and how it translates to the development review process. John began with an overview of the City's approach to a refinement plan, highlighting that for this project, a refinement plan is being carried out by the City Oregon for the intersection of Highway 213. John also provided an overview of the development review process discussing land-use actions, rezoning, subdividing and how these actions require a develop to conduct a traffic impact study as well as mitigation measures in compliance with City standards.

OVERVIEW OF TECHNICAL MEMORANDUM #2

Susan Wright of Kittelson & Associates, Inc. provided a recap of the CAG meeting #2 and an overview of the existing mobility targets specific to the intersections of Highway 213/Beavercreek Road and

Highway 213/Redland Road. Susan discussed the projects currently in Oregon City's Transportation System Plan (TSP) and potential new projects for the Highway 213/Beavercreek Road including a west-bound right-turn acceleration lane and southbound advance warning system improvements predicted to reduce crashes by approximately 5%.

Susan then provided an overview of 2040 operations at both intersections highlighting the volume over capacity (V/C) ratios with and without the recommended improvements. The key takeaways were that the intersections of Highway 213/Beavercreek and Highway 213/Redland Road will exceed the current mobility target in the City's TSP for the horizon year of 2035 and that the alternatives that would meet the existing targets are not currently cost-feasible. The following recommendations for targets and improvements were provided:

Highway 213/Beavercreek Road

- Mobility Target – V/C not to exceed 0.99 for more than give hours of the day
- Improvements added to costs-constrained TSP
    - Westbound right-turn acceleration lane

Highway 213/Redland Road

- Mobility Target – V/C not to exceed 0.99 for more than three hours of the day
- Improvements added to TSP
    - Third southbound through lane (if const-feasible)

DISCUSSION

The following section provides a recap of the discussion points and questions/answer dialogue between the CAG and the project team:

Dan Fowler (DF): Have you considered using the Holcom Boulevard overpass as an exit point off of Highway 213?

Susan Wright (SW): No, I can say that we haven't looked into that.

Dan Fowler: I'm not saying it's feasible, it's just an idea.

Damon Mabee: Even if it were just an off-ramp for northbound traffic heading onto Holcom Boulevard it would eliminate all of the traffic using Redland Road to get onto Holcomb Boulevard from Highway 213.

Susan Wright: The good thing about the improvements in the TSP is that they mitigate the intersection to the current standards. I don't know think constructing an off-ramp at Holcom Boulevard would be any cheaper.

Dan Fowler: Is this area inside the urban renewable district of downtown? I ask because I'm curious of potential funding strategies.

John Lewis (JL): I don't know but I know it includes the driving range.

Damon Mabee: The concern about storage of the left-turn lane is irrelevant to me. The City has a plan to push Meyers Road through. The number of people the left-turn lane is going to affect is minimal compared to the queue to get into Maple Lane.

Eric Lee: Does your model factor in the concept of induced demand?

Susan Wright: The latest model from Metro considers the spreading of the peak hour. Because our system is constrained, it is considering the peak hour spreading.

Rick Givens: Did you run the numbers for the combined effect of the acceleration lane plus the left-turn lane?

Susan Wight: We did and it was negligible.

Luke Norman: It sounds like the free flow right-turn will affect the pedestrian movement at the intersection.

Susan Wright: Yes, assuming vehicles will not have to stop, they will still need to yield. We spoke with the technical advisory group (TAG) about this topic. Currently, pedestrian traffic is not high enough to warrant a pedestrian button. It will be an important design consideration.

Kristina Browning: I live in the adjacent neighborhood and there are a few areas of sidewalks that aren't connected to the rest of the network. My neighbors and I would do a lot more walking if they were connected. Pedestrian activity would increase if we were able to get to that intersection and if we could walk there safely.

Susan Wright: That's a great point and a topic that is addressed in the City's TSP.

John Replinger: The City's TSP did a great job at identifying network gaps throughout the city for bicycles and pedestrians. There are a substantial number of projects proposed to fill those gaps as well as a policy that any time a developer moves forward, they need to provide sidewalks at the frontage of the development.

Susan Wright: This will ultimately go to the Oregon Transportation Commission (OTC) and part of our findings will demonstrate other solutions for bicycles, pedestrians, and street connectivity.

Henry Mackenroth: Given that a pedestrian button is tied into the signal controller and there is already a controller operating, sending an additional $10k seems like pocket change to install a pedestrian

button. It should not be a consideration, it needs to be done. We should be thinking about bicycles and pedestrians for any improvement that is recommended to move forward.

Rick Givens: Do you have a sense of how many years out you are before getting to the 0.99?

Susan Wright: We looked at 2035 to see what the difference of that change would be and those five years helped. If you want to get technical we've included the 2035/2040 comparisons as an appendix online. We are still targeting the 2040 year which is consistent with the regional model.

Rick Givens: I have no sense of the differential between 0.99 and 1.02. Is that an incremental difference? Is there anything to do to bring those additional hours down to 0.99?

Susan Wright: Those were some of the improvements we first talked about such as a triple left-turn lane, etc. We received strong consensus that those were not viable solutions. We see the $1.5million right-turn lane providing significant benefit to the intersection operations.

Rick Givens: What does 0.99 compared to 1.02 feel like operationally?

Susan Wright: You wouldn't notice much of a different. This is more about setting up the methodology that we are going to use to set the rules for the future which everyone will follow.

Mike Mitchell: What is the most stressed movement at Highway213/Redland Road?

Susan Wright: The left turning movement from Highway 213 onto Redland Road. The morning is worse than the evening.

Bob Mahoney: Rick said it best. Nothing is cheaper to build than building now. It's only going to get more expensive the longer this gets pushed out. If we don't make improvements now, what is the cost the city will face? Including those facts and figures for your following presentations would be valuable.

Dan Fowler: For the Highway213/Beavercreek intersection, did you look at the most optimum signal sequence for the right-turn movement?

Susan Wright: Yes we did.

Eric Lee: Are the two operation tables dependent or independent from one another?

Susan Wright: There is some dependency but the analysis was treated separated for both.

Damond Mabee: My feeling is that money would be better spent putting in an intelligent signal system. I think it will reduce the V/C ratio. I also don't see the benefit between the red and yellow difference shown in the table for Highway213/Redland Road for the expense it is shown at.

Nathan McCarty: I want to revisit the alternative for the P.M. traffic heading southbound and turning left onto Beavercreek Road.

Dan Fowler: What does bullet point 2 mean? Document alternatives considered and add policy to TSP to recognize merits of a regional solution?

Susan Wright: Essentially this is referencing an interchange. ODOT also has interest in a jug-handle concept. We want to document everything to show that we've looked at the pros and cons of all options.

Henry Mackenroth: Bullet point 2 needs to be shown for Highway213/Redland Road in the future. That is also going to end up being a regional solution. You also can't put pedestrians and bicycles in a separate category from vehicles. We have to make sure all modes can get across the intersection(s) safely. They will do it whether there is a facility provided to them or not.

Bob Mohoney: We're being ushered into a digital age of technology. Technology is taking over our lives and its taking over our highways. We are losing V/C because our intersections are not smart. I think the solution to a lot of the V/C conversation is technology. If it cost $250k to upgrade to a smart signal and increase the efficiency by 10% that is money well spent.

Dan Fowler: I agree. A lot of the near-term solutions are going to end up being funded by developers.

Kristina Browning: I want to reemphasize the importance for walkability. We need to focus on connecting the existing sidewalks and encouraging bicycling. When this all gets built out it needs to accommodate everyone and what you've presented only seems to be focused on cars.

COMMENTS ON THE RECOMMENDED ALTERANTIVE MOBILTIY TARGET

Kristine Connelly: At this point the alternative mobility target recommendations have been through the TAG and they seem to be generally comfortable. I think we all recognize the benefits and drawbacks to each recommendation. Now we want to hear from everyone around the table on your thoughts about the Alternative Mobility Target.

Rick Givens: I agree with a lot of what Dan said regarding the smart signals. I have no problem with the proposed changes to the alternative mobility target. I also like the idea of doing something at the Holcom Boulevard overpass.

Mike Mitchell: I think it is extremely important to separate the two projects entirely when it comes to funding. Highway213/Beavercreek Road is a big bang for the buck. Highway213/Redland Road doesn't have nearly the same impact and it costs more. Let's get creative with development projects and where sidewalks are proposed. I'm comfortable with all the alternative mobility targets.

Eric Lee: Thank you for the presentation, I'm comfortable with the alternative mobility target recommendations. I think there needs to be additional recommendations to include pedestrian and bicycle accessibility. I don't think cutting pedestrian access off is ever a good thing. Let's focus on the safety of bicyclists and pedestrians and move forward with recommendations that help those modes.

Bill Merchant: I'm happy with the alternative mobility target you presented and I want to echo the point about intelligent signals. The existing signals can talk to each other and they can be smart.

Mike Mitchell: I think the acceleration lane is a great idea. I also think you diminish the benefit if you allow pedestrians to cross there. The sidewalk could be removed and used as a shoulder or an emergency lane.

Luke Norman: I'm comfortable with the alternative mobility target exceeding the times and V/C. Regarding the acceleration lane, I will not support anything that makes it less safe for pedestrians and bicyclists.

Damon Mabee: Incremental changes open up possibilities for technical changes. I agree we need to add the second bullet point to the Highway213/Redland Road discussion. I cannot support the alternative mobility target with additional time added to the V/C. I think we need to stay at our targets, look to technology, and get the funding to relieve the pressure.

Nathan McCarty: I can accept the three recommendations as they relate to the alternative mobility options. We need to continue to look at cost-effective solutions.

Kirstin Greene: It sounds like the majority of folks are comfortable with the proposed solution. Some additional high level thoughts I am hearing is the adopting of smart technology practices to optimize signal operations and the consideration of balancing pedestrian and bicycles.

Commission Renate Mengelberg: Seeing the V/C ratio over accepting levels for five hours a day makes me uncomfortable. It doesn't seem like a good policy. Let's get the most out of our existing system. Technology is going to help.

Kirstin Greene: Thank you everyone for coming out.

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MEMORANDUM

Date: December 8, 2016

Project #: 20651

To: Dayna Webb, P.E.
Public Works Department
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, Oregon 97045

From: Susan Wright, P.E., Hermanus Steyn, P.E., and Kristine Connolly

Project: Highway 213 & Beavercreek Road Alternative Mobility Targets (PS 16-024)

Subject: Memorandum #1: Project Background and Preliminary Alternatives Evaluation

Oregon City's 2013 Transportation System Plan (TSP) determined that the intersection of Highway 213 (OR213) and Beavercreek Road will not meet mobility standards in 2035. The TSP recommended a project be conducted to identify what improvements may be necessary to meet current standards or whether an alternative mobility target is necessary. A Community Advisory Group (CAG) and Technical Advisory Group (TAG) have been formed to help the City evaluate the feasibility and practicality of the alternatives set forth in this project. This memorandum provides background information, operational and safety information, and identifies preliminary alternatives for the improvement of the OR213/Beavercreek Road intersection. These alternatives will be reviewed with the CAG and TAG to determine if any may be feasible and merit further exploration, or if an alternative mobility target needs to be pursued.

ALTERNATIVE MOBILITY TARGET BACKGROUND

The Oregon Highway Plan (OHP) defines polices and investment strategies for Oregon's state highway system for the next 20 years. The OHP gives policy and investment direction to corridor plans and transportation system plans that are being prepared around the state, but it leaves the responsibility for identifying specific projects and modal alternatives to those plans.

Policy 1F: Highway Mobility Policy states, "It is the policy of the State of Oregon to maintain acceptable and reliable levels of mobility on the state highway system, consistent with expectation for each facility type, location and functional objectives. Highway mobility targets will be the initial tool to identify deficiencies and consider solutions for vehicular mobility on the state system. Specifically, mobility targets shall be used for:

- Identifying state highway mobility performance expectations for planning and plan implementation;
- Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-060); and
- Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance."

Mobility targets for state highways, as established in this policy or as otherwise adopted by the Oregon Transportation Commission as alternative mobility targets, are considered the highway system performance standards in compliance with the Transportation Planning Rule (TPR) (OAR 660-012), including applicability for actions that fall under Section -0060 of the TPR.

Mobility targets are the measure by which the state assesses the existing or forecasted operational conditions of a facility and, as such, are a key component ODOT uses to determine the need for or feasibility of providing highway or other transportation system improvements; and therefore impact local land use and transportation planning as well as development review. The OHP currently includes alternative mobility targets in many locations throughout the State.

EXISTING CONDITIONS

The existing conditions analysis identifies the transportation conditions and current operational and geometric characteristics of the roadways within the study area. Exhibit 1 below provides an overview of the intersection.

Exhibit 1. Highway 213 (OR213) and Beavercreek Road Intersection

At the OR213/Beavercreek Road intersection, OR213 has a 4-lane section and a speed limit of 55 mph and is classified as an Expressway to the north and a District Highway to the south. Beavercreek Road is classified as a Major Arterial with a 4/5-lane section and a speed limit of 35 mph. OR213 is under the

jurisdiction of the Oregon Department of Transportation (ODOT), the west leg of Beavercreek Road is under the jurisdiction of Oregon City, and the east leg is under the jurisdiction of Clackamas County. OR 213 and Beavercreek Road are both designated as a Local Truck Routes in the City's TSP at the study intersection. The City designated truck routes in the TSP to ensure trucks can efficiently travel through and access major destinations in the City.

Sidewalks are provided along the north and south sides of Beavercreek Road, and a multi-use path is provided along OR213 south of Beavercreek Road along the east side of the highway. Bicycle lanes are provided along Beavercreek Road. TriMet operates Bus Route 32 between Clackamas Community College and Milwaukie City Hall. There are stops located on the west leg of Beavercreek Road at the intersection for both directions of travel (i.e. far-side for westbound and near-side for eastbound).

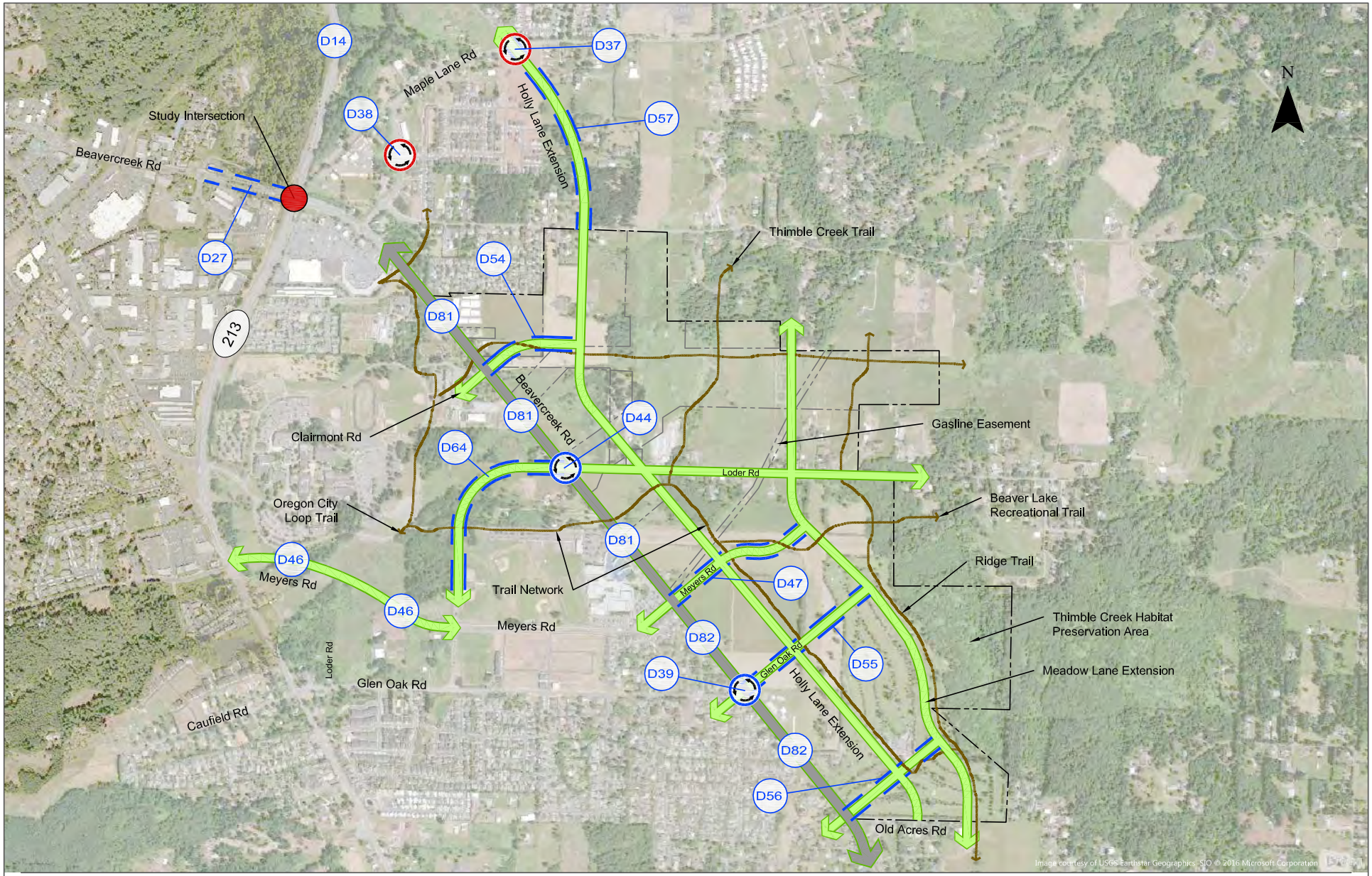
There is a stream running under the north leg of OR213 at the intersection, with corresponding wetlands. There are also geologic hazards in the vicinity of the intersection, with steep slopes and landslides primarily on the northwest corner. More details can be found in the Oregon City GIS maps in **Appendix A**. The presence of these features increases the expense of any improvements requiring additional widening, as significant earthwork, culvert extensions, or wetland mitigation may be necessary.

The City's TSP includes projects which may impact operations, safety, and travel patterns at the OR213/Beavercreek Road intersection. Many of the projects will increase connectivity in the vicinity of the OR213/Beavercreek Road intersection via parallel routes and roadway extensions between these parallel routes, providing alternate routes for those who do not need to pass through the intersection. All new roads and roadway upgrade projects will include facilities for bicycles and pedestrians. In addition, the TSP includes projects specifically to complete and enhance the bicycle and pedestrian networks. The roadway projects likely to increase connectivity and impact safety and operations at the OR213/Beavercreek Road intersection are included in **Table 1** and **Figure 1.**

Table 1 – 2013 Oregon City Transportation System Plan Projects located in the southeast part of the City

Project #	Project Description	Project Extent	Project Elements	Priority	Funded ?
D14	Southbound OR 213 Advanced Warning System	Southbound OR 213, north of the Beavercreek Road intersection	Install a queue warning system for southbound drivers on OR 213 to automatically detect queues and warn motorists in advance via a Variable Message Sign	Short-term	Likely
D27	OR 213/Beavercreek Road Operational Enhancement	OR 213/Beavercreek Road	Lengthen the dual left-turn lanes along Beavercreek Road to provide an additional 200 feet of storage for the eastbound approach	Short-term	Yes
D37	Maple Lane Road/Holly Lane Operational Enhancement	Maple Lane Road/Holly Lane	Install a single-lane roundabout	Long-term	Unlikely
D38	Maple Lane Road/Walnut Grove Way Operational Enhancement	Maple Lane Road/Walnut Grove Way	Install a single-lane roundabout or realign Maple Lane Road in correlation with development	Long-term	Unlikely

D39	Beavercreek Road/Glen Oak Road Operational Enhancement	Beavercreek Road/Glen Oak Road	Install a roundabout	Long-term	Unlikely
D44	Beavercreek Road/Loder Road Extension Operational Enhancement	Beavercreek Road/Loder Road Extension	Install a roundabout	Medium-term	Likely
D46	Meyers Road West Extension	OR 213 to High School Avenue	Extend Meyers Road from OR 213 to High School Avenue as an Industrial Minor Arterial. Create a local street connection to Douglas Loop.	Short-term	Likely
D47	Meyers Road East extension	Beavercreek Road to the Meadow Lane Extension	Extend Meyers Road from Beavercreek Road to the Meadow Lane Extension as an Industrial Minor Arterial. Between the Holly Lane and Meadow Lane extensions, add a sidewalk and bike lane to the south side of the street, with a shared-use path to be added on north side per project S19. Modify the existing traffic signal at Beavercreek Road	Medium-term	Likely
D54	Clairmont Drive extension	Beavercreek Road to Holly Lane South Extension	Extend Clairmont Drive from Beavercreek Road to the Holly Lane South extension as an Industrial Collector. Add a sidewalk and bike lane to the south side of the street, with a shared-use path to be added on north side per project S17	Long-term	Likely
D55	Glen Oak Road extension	Beavercreek Road to the Meadow Lane Extension	Extend Glen Oak Road from Beavercreek Road to the Meadow Lane Extension as a Residential Collector. Install a roundabout at Beavercreek Road (per project D39)	Long-term	Likely
D56	Timbersky Way extension	Beavercreek Road to the Meadow Lane Extension	Extend Timbersky Way from Beavercreek Road to the Meadow Lane Extension as a Residential Collector. Add a sidewalk and bike lane to the south side of the street, with a shared-use path to be added on north side per project S20	Long-term	Likely
D57	Holly Lane South extension	Maple Lane Road to Thayer Road	Extend Holly Lane from maple Lane Road to Thayer Road as a Residential Collector. Add a sidewalk and bike lane to the west side of the street, with a shared-use path to be added on east side per project S14. Install a roundabout at Maple Lane Road (per project D37)	Medium-term	Likely
D58		Thayer Road to Meyers Road	Extend Holly Lane from Thayer Road to the Meyers Road extension as an Industrial Collector. Add a sidewalk and bike lane to the west side of the street, with a shared-use path to be added on east side per project S15	Medium-term	Likely
D59		Meyers Road to the Meadow Lane Extension	Extend Holly Lane from the Meyers Road extension to the Meadow Lane Extension as a Mixed-Use Collector. Add a sidewalk and bike lane to the west side of the street, with a shared-use path to be added on east side per project S16	Long-term	Likely
D64	Loder Road Extension	Beavercreek Road to Glen Oak Road	Extend Loder Road from Beavercreek Road to High School Avenue as an Industrial Collector. Add a sidewalk and bike lane to the west side of the street, with a shared-use path to be added on east side per project S18. Create a local street connection to Douglas Loop.	Short-term	Likely
D81	Beavercreek Road Upgrade	Clairmont Drive (CCC Entrance) to Meyers Road	Improve to Industrial Major Arterial cross-section	Medium-term	Likely
D82		Meyers Road to UGB	Improve to Residential Major Arterial cross-section	Long-term	Likely



- TSP Improvements Likely to be Funded
- TSP Roundabout Likely to be Funded
- TSP Roundabout Not Likely to be Funded
- Beavercreek Road Upgrades
- Conceptual Road Network

Conceptual Planned Area Connectivity Improvements Oregon City

Figure 1

Planning level operations and safety analyses were conducted at the OR213/Beavercreek Road intersection, and compared to the 2013 TSP. The (2011 base) volumes from the 2013 TSP were compared to 2016 weekday p.m. peak hour count data (see **Appendix B**) collected by the City at the following intersections:

- OR213 and Beavercreek Road
- OR213 and S Caufield Road/Glen Oak Road
- S Holly Lane and S Maple Lane Road

This comparison showed an overall 2% linear annual growth rate for the area from 2011 to 2016. Based on this calculation, the growth rate experienced during the last five years appears consistent with the long term growth trend predicted in the TSP.

It should be noted that there is larger than average growth for the southbound right-turn movement from Holly Lane to Maple Lane Road. This is likely due, in part, to S Holly Lane functioning as a parallel alternative route to OR213. Drivers may be using S Holly Lane to avoid making a southbound left-turn from OR213 to Beavercreek Road due to long queues and delays for this movement.

The existing mobility standard for the OR 213/Beavercreek Road intersection set forth in the 2013 TSP is based on volume-to-capacity Ratio (v/c). The v/c ratio is a measure that reflects mobility and quality of travel. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). For example, a v/c of 1.00 indicates the roadway facility is operating at its capacity. The following mobility standard is set forth in the 2013 TSP for the OR213/Beavercreek Road intersection:

- During the highest one-hour period of the day, a maximum volume-to-capacity (v/c) ratio of 0.99 shall be maintained.

The analysis completed for the 2013 TSP shows the intersection operating with a v/c ratio of 0.83 under 2011 existing conditions.

The OR213/Beavercreek Road intersection was identified in the 2013 TSP as a high collision intersection. The ODOT Crash Analysis and Reporting Unit provided crash records at the intersection for the 5-year period from January 2010 through December 2014. **Table 2** summarizes the reported crash data. The crash data is included in **Appendix C**.

Table 2 - OR213/Beavercreek Road Intersection Crash Summary and Crash Rate Assessment (2010-2014)

Crash Type				Severity			Total	Critical Crash Rate by Intersection Type	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
Rear-End	Turning	Angle	Other	PDO	Injury	Fatal					
116	7	5	5	58	74	1	133	0.59	0.50	1.20	Yes

PDO = Property Damage Only
Crash Rate = crashes per million entering vehicles

The intersection was in the top 5% of the ODOT Safety Priority Index System (SPIS) List for the years 2012-2014. The SPIS List is maintained by ODOT and updated each year with the latest available year of crash records and traffic volumes. 2012-2014 is the most current SPIS list. The intersection also has a crash rate that exceeds the Critical Crash Rate meaning that it exceeds the crash rate of other comparable intersections.

Beavercreek Road is the first at-grade intersection on OR213 for over two miles south of Redland Road, in a corridor that generally feels rural. A lack of driver expectation of southbound queues from the signal may contribute to the high number of reported rear-end crashes at the intersection. The reported fatality occurred in 2011, and was an angle crash in which the driver ran a red light under dark and rainy conditions. The 2010-2014 crash rate of 1.20 is already lower than the crash rate of 2.05 identified in the 2013 TSP, indicating that safety and/or driver attentiveness have improved in recent years. Lengthening the dual eastbound left-turn lanes to provide additional storage (Project D27; funded) and an advanced queue warning system on southbound 213 will further improve safety at the intersection.

ALTERNATIVES DEVELOPMENT

The Synchro analysis in the 2013 TSP indicates that by 2035, without a major improvement, the intersection will function beyond the current mobility standard. Under 2035 Planned System Conditions, the intersection is expected to operate with a v/c ratio of 1.05, exceeding the existing mobility standard of a maximum v/c ratio of 0.99.

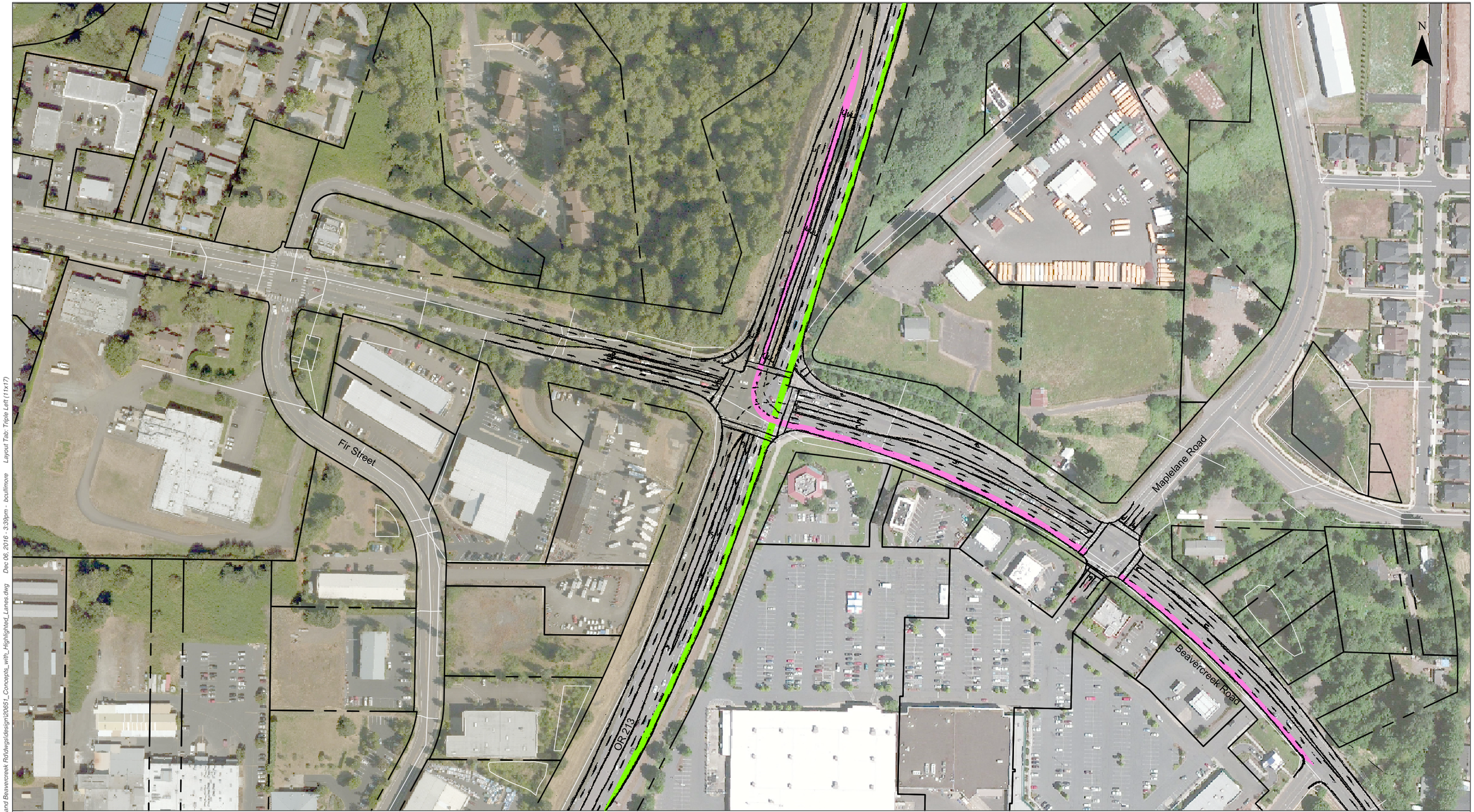
Alternatives to modify the existing intersection configuration and traffic control, which would bring the intersection into compliance with the current mobility standards in the year 2035, were identified and include:

- Addition of lanes to current configuration
- Quadrant road in the southwest quadrant of the intersection,
- Variations of displaced left-turns (also referred to as continuous flow intersection), and
- Grade-separated interchange forms.

The potential operational impacts of each alternative are shown in **Table 3** and evaluated for a variety of additional considerations in **Table 4**.

Alternative 1: Triple Left-Turns

To maintain the current mobility standard with the existing intersection control, a third southbound left-turn lane and a third northbound through lane through the intersection would be required to bring the intersection back to a v/c ratio of 0.90. The effectiveness of the additional northbound through lane is dependent on the planned extension of Meyers Road from Beavercreek Road to OR213 which would allow some eastbound right-turns at the intersection to be converted to northbound through movements based on the new network connectivity. **Figure 2** shows a sketch of these potential lane additions.



SCALE
0 200 400

= New Lanes

Alternative 1: Triple Southbound Left Turn Lanes
& Three Northbound Through Lanes
Oregon City, Oregon

Figure
2

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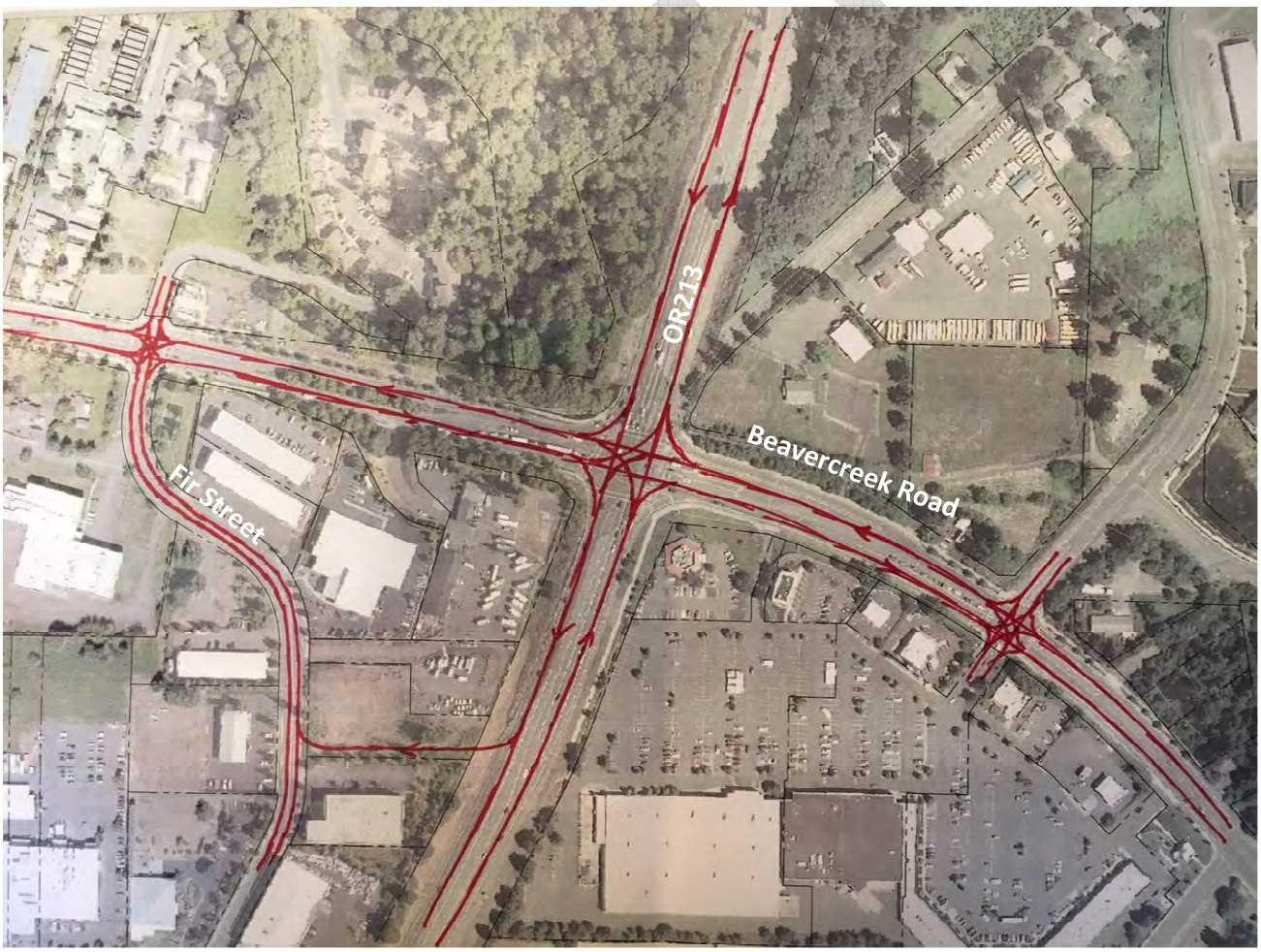
H:\proj\file\20651 - Hwy 213 and Beavercreek Rd\dwgs\design\20651_Concepts_ with_Highlighted_Lanes.dwg Dec 06, 2016 - 3:39pm - bcullimore Layout Tab: Triple Left (11x17)

Alternative 2: Quadrant Road

A quadrant road, or indirect left, in the southwest corner of the intersection would allow southbound left-turns to be prohibited at the OR213/Beavercreek Road intersection. These vehicles would instead travel southbound through the intersection, turn right onto a new street to the south that would connect to Fir Street, and make a right-turn onto Beavercreek Road to continue east on their desired route. A third southbound through lane and third eastbound through lane would be necessary to accommodate the large volumes traveling through the intersection twice instead of once. This would reduce overall intersection delay but increase travel time for the southbound left-turn movement. The widening is likely to impact the culvert and retaining walls on the northwest and northeast corners of the intersection.

Exhibit 2. Quadrant Road Alternative

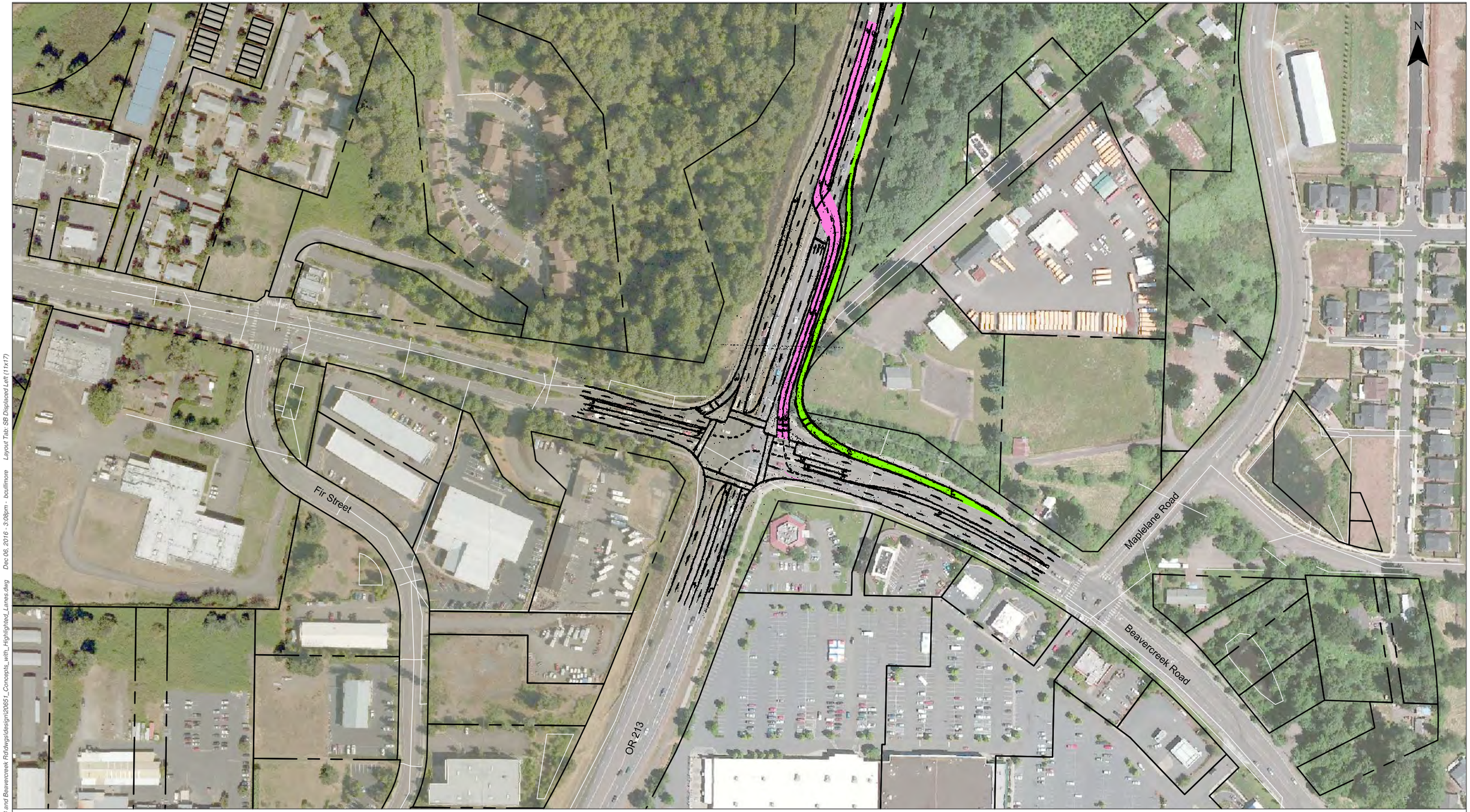


Alternatives 3 & 4: Displaced Left-Turns

In a displaced left-turn[1], or continuous flow, intersection, left-turns are removed from the main intersection and relocated to a new upstream signal. With proper coordination, vehicles are able to make a left-turn simultaneously with opposing through traffic. Displaced left-turn intersection alternatives would reduce the number of signal phases and conflict points in the OR213/Beavercreek Road intersection, thereby improving capacity and safety, but would require coordinated partial signals on the approaches with displaced left-turns. The heaviest left-turn movements at the OR213/Beavercreek Road intersection are on the southbound and eastbound approaches. **Figure 3** shows a sketch of a displaced left-turn for the southbound approach only. **Figure 4** shows a sketch of displaced left-turns for both the southbound and eastbound approaches. In either case, the southbound approach requires dual left-turn lanes. Consideration could be given to prohibiting the northbound and westbound left-turn movements as these movements have minimal traffic volumes and have alternate routes; however, these restrictions are not mandatory. Additional analysis (microsimulation) is necessary to fully understand the benefits of these potential restrictions.

Alternative 3 includes impacts to the culvert and retaining walls in the northeast corner of the intersection. Alternative 4 includes culvert and retaining wall impacts to both the northwest and northeast corners of the intersection.

[1] Steyn, H., Z. Bugg, B. Ray, and A. Daleiden. *Displaced Left-Turn Informational Guide.* FHWA, Washington, D.C., 2014. http://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14068_dlt_infoguide.pdf



SCALE
0 200 400

= New Lanes

Alternative 3: Southbound Displaced Left Turn
Oregon City, Oregon

Figure
3

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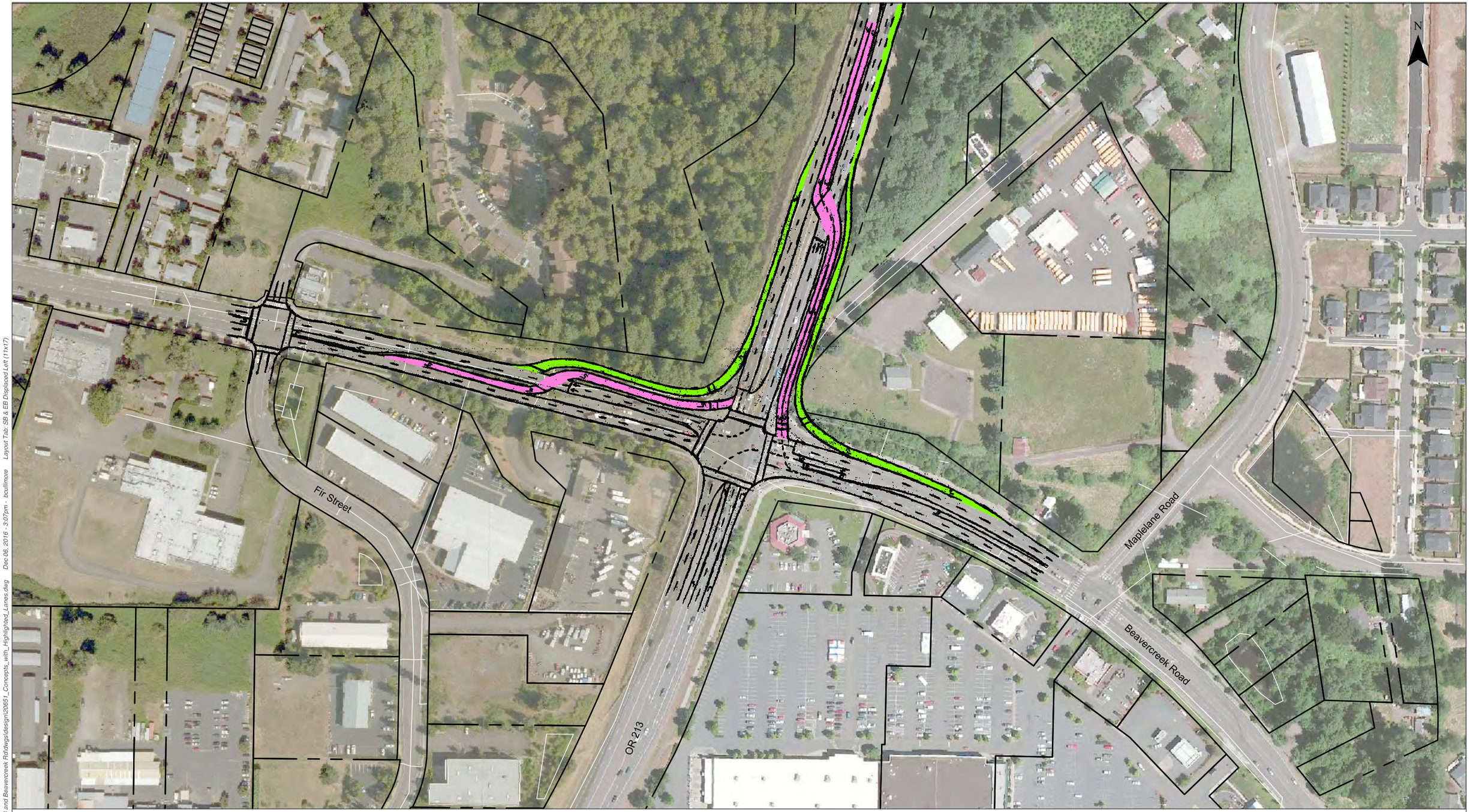

= New Lanes

SCALE
0 200 400

Alternative 4: Southbound & Eastbound Displaced Left Turn
Oregon City, Oregon

Figure
4

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Alternatives 5 – 7: Grade-Separated Interchange Alternatives

Several grade-separated interchange configurations were considered including full diamond, half diamond (i.e., southbound off-ramp and northbound on-ramp only) and single-point interchanges. A project to constructing an interchange at this location was removed from the TSP in the 2013 Update at the request of ODOT as it was determined to be financially unfeasible given other regional priorities.

The construction of an interchange at the OR213/Beavercreek Road intersection would have many challenges and impacts on surrounding land uses as shown in Exhibits 3 through 5.

Exhibit 3. Half Diamond Interchange Alternative

Exhibit 4. Full Diamond Interchange Alternative

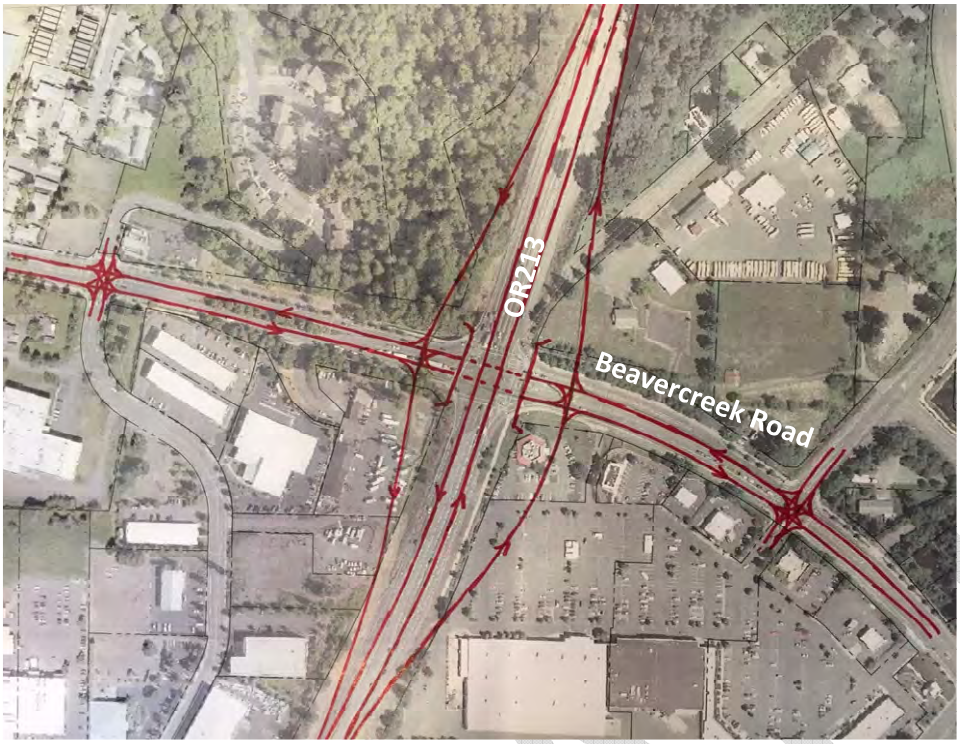
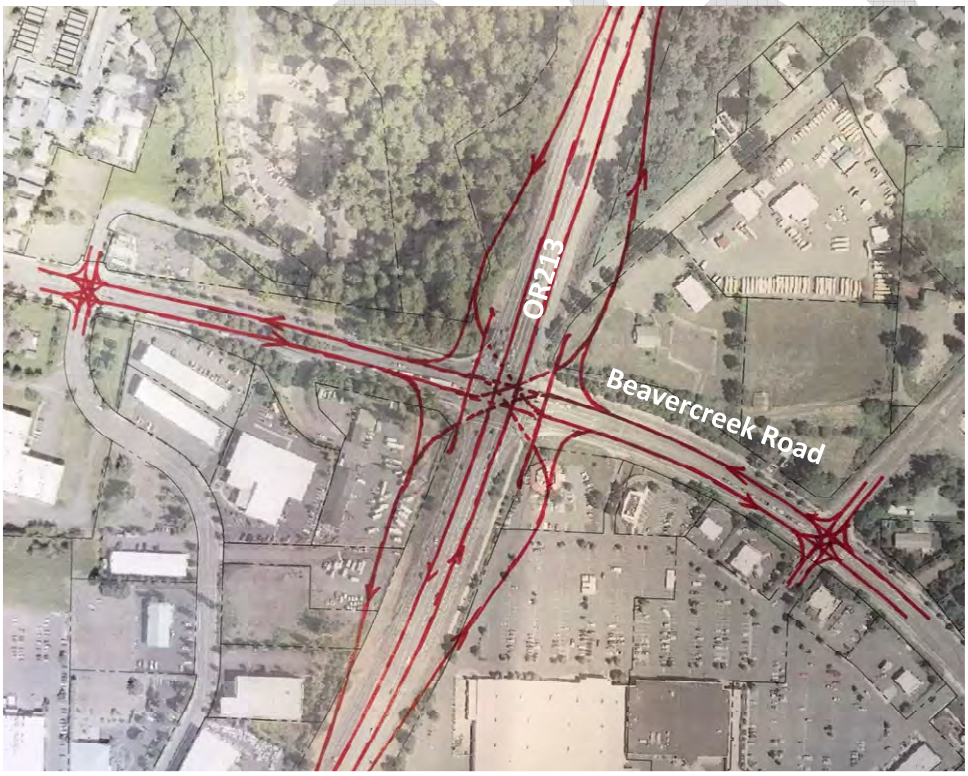


Exhibit 5. Single Point Interchange Alternative



ALTERNATIVES EVALUATION

The following provides an overview of operational analysis conducted on each alternative and summarizes the qualitative assessment for each alternative.

Operations Analysis

Planning level operational analysis was conducted using the CAP-X tool developed by FHWA[2], which can be used to evaluate alternative intersection forms and interchanges. The tool provides a total intersection (v/c) ratio. It was used for all alternatives to provide a consistent comparison of alternatives, but was found to be less conservative than Synchro in the base condition. **Table 2** summarizes the v/c ratios provided by CAP-X for each alternative. If one of these alternatives is identified as potential viable solution, it should be modeled in VISSIM to refine the forecast v/c ratio.

Table 3 – CAP-X Alternatives Operations Analysis Summary (Year 2035)

Alternative		v/c	Figure/Exhibit
1	Lane Additions: Triple Southbound Left-Turn Lanes and Three Northbound Thru Lanes	0.90	Figure 2
2	Indirect Left (S/W Quadrant Road) with Three Southbound and Eastbound Thru Lanes	0.94	Exhibit 2
3	Southbound Displaced Left-Turn	0.86	Figure 3
4	Southbound and Eastbound Displaced Left-Turns	0.81	Figure 4
5	Full Diamond Interchange with Dual Eastbound and Westbound Left-Turn Lanes	0.82	Exhibit 3
6	Half Diamond Interchange with Dual Eastbound Left-Turn Lanes	0.79	Exhibit 4
7	Single Point Interchange with Dual Eastbound and Westbound Left-Turn Lanes	0.80	Exhibit 5

As shown, all alternatives meet the mobility standard. Differences on their costs and impacts are provided in the following section.

Alternatives Assessment

Each of the alternatives was qualitatively evaluated for its impact to the intersection capacity, right-of-way impacts, environmental impact, bicycle and pedestrian impacts, cost, connectivity, and dependence on other projects. These factors are discussed below and summarized in **Table 4**.

[2] Transportation Systems Institute (TSI). *Capacity Analysis for Planning of Junctions*. Version 1.2. 2011. http://tsi.cecs.ucf.edu/index.php/cap-x

Capacity

Each of the alternatives provides sufficient capacity to meet the current mobility standard in 2035. However, the triple left-turns and indirect left alternatives (Alternatives 1 and 2) still have an overall v/c ratio equal or greater than 0.90 and may represent a short-term fix rather than a long-term solution or may not provide benefit commensurate with the costs. The displaced left-turn alternatives (Alternatives 3 and 4) provide additional capacity nearly equal to the grade-separated interchange alternatives (Alternatives 5, 6 and 7) at a significantly lower cost.

Right-of-Way Impacts

Alternatives 1, 3, and 4 may be feasible within the existing right-of-way. Alternative 2 would require right-of-way through a vacant parcel to connect OR213 to Fir Street. All of the grade separated interchange alternatives include large impacts to the right-of-way. The half diamond interchange reduces right-of-way takes as compared to the full diamond interchange without eliminating necessary movements through the intersection.

Environmental Impacts

For all alternatives, any widening on the north side of Beavercreek Road, east or west of OR213 would impact the stream and wetlands and require mitigation. They would also require extending the existing culvert crossing under OR213 on the north side of Beavercreek Road and reconstruction of the retaining walls in the northwest and northeast corners of the intersection. Additional investigation is necessary to fully understand the costs of these potential impacts and to determine if the culvert can be extended or has to be upgraded or if the widening could be accommodated utilizing existing right-of-way on the south side of Beavercreek Road.

Alternative 1 is the only alternative with the potential to not impact the northwest and northeast corners. Alternative 3 may impact the northeast corner only. Alternatives 2 and 4 would impact the northwest and northeast corners and Alternatives 5, 6, and 7 would have significant impacts in the northwest and northeast quadrants.

Bicycle and Pedestrian Impacts

All alternatives can accommodate bicycles and pedestrians; however, Alternatives 1 and 2 include additional through lanes and would increase the intersection crossing distances which is an undesirable impact. Alternatives 3 and 4 reduce the crossing distances but result in two-stage crossing of some legs of the intersection. Alternatives 5, 6, and 7 increase and decrease crossing distances depending on the leg of the intersection and result in cyclists and pedestrians navigating two major intersections instead of one.

Cost

The costs of adding additional lanes, indirect lefts, or displaced left-turns are all of similar magnitude and may require extending or reconstructing the culvert and reconstructing retaining walls.

Alternatives 3 and 4 also require the addition of partial signals on one or both of the southbound and eastbound legs of the intersection, respectively. Each of the interchange alternatives (Alternatives 5, 6 and 7) are assumed to be cost-prohibitive at a minimum cost of $25,000,000.

Connectivity

Turning movements to and from the south leg of OR213 are minimal due to the presence of parallel routes and/or other road network connections. The half diamond interchange alternative (Alternative 6) eliminates these movements, thereby improving capacity at the intersection. There is the potential to further improve the capacity of the displaced left-turn alternatives (Alternatives 3 and 4) by prohibiting the northbound and westbound left-turn movements as these movements have minimal traffic volumes; however, this is not a requirement of the alternatives. The connectivity improvements in the TSP are important to the flexibility and viability of these alternatives.

Dependence on Other Projects

As noted in the discussion of connectivity above, the half diamond interchange alternative (Alternative 6) is dependent on other projects in the area to provide the parallel routes necessary to accommodate the movements eliminated from the OR213/Beavercreek Road intersection. The practicality of the additional northbound through lane in the triple left-turns alternative (Alternative 1) is also dependent on the provision of road extensions, particularly the planned Meyers Road extension to OR213.

Table 4 – Alternatives Evaluation

Alternative		Additional Capacity	Right-of-Way Impacts	Environmental Impact	Bike/Ped Impacts	Cost	Eliminates Movements ?	Dependent on Connectivity Extensions?
	Existing	None	None	None	No Improvement	NA	No	Yes
1	Triple Southbound Left / Three Northbound Thru	Some	None to Minimal	None to Minimal	Increased Crossing Distances	Medium ($5-$10M)	No	Yes
2	Indirect Left (S/W Quadrant Road)	Some	New Connection on Industrial Land	NW and NE Corners	Increased Crossing Distances	Medium ($5-$8M)	No	No
3	Southbound Displaced Left-Turn	Significant	None to Minimal	NE Corner	Reduced Crossing Distances	Medium ($5-$10M)	Would provide additional benefit	No
4	Southbound and Eastbound Displaced Left-Turns	Significant	None to Minimal	NW and NE Corners	Reduced Crossing Distances	Medium ($8-$12M)	Would provide additional benefit	No
5	Full Diamond Interchange	Significant	High	NW and NE Quadrants	Two intersections	High (>$25M)	No	No
6	Half Diamond Interchange	Significant	High	NW and NE Quadrants	Two intersections	High (>$25M)	Yes	Yes
7	Single Point Interchange	Significant	High	NW and NE Quadrants	Two intersections	High (>$25M)	No	No

Consistency with Policies

The City will continue to assess if any of the alternatives are in conflict with regional land use or transportation policy frameworks or with state or locally adopted policies. Input from the Technical Advisory Group will be collected on this issue.

SUMMARY

The OR213/Beavercreek Road intersection is forecast to not meet the current mobility standard by 2035. Each of the alternatives identified above provides sufficient capacity to meet the current standard in 2035; however, the additional capacity is provided at varying degrees and each alternative has cost and other impacts to consider in determining if they are feasible solutions for the City. If none of the alternatives is found to be feasible, an alternative mobility target approach needs to be pursued.

NEXT STEPS

Alternatives will be reviewed with the TAG and CAG to determine if any should be further explored in more detail and/or if an alternative mobility target should be pursued.

Future meetings with the TAC and CAG are planned to discuss potential alternative mobility targets and ultimately select an alternative mobility target and/or preferred improvement(s) to be adopted into the city's TSP by the Planning Commission and City Council. Alternative mobility targets will also need to be agreed upon by ODOT and approved by the Oregon Transportation Commission.

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MEMORANDUM #2

Date: February 24, 2017

Project #: 20651

To: Dayna Webb, P.E.
Public Works Department
City of Oregon City
625 Center Street
Oregon City, Oregon 97045

From: Susan Wright, P.E. and Kristine Connolly

Project: Highway 213 & Beavercreek Road Alternative Mobility Targets (PS 16-024)

Subject: Alternative Mobility Target Methodology and Feasible Improvements

Oregon City's 2013 Transportation System Plan (TSP) determined that the Highway 213 (OR213) corridor from Redland to Molalla Avenue (including the intersection of Beavercreek Road) will exceed the current mobility target in 2035, resulting in more congestion than is allowed. The TSP recommended a project be conducted to identify what improvements may be necessary to meet the current target or whether an alternative mobility target is necessary. Potential improvements for the intersection of Beavercreek Road and Highway 213 were presented to the Technical Advisory Group (TAG) and Community Advisory Group (CAG) in December 2016 and January 2017, respectively. The feasibility of these alternatives is still under review; however, it is likely that none of the alternatives will be found to be cost-feasible in the near-term and although portions of the improvements may be implemented, an alternative mobility target will be necessary. This memorandum provides a menu of potential measures that could be used for establishing an alternative mobility target, reasonable target ranges, and a list of potentially feasible improvements to increase capacity and safety in the corridor. If mobility cannot be achieved, these measures and improvements will be reviewed and discussed with the TAG and CAG to select a target methodology and appropriate range, as well as recommend improvements.

POLICY CONTEXT

Mobility targets are the measure by which the state assesses the existing or forecasted operational conditions of a facility. As such, they are a key component the Oregon Department of Transportation (ODOT) uses to determine the need for, or feasibility of providing highway, or other transportation system improvements. They impact local land use and transportation planning as well as development review. Recent years have seen notable changes to Oregon's transportation planning and land use

policies and requirements. These changes reflect statewide policy to support transportation solutions that encourage economic development, contribute to public health, offer multi-modal choices for all users, and reflect the uncertain fiscal realities and limited transportation funding.

Oregon's Transportation Planning Rule (TPR)

Mobility targets for state highways, as established in this policy or as otherwise adopted by the Oregon Transportation Commission (OTC) as alternative mobility targets, are considered the highway system performance standards in compliance with the Transportation Planning Rule (TPR) (OAR 660-012), including applicability for actions that fall under Section -0060 of the TPR.

The TPR Section -0060 applies when cities or counties are considering zone changes or plan amendments that would allow for additional development that would significantly impact or worsen the performance of existing or planned transportation facilities. Currently, significant impacts are found to exist when levels of automobile traffic cause roadway facilities to exceed motorized vehicle standards, such as mobility targets. If there is a significant impact, jurisdictions are required to *"ensure that allowed land uses are consistent with the identified function, capacity, and performance standards of the facility measured at the end of the planning period identified in the adopted Transportation System Plan."*

EXISTING PERFORMANCE MEASURE AND TARGET

Mobility, or congestion, may be measured and regulated in a variety of ways. In the context of this project, mobility performance measures are methods to objectively measure the transportation system, such as travel time, or reliability. Mobility targets describe an acknowledged acceptable level of performance for a measure, such as a certain level of congestion.

The existing mobility target for the OR213/Beavercreek Road intersection set forth in the Oregon Highway Plan (OHP) and the 2013 TSP is based on volume-to-capacity Ratio (v/c). The v/c ratio is a measure that reflects mobility and quality of travel. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). For example, a v/c of 1.00 indicates the roadway facility is operating at its capacity. An intersection can have an overall v/c ration of 1.00 yet have v/c ratios greater than 1.00 for individual movements where it may take more than one signal cycle to get through the intersection and queues build up. The following mobility target is set forth in the 2013 TSP for the OR213/Beavercreek Road intersection:

- During the highest one-hour period of the day, a maximum volume-to-capacity (v/c) ratio of 0.99 shall be maintained.

The Synchro model (a traffic model used to evaluate v/c ratios and other metrics) analysis completed for the 2013 TSP shows the intersection operating with an intersection v/c ratio of 0.83 for the p.m. peak hour under 2011 existing conditions. The TSP analysis also indicates that by 2035, without improvement, the intersection will function beyond the current mobility target. Under 2035 Planned

System Conditions (which includes planned, but potentially unfunded, roadway improvements), the intersection is expected to operate with a v/c ratio of 1.05, exceeding the existing mobility target (a maximum v/c ratio of 0.99). Under 2016 traffic volumes, the intersection operates with a v/c ratio of 0.97, just below the existing mobility target. The southbound left-turn and eastbound left-turn movements exhibit higher than average v/c ratios, while the westbound left-turn and northbound left-turn movements exhibit lower than average v/c ratios.

Table 1 – OR213/Beavercreek Road Intersection Operations

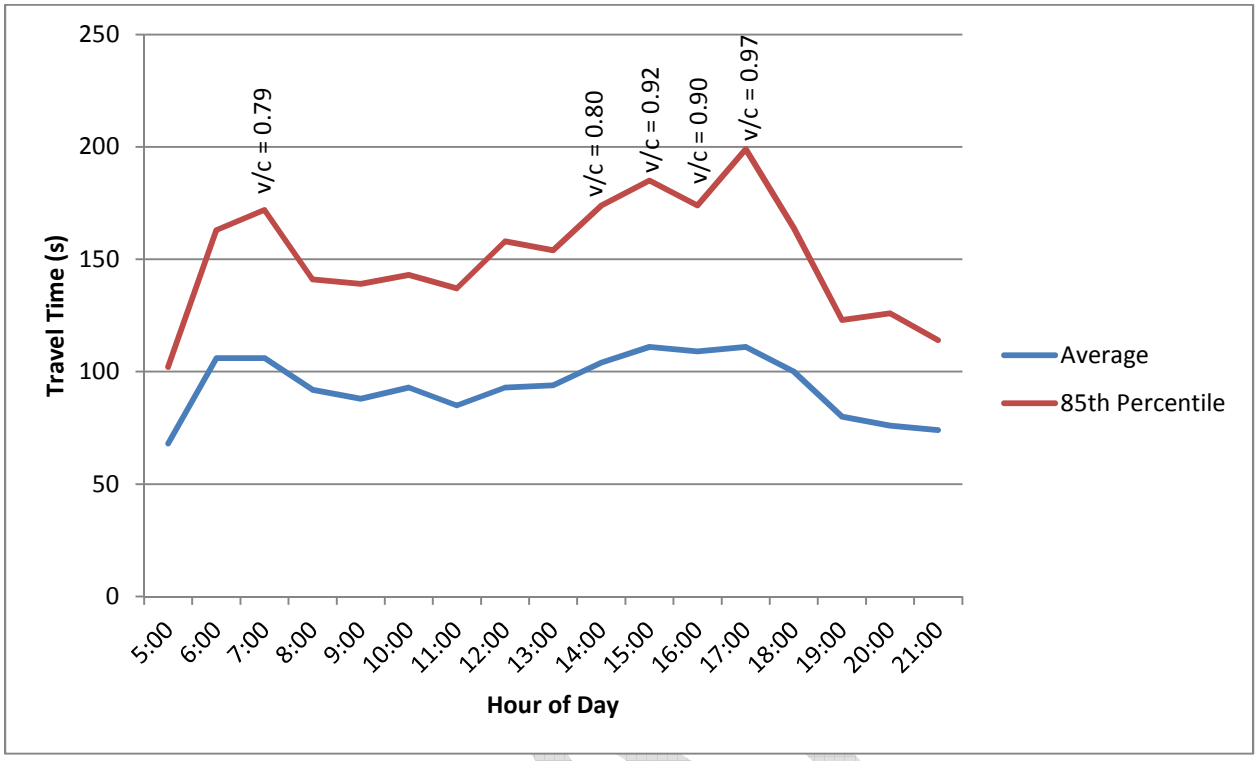
Year	PM Peak Volume-to-Capacity Ratio (v/c)
2011 (2013 TSP Existing Conditions)	0.83
2016 Traffic Volumes	0.97
2035 (2013 TSP Forecast)	1.05

Peak Hours

A travel time study was conducted at the OR213/Beavercreek Road intersection in January 2017 to evaluate the variability of traffic conditions throughout the day. This study utilized BlueTooth data collection units (BlueMAC) at each leg of the intersection to identify the travel speed and travel time for each movement (northbound left, northbound through, northbound right, etc.) separately[1]. The data was collected 24-hours per day for 7 days, allowing comparison of results by time of day and day of week. Attachment "A" provides the differences in travel time by time of day for each movement at the intersection. The data in Attachment "A" reflects typical weekday conditions (Tuesday, Wednesday, and Thursday). Exhibit 1 shows the travel time through the intersection averaged for all movements. Note that the graph provides the average travel time to traverse the intersection; some movements may experience higher travel times. The weekday PM peak hour represents the highest travel times of the day, with higher than average travel times extending from 3:00 to 6:00 PM. Above average travel times also occur during weekday midday and AM peak hours. There are approximately 5 hours per day currently experiencing high travel times compared to the rest of the day which could indicate congestion and possible cycle failure for some movements. This can be considered in evaluating the potential performances measures in the following section.

[1] Data was collected at a distance of approximately 1000' from the intersection on each leg, with the exception of the north leg, where data was collected approximately 2000' from the intersection.

Exhibit 1 –Travel Time through OR213/Beavercreek Road Intersection



The cycle length of the traffic signal at the OR213/Beavercreek intersection is approximately 120 seconds. Exhibit 1 shows that during the a.m. and p.m. peak hour periods, the average time it takes to traverse the intersection is 110 seconds. Average travel time and v/c ratio are not directly linked; however, the average travel times increase and decrease with v/c ratio. Table 2 provides volume-to-capacity ratios for the five highest volume hours of the day. These v/c ratios are noted on Exhibit 1 during their corresponding hour.

Table 2 – 2016 Existing Intersection Operations for the Five Highest Volume Hours (OR213/Beavercreek Road)

Highest Hour	Time of Day	Total Entering Volume	V/C
1st	5-6 PM	6059	0.97
2nd	4-5 PM	5858	0.90
3rd	3-4 PM	5623	0.92
4th	2-3 PM	4972	0.80
5th	7-8 AM	4619	1.04[2]

[2] The v/c ratio for the AM peak hour is 1.04 due the high volume of westbound right-turns. If the westbound right-turns are excluded the intersection v/c is 0.79. This is under further review.

Oregon Highway Plan Policy 1F

The Oregon Highway Plan (OHP) defines polices and investment strategies for Oregon's state highway system for the next 20 years. The OHP gives policy and investment direction to corridor plans and transportation system plans that are being prepared around the state, but it leaves the responsibility for identifying specific projects and modal alternatives to those plans.

The OHP Policy 1F establishes mobility targets (as defined by motorized vehicle volume-to-capacity ratios) for state facilities that vary by region, facility classification, and whether or not the roadway is located inside an urban growth boundary (UGB). It states, *"It is the policy of the State of Oregon to maintain acceptable and reliable levels of mobility on the state highway system, consistent with expectation for each facility type, location and functional objectives. Highway mobility targets will be the initial tool to identify deficiencies and consider solutions for vehicular mobility on the state system. Specifically, mobility targets shall be used for:*

- *Identifying state highway mobility performance expectations for planning and plan implementation;*
- *Evaluating the impacts on state highways of amendments to transportation plans, acknowledged comprehensive plans and land use regulations pursuant to the Transportation Planning Rule (OAR 660-12-0060); and*
- *Guiding operations decisions such as managing access and traffic control systems to maintain acceptable highway performance."*

The OHP Policy 1F allows for development of alternative mobility targets in areas where it is "infeasible or impractical to meet the mobility targets". The policy allows for the use of alternative mobility targets to *"balance overall transportation system efficiency with multiple objectives of the area being addressed."* It requires that targets *"shall be clear and objective and shall provide standardized procedures to ensure consistent application of the selected measure. The alternative mobility target(s) shall be adopted by the Oregon Transportation Commission as an amendment to the OHP."* The OHP currently includes alternative mobility targets in many locations throughout the State; however, none have been adopted within the Portland Metro area to date.

MAJOR IMPROVEMENT ALTERNATIVES (MEMORANDUM #1)

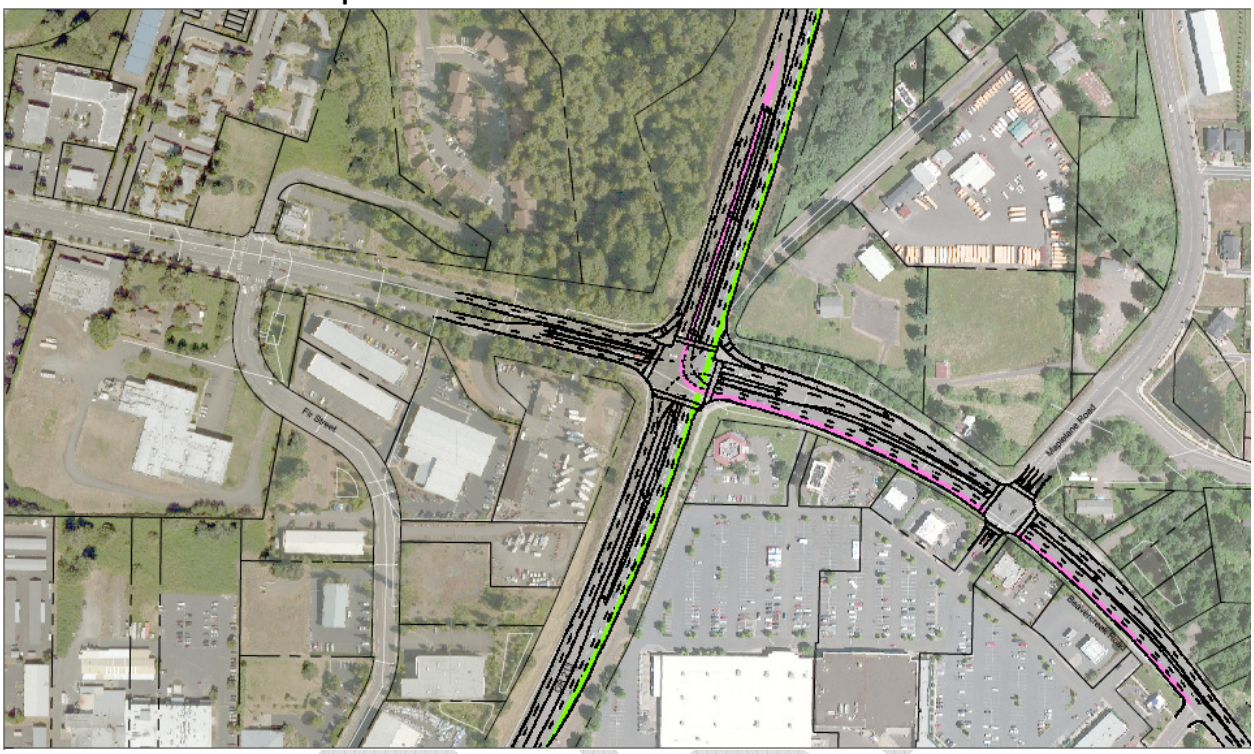
The following alternatives from Technical Memorandum #1 are still under review to determine physical and financial feasibility. This additional work will discussed at the next set of advisory committee meetings. Table 5 lists these alternatives, as well as their relative benefits, constraints, opportunities, and risks.

Alternative 1: Triple Left-Turns

Add a third southbound left-turn lane and a third northbound through lane through the intersection while continuing to maintain a separate northbound right-turn lane (not reflected in Exhibit 2). This is

projected to operate at a v/c ratio of 0.90 in the 2035 TSP horizon year. A conceptual sketch of Alternative 1 can be seen in Exhibit 2.

Exhibit 2 – Alternative 1: Triple Left-Turns

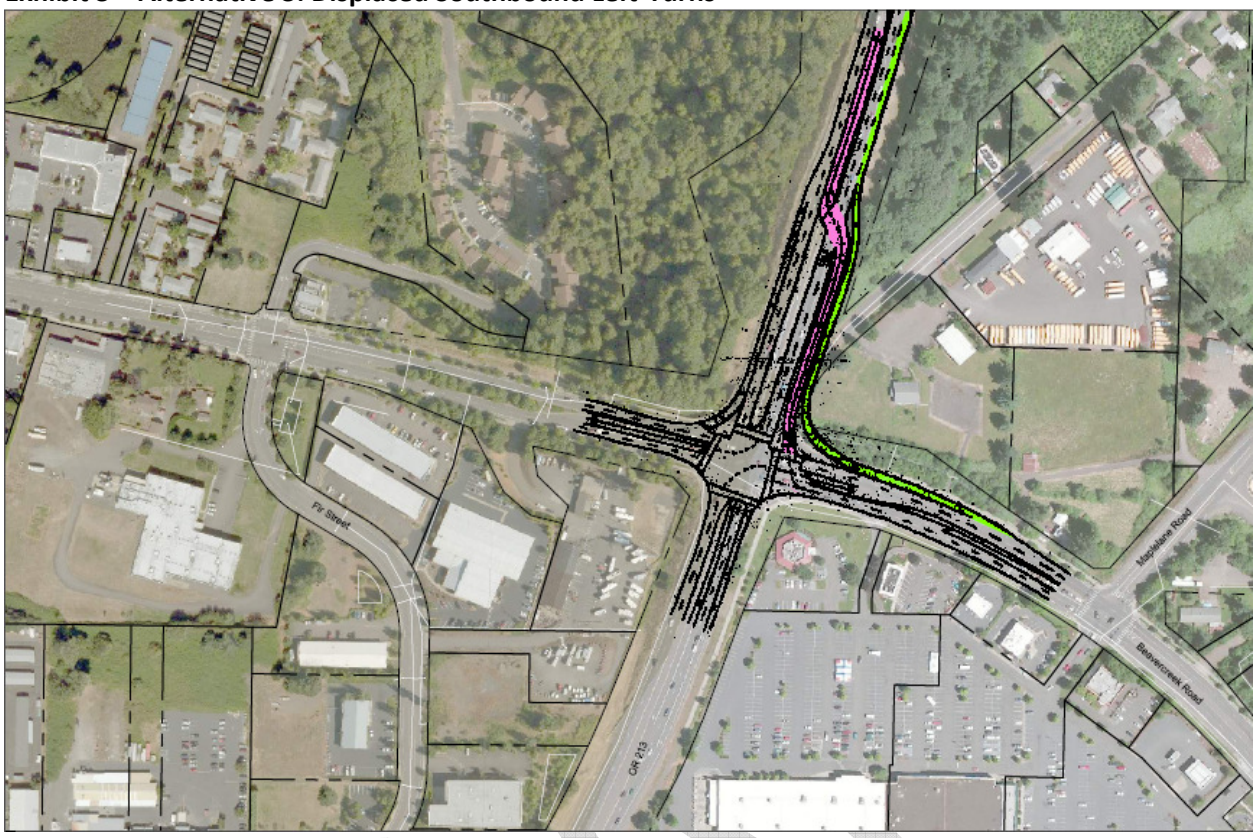


Alternative 3: Displaced Southbound Left-Turns

Construct a southbound displaced left-turn[3] (or continuous flow) intersection. Displaced left-turns reduce the number of signal phases and conflict points at the intersection, thereby improving capacity and safety, but require coordinated partial signals on the approaches with displaced left-turns. Alternative 3 likely includes impacts to the culvert and retaining walls in the northeast corner of the intersection. A conceptual sketch of Alternative 3 can be seen in Exhibit 3.

[3] Steyn, H., Z. Bugg, B. Ray, and A. Daleiden. *Displaced Left-Turn Informational Guide.* FHWA, Washington, D.C., 2014. http://safety.fhwa.dot.gov/intersection/alter_design/pdf/fhwasa14068_dlt_infoguide.pdf

Exhibit 3 – Alternative 3: Displaced Southbound Left-Turns



Alternatives 5 and 7

A project to construct an interchange at this location was removed from the 2013 TSP Update. The interchange was eliminated due to livability, multi-modal access and funding constraints within the 2035 planning horizon. Additionally, at the request of ODOT as it was determined to be financially infeasible given other regional priorities. Conceptual sketches of Alternatives 5 and 7 can be seen in Exhibits 4 and 5, respectively.

Exhibit 4 – Full Diamond Interchange

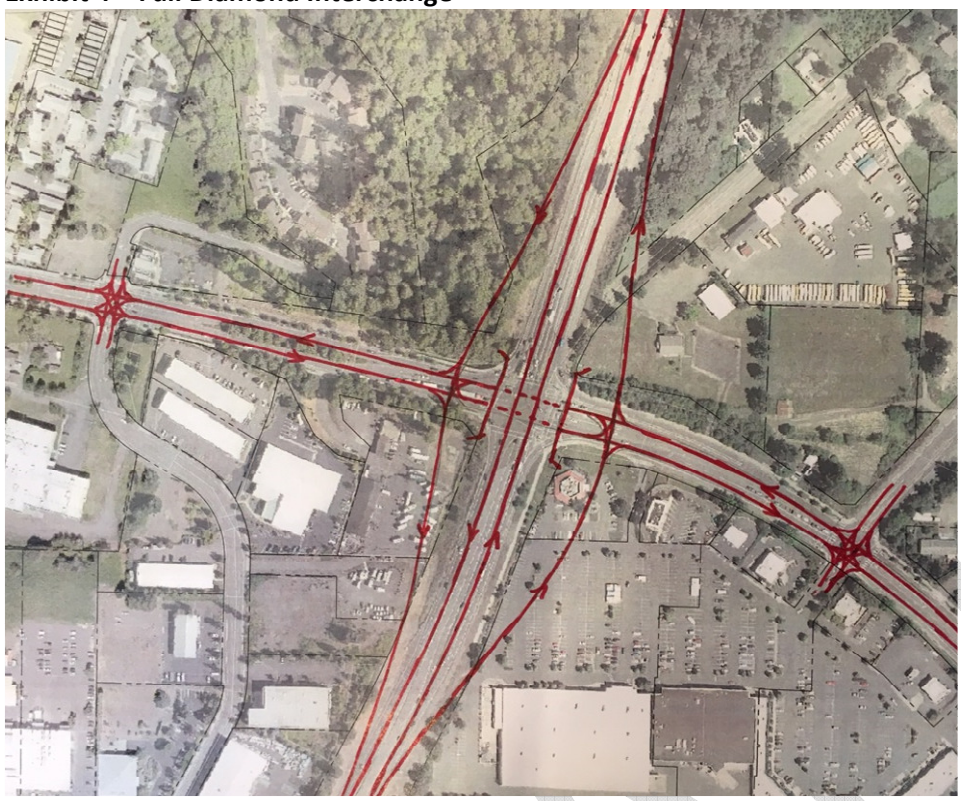


Exhibit 5 – Single Point Interchange

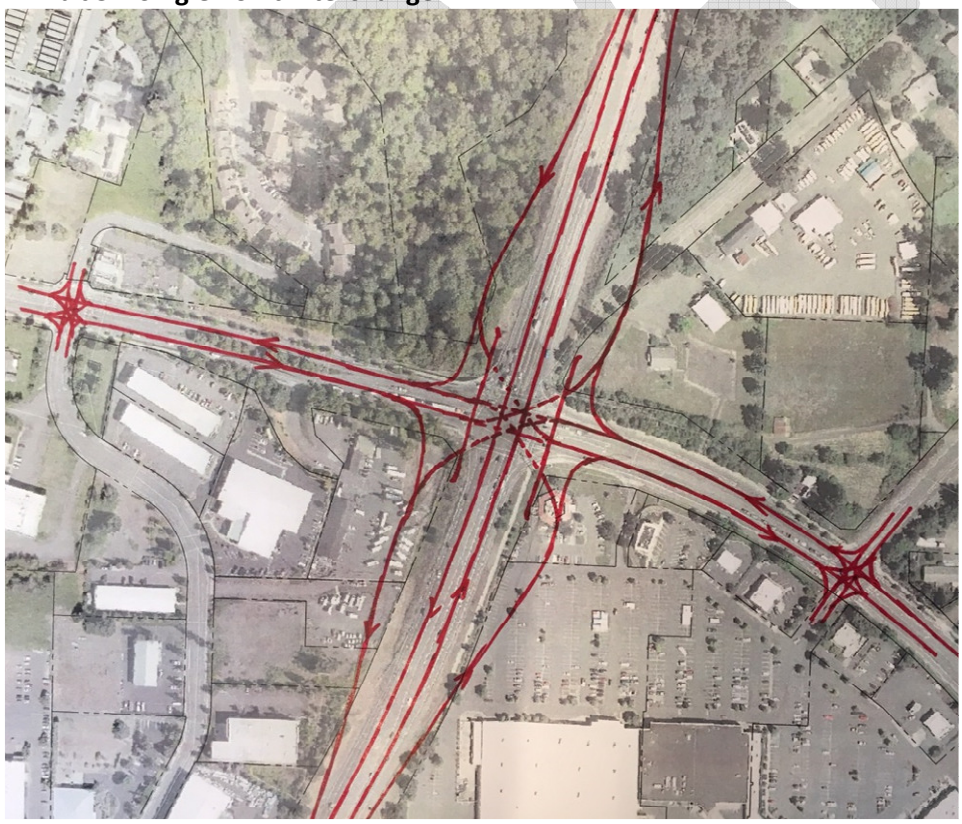


Table 3 – Intersection Alternatives Considered

Alternative	Benefits	Opportunities	Constraints	Risks
Alternative 1: Triple Left-Turns	Meets current mobility target in 2035	North and east legs of intersection	Cost; vehicle navigation of three left-turn lanes	Increase sideswipe crashes through turn and downstream weave
Alternative 3: Displaced Southbound Left Turns	Meets current mobility target in 2035	North leg of intersection	Cost; impact to existing culvert and retaining walls	Driver confusion with uncommon intersection type
Alternative 5: Full Diamond Interchange	Meets current mobility target in 2035; greatly increases capacity for through traffic on OR213	All approaches of the intersection	Cost; right-of-way	Increased intersection exposure (i.e., two large ramp terminals) for pedestrians and bicyclists
Alternative 7: Single-Point Interchange	Meets current mobility target in 2035; greatly increases capacity for through traffic on OR213	All approaches of the intersection	Cost; right-of-way	

POTENTIAL PERFORMANCE MEASURES

The OR213/Beavercreek Road intersection is currently experiencing deficiencies in capacity and safety for vehicular modes of travel. Mobility is currently measured by using v/c to measure the average level of congestion for motorists entering all legs of an intersection. With this project, we will explore the menu of options available to measure congestion both at an intersection and along the Highway 213 corridor, from Redland Road to Molalla Avenue. While it is important that the intersection be complete and accessible by all modes, the potential performance measures set forth in this memorandum primarily address vehicle mobility. Table 3 provides a menu of potential alternative mobility measures and reasonable target ranges which can be used in development review. The menu was developed based on a performance measure literature review of published engineering manuals, rating systems, and academic sources conducted by Kittelson & Associates, Inc.

Table 4 – Potential Performance Measures and Alternative Mobility Target Ranges

Measure	Definition	Potential Target	Ease of Application
Mobility			
Volume to Capacity (v/c) Ratio	This is the current performance measure, measured as an average of all potential movements through an intersection. V/C ratio is a measure that reflects mobility and quality of travel. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). For example, a v/c of 1.00 indicates the roadway facility is operating at capacity. *Existing and Forecast v/c ratios:* Year 2011: 0.83 Year 2016: 0.97 Year 2035: 1.05	Maintain current target of 0.99, but allow intersection to exceed this ratio for no more than a specified number of hours per day. OR Increase current target to a higher ratio, such as 1.1, not to be exceeded during the peak hour of the day.	Could be applied with existing analysis tools used in Traffic Impact Studies. May require additional hours of traffic count data collection.
Intersection Delay	The average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. *Existing and Forecast Intersection Delay:* 2011: 40.7s 2016: 56.8s 2035: 73.4s	Average intersection delay shall not exceed "X" seconds during the peak hour of the day. OR Average intersection delay shall not exceed "X" seconds for more than a specified number of hours per day.	Could be applied with existing analysis tools used in Traffic Impact Studies. May require additional hours of traffic count data collection.
Intersection Level of Service (LOS)	A quantitative stratification on an A through F scale that represents a traveler's perceptions of quality of service by a facility. For autos, level of service is based on the average delay. *Existing and Forecast Intersection LOS:* 2011: D 2016: E 2035: E	Maintain overall intersection LOS of "X" or better during the peak hour of the day. Individual movements may exceed this LOS. OR Maintain overall intersection LOS of "X" or better for more than a specified number of hours per day.	Could be applied with existing analysis tools used in Traffic Impact Studies. May require additional hours of traffic count data collection.
Critical Movement Delay	A measure of delay at an intersection for the critical movement. *Existing and Forecast Critical Movement Delay:* 2011: EBL 60s 2016: EBL 112s 2035: EBL 123s	Critical movements (southbound left turn, northbound through, eastbound left turn and westbound through) may not exceed a delay of "X" seconds per vehicle during the peak hour of the day. OR Critical movement delay may not exceed "X" seconds per vehicle for more than a specified number of hours per day.	Could be applied with existing analysis tools used in Traffic Impact Studies. May require additional hours of traffic count data collection.

Average Travel Time	A measure of the time it takes, on average, for a vehicle to navigate the intersection, including queued time for red light or congestion.	Average travel time through the intersection or corridor may not exceed "X" minutes for any movement. OR Average travel time through the intersection or corridor may not exceed "X" minutes for any movement for more than a specified number of hours per day.	Would require travel time data collection and additional tools to predict future travel time.
Travel Time Reliability	Travel time reliability measures the variability in the expected travel time vs. the actual travel time experienced due to demand fluctuations, traffic control devices, traffic incidents, weather, work zones, and physical capacity. ▪ Buffer Index – compares the 95th percentile travel time to the average travel time. 95th percentile travel time is the time you would plan for your trip in order to be on-time 95% of the time. A buffer index of 45% means the 95th percentile travel time is 45% longer than the average travel time and you must plan 45% more time for your trip to be on time 95% of the time. ▪ Planning Time Index –compares the 95th percentile travel time to the free flow travel time. For example, 2.25 means the 95th percentile travel time is 2.25 times as long as when conditions are free-flowing. Can be measured by comparing peak hour travel time to off-peak travel time through the intersection.	Buffer Index shall not exceed "X"%. OR Planning Time Index shall not exceed "X".	Would require travel time data collection and use of Dynamic Travel Assignment model to predict future travel time reliability.
Average Speed	The average speed (including stopped time) at which a vehicle is able to navigate through the intersection. This is typically slower for turning vehicles than for through vehicles.	Average speed through the intersection or corridor shall be within a specified range during the peak hour of the day.	Would require speed data collection and additional tools to predict future travel speeds.
Congestion Duration	The proportion of the day, in hours, that an intersection experiences congestion.	Allow the intersection to exceed one of the above targets for a specified number of hours per day.	Could be applied with existing analysis tools used in Traffic Impact Studies. May require additional hours of traffic count data collection.

Intersection Completeness	Percent of facilities that are constructed. May consider whether facilities are built to current standards.	Intersection shall include: ▪ Complete bicycle facilities up to stop bar ▪ Bicycle boxes and bicycle pavement markings to serve designated bicycle routes ▪ Detection and actuation for bicycles ▪ Countdown signal displays for pedestrians ▪ Lighting	No new data or analysis required.
Safety			
Crash Rate	The rate of crashes occurring at an intersection or on a segment, often measured in crashes per million entering vehicles or crashes per million VMT.	Lower predicted crash rate than existing condition ▪ Total crashes by mode per million entering vehicles ▪ Total fatal and serious injury crashes by mode per million entering vehicles	Easy to calculate. Any increase in trips from development would have an impact on the measure. These could be difficult to mitigate once all identified safety improvements at a location are complete but could result in implementation of systemic safety countermeasures.
Crash Frequency	The number of crashes occurring at a site, facility, or network in a one year period. Can be differentiated by severity.	Lower predicted crash frequency than existing condition ▪ Total crashes by mode ▪ Total fatal and serious injury crashes by mode	
Excess Proportions of Specific Crash Types	This is the difference between the observed proportion of a specific crash type for a site and the threshold proportion (such as a statewide average) for the reference population.	Specific crash type rates shall not exceed average statewide crash rates by more than ”X%”.	

In the context of long-term planning, safety measures and intersection completeness can be used to determine whether planned improvements are adequate to accommodate growth. However, in development review they can only be used to make sure that the appropriate improvements or proportionate share of improvements have been provided.

SAFETY AND CAPACITY IMPROVEMENTS

Safety and capacity improvements to OR213 from Redland Road to Molalla Avenue (including the Beavercreek Road intersection) could be implemented in tandem with the proposed alternative mobility target. These approaches, while not providing adequate capacity to meet the current mobility target, would increase capacity and/or safety at the intersection, providing an overall improvement. Table 4 lists these improvements, as well as their relative benefits, constraints, opportunities, and risks.

Table 5 – Intersection Improvement Approaches Considered

Improvement	Benefits	Opportunities	Constraints	Risks
Increase all-red time	Reduces red-light running crashes, particularly turning and angle crashes	All approaches of the intersection	Reduces intersection capacity and increases queueing. Helps reduce turning and angle crashes, which are not prevalent at this intersection.	Increase rear-end crashes, the most common type at signalized intersection
Install red-light cameras	Reduces red-light running crashes, particularly turning and angle crashes	All approaches of the intersection	Community Opposition. Helps reduce turning and angle crashes, which are not prevalent at this intersection.	Increase rear-end crashes, the most common type at signalized intersection
Increase shoulder width	Safer bicycle travel	North leg of intersection	Costs/Impacts to retaining wall	N/A
Install pedestrian countdown signal displays	Increase safety and ease for pedestrians	All approaches of the intersection	N/A	May require costly improvements to comply with the Americans with Disabilities Act (ADA)
Improve lighting	Increase safety for all modes	North and south legs of intersection	N/A	N/A
Provide acceleration lane for WB to NB right turning vehicles	Reduce queuing between OR213 and Maple Lane, and increase capacity of westbound approach	North leg of intersection	Retaining wall in northeast corner of the intersection	Increase sideswipe crashes
Eliminate westbound left-turn lane and extend eastbound left turn storage onto Maple Lane	Reduce queuing and crashes related to queues on Beavercreek Road at Maple Lane	East leg of intersection	Rerouting of westbound lefts to Meyers Road and potential increased travel time	Confusion by drivers resulting in illegal maneuvers

SUMMARY

The OR213 corridor from Redland Road to Molalla Avenue (including the Beavercreek Road intersection) is forecasted to exceed the current mobility target by 2035. Each of the alternatives identified in the Technical Memorandum #1 provides sufficient capacity to meet the current standard

in 2035; however, the additional capacity is provided at varying degrees and each alternative has cost and other impacts to consider in determining if they are feasible solutions for the City. If none of the alternatives is found to be feasible, an alternative mobility target approach needs to be pursued.

This memorandum provided the policy context for intersection performance measures, a menu of potential measures that could be used for establishing an alternative mobility target, reasonable target ranges, and a list of potentially feasible low-cost improvements to improve operations and increase safety at the intersection.

NEXT STEPS

Potential measures and alternative mobility target ranges will be reviewed with the TAG and CAG. Future meetings with the TAG and CAG are planned to discuss the feasibility of intersection improvements and potential alternative mobility measures and targets. Any changes will likely require a Legislative public review process before the City's Planning Commission and City Commission. If the project concludes that alternative mobility targets and measures will be needed, they will need to be agreed upon by ODOT and approved by the Oregon Transportation Commission.

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MEMORANDUM

Date: April 14, 2017

Project #: 20651

To: Dayna Webb, P.E.
Public Works Department
City of Oregon City
PO Box 3040
625 Center Street
Oregon City, Oregon 97045

From: Susan Wright, P.E., and Kristine Connolly

Project: Highway 213 Corridor Alternative Mobility Targets (PS 16-024)

Subject: Memorandum #3: Financially Feasible Improvements and Alternative Mobility Target Assessment

Oregon City's 2013 Transportation System Plan (TSP) determined that the Highway 213 (OR213) corridor from Redland Road to Molalla Avenue (including the intersection of Beavercreek Road) will exceed the current mobility target in 2035, resulting in more congestion than is allowed. The TSP recommended a project be conducted to identify what improvements would be necessary to meet the current target or whether an alternative mobility target is justified. The OR213 intersection with Molalla Avenue is anticipated to meet the target; however, Beavercreek Road and Redland Road are not anticipated to meet the target. The following memorandum provides an overview of these two intersections including safety, operations, and cost analysis of the potential improvements at these intersections and identifies potential alternative mobility targets that would be necessary in conjunction with financially feasible operational and safety improvements.

OR213/Beavercreek Road

Exhibit 1 below provides an overview of the intersection.

Exhibit 1. Highway 213 (OR213) and Beavercreek Road Intersection

Potential improvements for the intersection of Beavercreek Road and OR213 that focused on significantly increasing the intersection capacity to meet the current mobility target were presented to the Technical Advisory Group (TAG) and Community Advisory Group (CAG) in December 2016 and January 2017. None of the alternatives were determined to be financially feasible, even by the 2035 horizon year of the TSP given the financial constraints of the city and other agency partners. In addition, some of the potential alternatives could have additional consequences including right-of-way impacts, environmental impacts, and could potentially complicate the provision of services for bicyclists, pedestrians, and transit users. Nonetheless, it is recommended that the alternatives be documented in the TSP for additional future consideration as part of the TSP's unconstrained plan. The unconstrained plan includes projects that are not currently anticipated to be financially feasible by 2035 but are projected to be needed and could be implemented if additional funding becomes available in the future.

Because achieving the mobility standard through a major capacity-expanding project at this intersection has been determined to be beyond the financial capabilities of the city and its partner agencies, an alternative mobility target will be necessary. As a result of this study, some improvements were identified that, while not allowing the mobility standard to be fully met, would increase the intersection capacity, improve safety, and are within the financial capabilities of the city and its partner agencies. Safety and operational improvements are identified below that minimize future congestion and can be included in the cost-constrained TSP.

The existing mobility standard for the OR 213/Beavercreek Road intersection set forth in the 2013 TSP is based on volume-to-capacity ratio (v/c). The v/c ratio is a measure that reflects mobility and quality of travel. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). For example, a v/c of 1.00 indicates the roadway facility is operating at its capacity. The following mobility

standard is set forth in the 2013 TSP for the OR213/Beavercreek Road intersection: a maximum volume-to-capacity (v/c) ratio of 0.99 shall be maintained during the peak first and second hours.

A menu of potential alternative performance measures, reasonable target ranges, and a list of potentially feasible improvements to increase capacity and safety in the corridor was presented to the TAG and CAG in March 2017. The majority of TAG and CAG members agreed that an alternative mobility target allowing intersection volume-to-capacity ratios to exceed the existing target of 0.99 for no more than a specified number of hours per day would be appropriate for the corridor. The TAG and CAG were also in favor of further investigation of potential improvements to increase safety and capacity at the Beavercreek Road and OR213 intersection. The specific projects identified by the TAG and CAG for additional analysis were: 1) the provision of an acceleration lane for westbound right-turning vehicles and 2) elimination of the second westbound left-turn lane to increase left-turn storage on eastbound Beavercreek Road at Maple Lane Road.

The following sections provide an assessment of the alternative mobility target and potential financially feasible improvements identified by the TAG and CAG for further consideration at the intersection of OR213 and Beavercreek Road.

OR213/Redland Road

Exhibit 2 below provides an overview of the intersection.

Exhibit 2. Highway 213 (OR213) and Redland Road Intersection

The TSP includes a project to improve capacity at the OR213/Redland Road intersection (identified as project D79). The improvements identified in the TSP are part of Phase 2 of the "Jughandle" project, a project that focused on the intersection of OR213 and Washington Street that was implemented in 2013. The Phase 2 improvements, including improvements at OR213/Redland Road are already 90% designed. The improvements identified in Phase 2 future construction include an additional northbound and southbound through lane resulting in three northbound and three southbound lanes through the intersection. However, these improvements are not part of the financially constrained

plan. Like the OR213/Beavercreek Road intersection, major capacity-increasing improvements at this intersection were determined to be beyond the financial capabilities of the city and its partner agencies during the TSP development process. Lacking the financial capability to implement the identified project, this intersection also requires an alternative mobility target. The target for this intersection should use a similar measure to that of OR213/Beavercreek Road but may have a different number of hours that are expected to exceed the target.

As the intersection of OR213/Redland Road is within the corridor, the scope of this study has been extended to include assessment of financially viable projects that provide safety and operational benefits at the OR213/Redland Road intersection. The specific project identified for additional analysis includes converting the southbound right-turn lane to a shared through/right-turn lane.

The following sections provide an assessment of the alternative mobility target and potential financially feasible improvements for further consideration at the intersection of OR213 and Redland Road.

ALTERNATIVE MOBILITY TARGET AND FINANCIALLY FEASIBLE IMPROVEMENTS ASSESSMENT

The following provides an overview of safety analysis, operations analysis, and cost estimates of potential cost-feasible safety and operational improvements that could be implemented at the OR213/Beavercreek Road and OR213/Redland Road intersections in conjunction with an alternative mobility target.

Safety Analysis

The OR213/Beavercreek Road intersection was identified in the 2013 TSP as a high collision intersection. The Oregon Department of Transportation (ODOT) Crash Analysis and Reporting Unit provided crash records at the intersection for the 5-year period from January 2010 through December 2014. **Table 1** summarizes the reported crash data. The crash data is included in **Appendix A**.

Table 1 - OR213/Beavercreek Road Intersection Crash Summary and Crash Rate Assessment (2010-2014)

Crash Type				Severity			Total	Critical Crash Rate by Intersection Type	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
Rear-End	Turning	Angle	Other	PDO	Injury	Fatal					
116	7	5	5	58	74	1	133	0.59	0.50	1.20	Yes

PDO = Property Damage Only
Crash Rate = crashes per million entering vehicles

As shown in Table 1, the most predominant crash type at the OR213/Beavercreek Road intersection is rear-end crashes. The TSP includes a project to implement an advance warning system to help mitigate these types of crashes for the southbound approach.

Crash data for the OR213/Redland Road intersection was obtained from the February 2017 Serres Farm Annexation Traffic Impact Study for the 3-year period from January 2013 through December 2015. **Table 2** summarizes the reported crash data. The crash data is included in **Appendix A**.

Table 2 - OR213/Redland Road Intersection Crash Summary and Crash Rate Assessment (2013-2015)

Crash Type				Severity			Total	Critical Crash Rate by Intersection Type	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
Rear-End	Turning	Angle	Other	PDO	Injury	Fatal					
22	4	0	1	8	19	0	27	0.39	0.54	0.44	Yes

PDO = Property Damage Only
Crash Rate = crashes per million entering vehicles

Both the OR213/Beavercreek Road and OR213/Redland Road intersections have observed crash rates which exceed the Critical Crash Rate, meaning that they exceed the crash rate of other comparable intersections. For this reason, applicable TSP planned improvements and other potential improvements were analyzed at each intersection to determine their impact on the expected crash frequency at each intersection. **Table 3** summarizes the improvements in the TSP.

Table 3 – 2013 Oregon City Transportation System Plan Projects located in the southeast part of the City

Project #	Project Description	Project Extent	Project Elements	Priority	Funded?
D14	Southbound OR 213 Advanced Warning System	Southbound OR 213, north of the Beavercreek Road intersection	Install a queue warning system for southbound drivers on OR 213 to automatically detect queues and warn motorists in advance via a Variable Message Sign	Short-term	Likely
D79	OR 213/Redland Road Capacity Improvements	Redland Road to Redland Road Undercrossing	Add a third northbound travel lane on OR 213 north of the Redland Road undercrossing. Extend the third southbound travel on OR 213 south of the Redland Road intersection and merge the third lane before the Redland Road undercrossing. Add a right-turn lane (southbound OR 213 to westbound Redland). Convert the Redland Road approach to OR 213 to 1 receiving lane, 2 left-turn approach lanes, and 1 right-turn lane.	Long-term	Not Likely

In addition to these planned improvements, the impact of a westbound right-turn acceleration lane at OR213/Beavercreek Road and an additional southbound through lane (shared with the southbound right-turn lane) at OR213/Redland Road were analyzed. The intersections and improvements were analyzed using HiSafe[1] software and crash modification factors (CMF) from the CMF Clearinghouse. **Tables 4 and 5** show the 2035 expected annual crashes with and without these improvements.

[1] HiSafe companion software to the Highway Safety Manual (HSM) applies HSM Predicative Method for estimating the average number of expected annual crashes for quantitative assessment of safety performance.

Table 4 – OR213/Beavercreek Road 2035 Expected Annual Crashes

Existing Configuration	With Westbound Right-Turn Acceleration Lane (CMF #295 applied to westbound rear-end crashes)	With Southbound Advanced Queue Warning System (CMF #76 applied to southbound rear-end injury crashes)	With Both Improvements
26.39	25.75	25.77	25.13
-	-2.4%	-2.3%	-4.8%

Table 5 – OR213/Redland Road 2035 Expected Annual Crashes

Existing Configuration	With 3rd Southbound Through/Right Lane (CMF #7924 applied to southbound crashes)	With 3 Northbound and 3 Southbound Through Lanes (CMF #7924 applied to northbound and southbound crashes)
8.82	8.24	7.92
-	-6.6%	-10.2%

As shown in **Tables 4 and 5**, the planned TSP and proposed financially feasible improvements will reduce the number of expected annual crashes at the OR213/Beavercreek Road and OR213/Redland Road intersections. The proposed financially feasible improvements at OR213/Beavercreek Road are predicted to reduce crashes at the intersection by almost 5%, and planned improvements at OR213/Redland Road are predicted to reduce crashes by more than10%.

Operations Analysis

Count data for the intersection of OR213 and Beavercreek Road collected in February 2016 and for the intersection of OR213 and Redland Road collected in January 2017 was provided by Oregon City. The raw count data can be found in **Appendix B**. This winter data was seasonally adjusted to summer peak volumes using the average of two representative Automatic Traffic Recorder (ATR) locations in Clackamas County (03-017 and 03-018). A factor of 8.5% was calculated using the procedures outlined in ODOT's Analysis Procedures Manual (APM) and applied to the winter counts to adjust them to summer peak volumes. These calculations can be found in **Appendix B**.

Metro provided 2015 Base Year and 2040 Future Year hourly turn movement volumes for OR213/Beavercreek Road and OR213/Redland Road. These volumes reflect the most current land use assumptions and include full build-out of Oregon City's urban growth boundary areas in addition to growth in the rest of the region, including through traffic from outlying communities. These hourly plots can be found in **Appendix B**. The count data, 2015 Base Year and 2040 Future Year volumes were post-processed using the NCHRP 255[2] methodology and interpolated to produce 2035 turning movement volumes at each intersection. Only four hours of count data were provided for Redland Road. The remaining hours were estimated under the assumption that OR213/Redland Road follows

[2] This document sets forth procedures to refine computerized traffic volume forecasts by comparing base year and future year volumes to count data.

the same hourly volume profile as OR213/Beavercreek Road. Due to the large amount of commuter traffic from outlying communities, a large portion of the traffic through each intersection is made up of the same vehicles a matter of seconds apart. Finally, volumes were adjusted to provide balanced counts between the two intersections. The calculations for this process can be found in **Appendix B**.

A Synchro[3] analysis was conducted for the six highest traffic volume hours at the OR213/Beavercreek Road intersection and for the five highest traffic volume hours at the OR213/Redland Road intersection. The analysis was conducted with and without proposed improvements at the intersections. The results of this analysis are summarized in **Tables 6 and 7**. The full reports can be found in **Appendix C**. The TSP analysis is for year 2035 but the most recent Metro model is for year 2040. Therefore, the analysis presented in this summary is for year 2040. Analysis was also conducted for year 2035, and is included in **Appendix B**.

Table 6 – 2040 Synchro Volume-to-Capacity Analysis Summary: OR213/Beavercreek Road

OR213/Beavercreek Road Scenario	Peak Hour 4:00 pm	2nd Highest Hour 5:00 pm	3rd Highest Hour 3:00 pm	4th Highest Hour 2:00 pm	5th Highest Hour 7:00 am	6th Highest Hour 12:00 pm
Total Entering Volume	8,201	8,017	7,855	6,881	6,705	6,589
Without Improvements	1.29	1.31[1]	1.33[1]	1.12	1.49[1]	1.12
With Westbound Right-Turn Acceleration Lane	1.13	1.13	1.10	1.01	1.02	0.96

[1]The 2nd, 3rd and 5th highest overall volume hours at OR213/Beavercreek Road under the existing intersection configuration have a higher v/c because certain movements in these hours exhibit higher volumes than in the peak hour. For example, during the morning peak the westbound right-turn movement is significantly higher than during the afternoon peak, impacting v/c.

Table 7 – 2040 Synchro Volume-to-Capacity Analysis Summary: OR213/Redland Road

OR213/Redland Road Scenario	Peak Hour 4:00 pm	2nd Highest Hour 5:00 pm	3rd Highest Hour 3:00 pm	4th Highest Hour 2:00 pm	5th Highest Hour 7:00 am
Total Entering Volume	7,054	6,920	6,764	6,085	5,933
Without Improvements	1.19	1.19	1.08	0.98	0.96
With Southbound Through/Right Lane	1.10	1.08	1.02	0.92	0.96
With Six Lanes	0.91	0.90	0.83	0.75	0.73

The analysis in **Tables 6 and 7** shows that, without improvements, the OR213/Beavercreek Road and OR213/Redland Road intersections will exceed current mobility target of a v/c ratio of 0.99 in 2040 (shown in red). With financially feasible improvements in place (i.e. a westbound right-turn acceleration lane at OR213/Beavercreek and a southbound through/right lane at OR213/Redland), the intersections will still exceed 0.99 for five hours and three hours (shown in yellow) per day, respectively. As shown in **Appendix B**, in the year 2035, the OR213/Beavercreek Road and OR213/Redland Road intersections will only exceed 0.99 for three hours and two hours, respectively.

[3] Traffic model used to evaluate v/c ratios and other metrics

It should be noted that the analysis of OR213/Beavercreek Road was also conducted with a single westbound left-turn lane, instead of the existing dual lanes. This change did not significantly affect the intersection v/c ratio, but did have the effect of double westbound left-turning queues beyond the available storage. The full reports for this analysis can also be found in **Appendix C**. This potential improvement can be evaluated further in tandem with potential future improvements at the Beavercreek Road/Maple Lane Road intersection.

Cost Estimates

The cost of the proposed financially feasible improvements at OR213/Beavercreek Road was estimated by Kittelson & Associates, Inc. (KAI) to be approximately $1.5 million based on the design shown below in **Exhibit 3**. The principal elements of this are 1) the provision of an acceleration lane for westbound right-turning vehicles and 2) elimination of the second westbound left-turn lane to increase left-turn storage on eastbound Beavercreek Road at Maple Lane Road.

Exhibit 3. Highway 213 (OR213) and Redland Road Westbound Right-turn Acceleration Lane

The cost of adding an additional northbound and southbound through lane at OR213/Redland Road, consistent with TSP project D79, was recently estimated by OBEC to be almost $10 million. The potential lower cost improvement proposed based on this study, converting the southbound right-turn lane to a through/right lane, is expected to cost approximately $3-4 million.

The KAI and OBEC cost estimates, as well as exhibits of the proposed financially feasible improvements at OR213/Beavercreek Road can be found in **Appendix D**.

SUMMARY

Oregon City's 2013 Transportation System Plan (TSP) determined that the Highway 213 (OR213) corridor from Redland Road to Molalla Avenue (including the intersection of Beavercreek Road) will exceed the current mobility target in 2035, resulting in more congestion than is allowed. The OR213

intersection with Molalla Avenue is anticipated to meet the target; however, Beavercreek Road and Redland Road are not anticipated to meet the target.

The alternatives that would meet the existing mobility target of a v/c ratio of 0.99 at the OR213/Beavercreek Road and OR213/Redland Road intersections are not cost feasible, given the financial constraints of the City and other agency partners. Nonetheless, it is recommended that the alternatives at OR213/Beavercreek Road be documented in the TSP for additional future consideration as part of the TSP's unconstrained plan and that the existing planned improvement at OR213/Redland Road for three through lanes in the northbound and southbound directions remain in the unconstrained TSP project list.

Lacking the financial capability of implementing major capacity-increasing projects at these locations, alternative mobility targets will be necessary at each of these intersections; however, some improvements may be feasible in the cost-constrained TSP to improve safety and minimize future congestion.

OR213/Beavercreek Road

In conjunction with an alternative mobility target allowing intersection v/c to exceed 0.99 for up to five hours of the day, financially feasible improvements to increase safety and capacity in the near-term could include a westbound right-turn acceleration lane at OR213/Beavercreek Road.

OR213/Redland Road

In conjunction with an alternative mobility target allowing intersection v/c to exceed 0.99 for up to three hours of the day, financially feasible improvements to increase capacity in the near-term could include a third southbound through lane (shared with the right-turn lane).

NEXT STEPS

Potential financially feasible improvements to improve capacity and safety at OR213/Redland Road and OR 213/Beavercreek Road, as well as an alternative mobility target to allow intersection v/c to exceed 0.99 for up to five hours of the day at Beavercreek Road and three hours of the day at Redland Road, will be reviewed with the TAG and CAG. Changes to the TSP to incorporate these improvements and the alternative mobility target will require a Legislative public review process before the City's Planning Commission and City Commission. The alternative mobility target and financially feasible improvements that are needed will need to be agreed upon by ODOT and approved by the Oregon Transportation Commission.

Oregon City GIS Map

Legend

All Streets (labels only) - 4800

Landslides (SLIDO) - Historic L

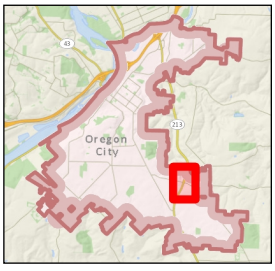
Slope Categories

- 0 - 10%
- 10 - 25%
- 25 - 35%
- > 35%

Basemap

Notes

Overview Map



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1: 4,800

City of Oregon City
PO Box 3040
625 Center St
Oregon City
OR 97045
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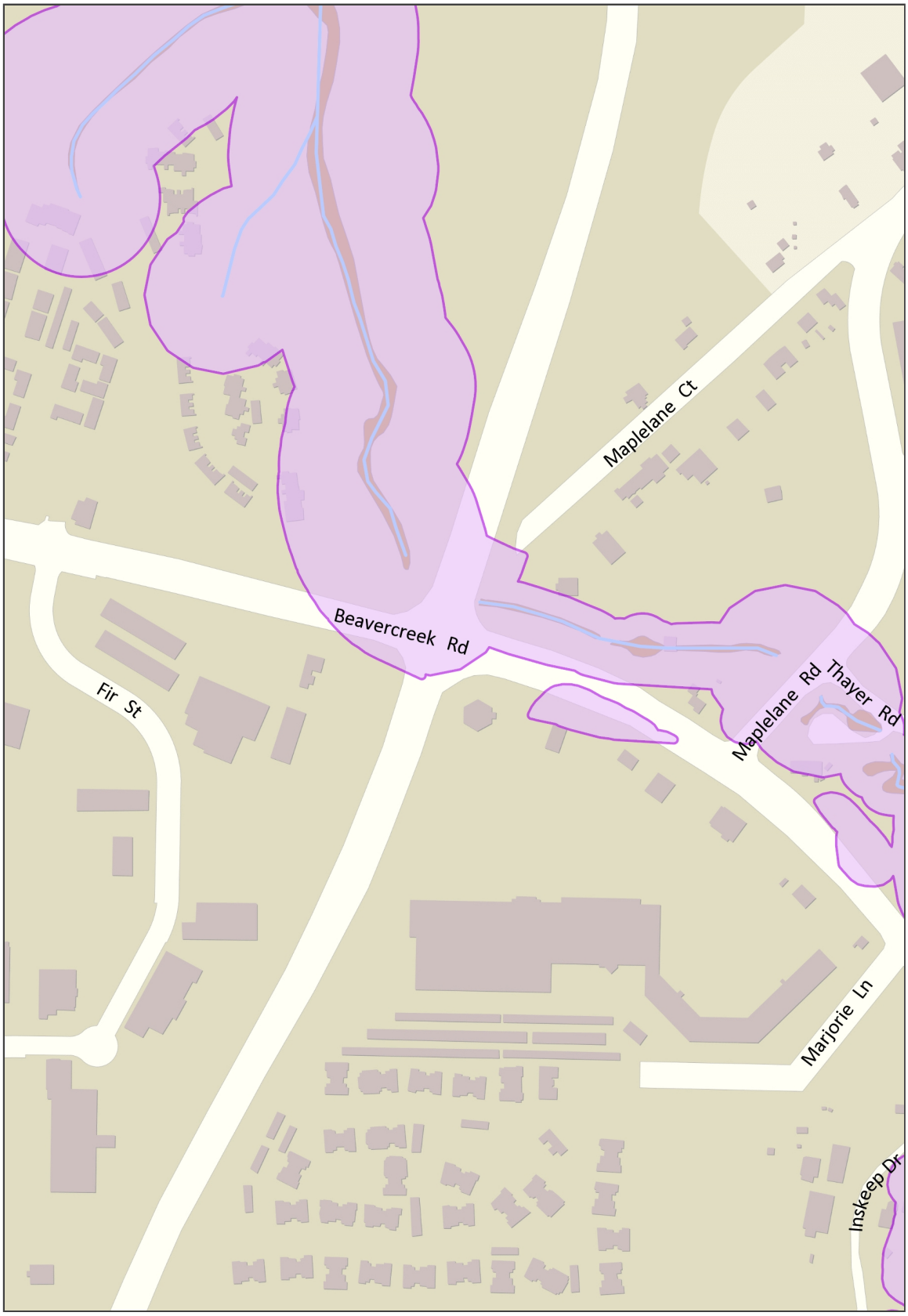
www.orcity.org

Map created 11/16/2016

Oregon City GIS Map

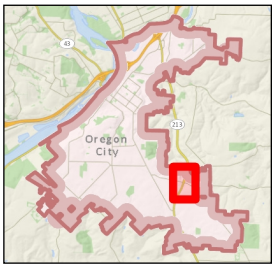


Legend

- All Streets (labels only) - 4800
- NROD - Natural Resource Ove
- Title 3 - Streams
- Title 3 - Wetlands
- Basemap

Notes

Overview Map



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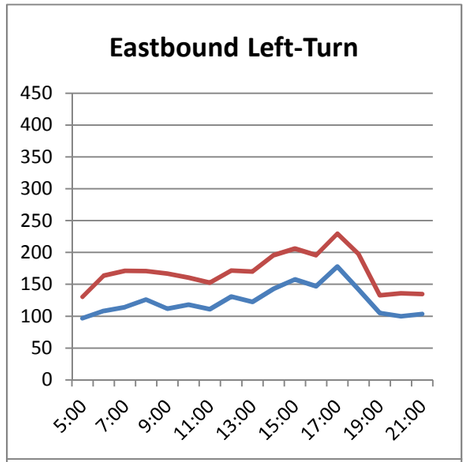
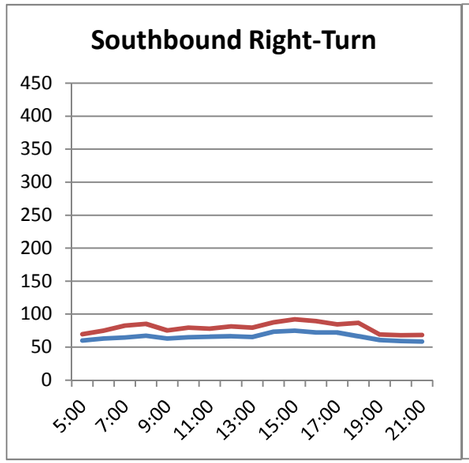
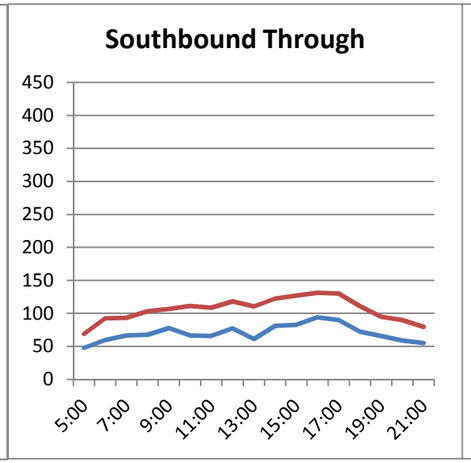
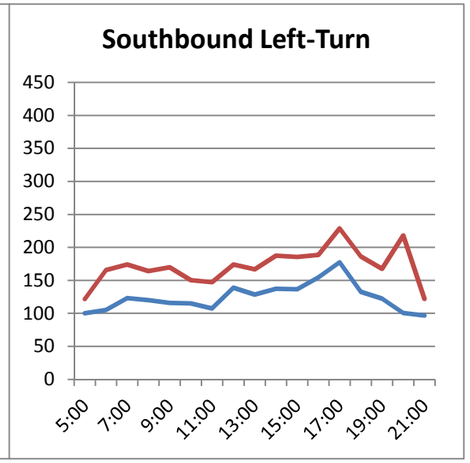
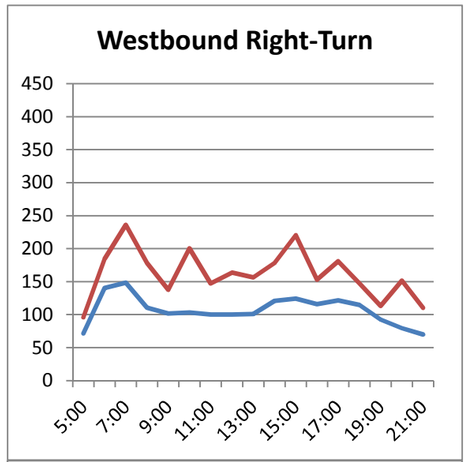
Attachment A: OR213/Beavercreek Road Intersection Travel Times (2017)

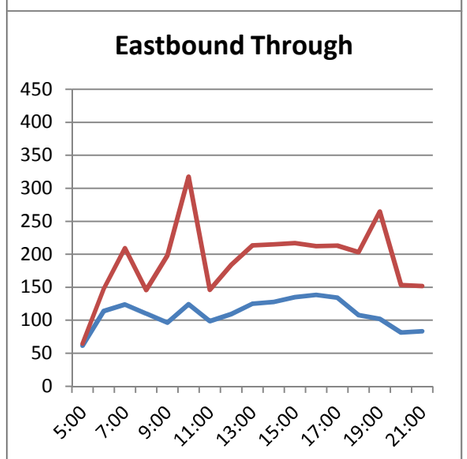


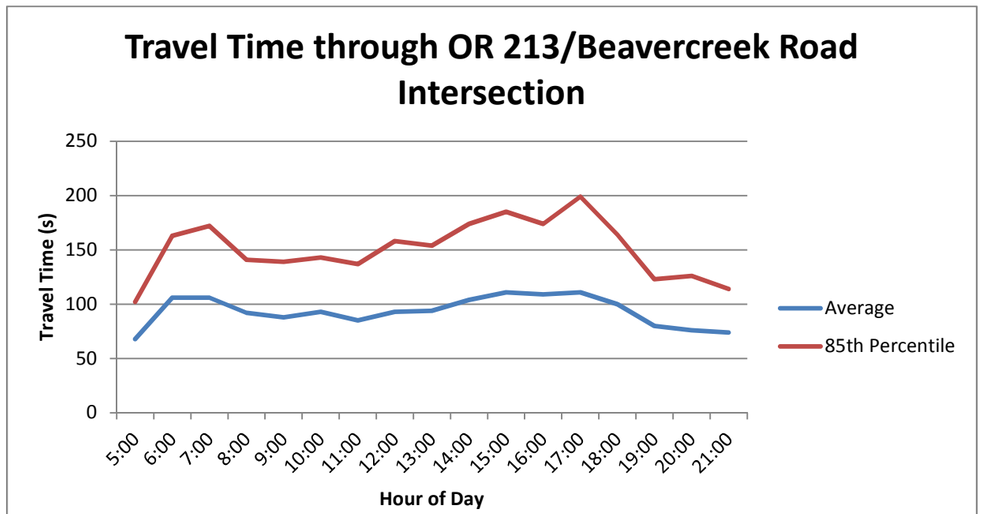


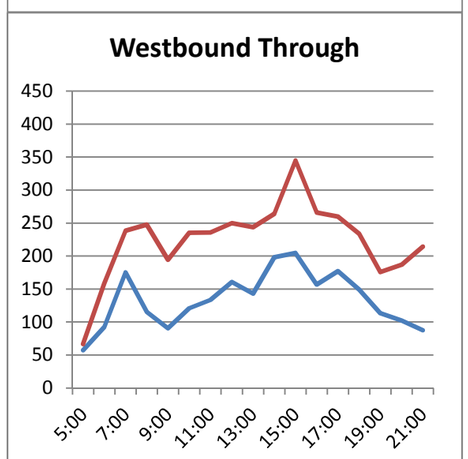


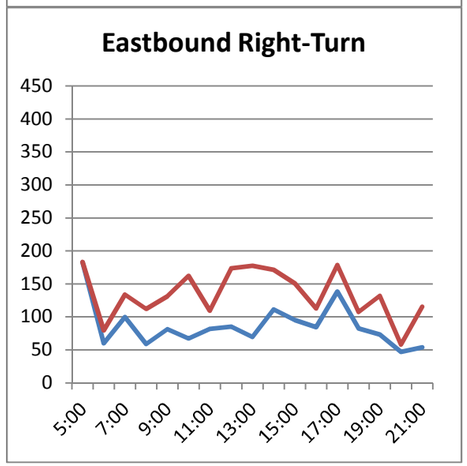


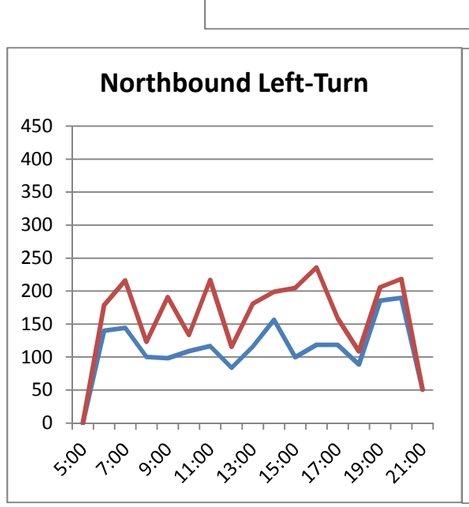


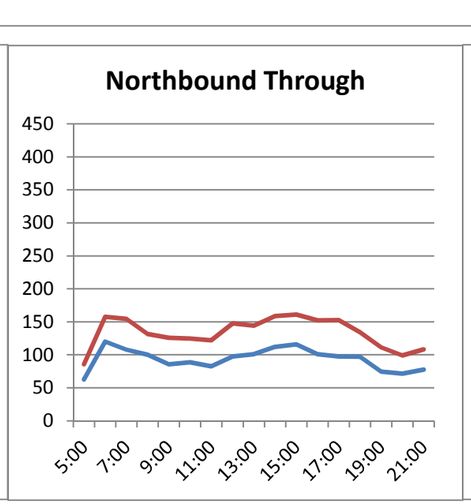


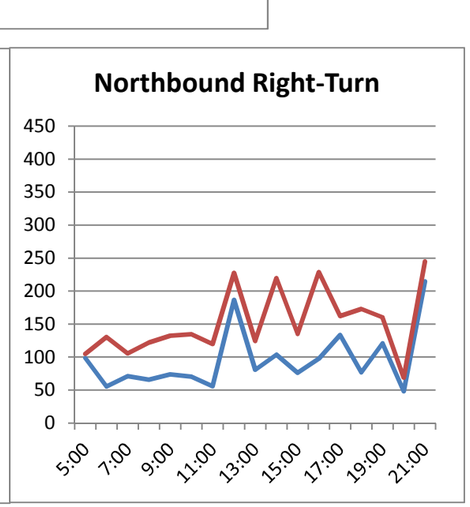


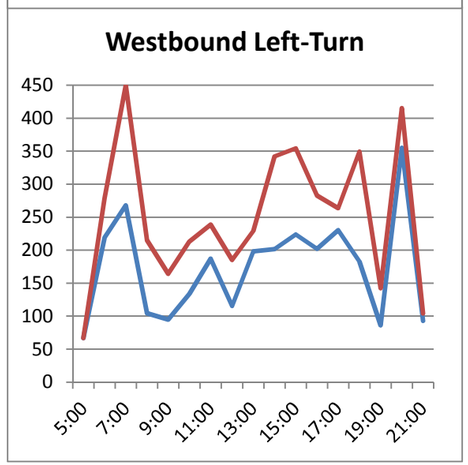












TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

OR 213 Cascade Highway (160) & Beavercreek Road

January 1, 2010 through December 31, 2014

COLLISION TYPE	FATAL CRASHES	NON-FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION	INTER-SECTION RELATED	OFF-ROAD
YEAR: 2014														
REAR-END	0	9	10	19	0	11	0	16	2	11	7	19	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	0	1	1	0	1	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	0	1	0	1	1	0	0
2014 TOTAL	0	9	12	21	0	11	0	16	4	12	8	21	0	0
YEAR: 2013														
ANGLE	0	0	1	1	0	0	0	0	1	0	1	1	0	0
BACKING	0	0	1	1	0	0	0	0	1	0	0	1	0	0
REAR-END	0	17	11	28	0	18	0	22	5	20	8	28	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	1	2	0	1	1	2	0	0
2013 TOTAL	0	19	14	33	0	21	1	25	7	22	10	33	0	0
YEAR: 2012														
ANGLE	0	0	1	1	0	0	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	1	0	1	0	1
PEDESTRIAN	0	1	0	1	0	1	0	1	0	1	0	1	0	0
REAR-END	0	18	6	24	0	24	0	16	6	16	8	24	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	2	0	0	2	2	0	0
2012 TOTAL	0	22	7	29	0	29	0	21	6	19	10	29	0	1
YEAR: 2011														
ANGLE	1	0	2	3	1	2	1	1	2	2	1	3	0	0
REAR-END	0	12	13	25	0	13	0	19	6	18	7	25	0	0
TURNING MOVEMENTS	0	2	0	2	0	3	0	0	2	0	2	2	0	0
2011 TOTAL	1	14	15	30	1	18	1	20	10	20	10	30	0	0
YEAR: 2010														
REAR-END	0	10	10	20	0	13	0	13	7	17	3	20	0	0
2010 TOTAL	0	10	10	20	0	13	0	13	7	17	3	20	0	0
FINAL TOTAL	1	74	58	133	1	92	2	95	34	90	41	133	0	1

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEC	DEAD	DRUG	SCHL	WORK	DATE / DAY / TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02085	N	N	N			06/12/2013	CLACKAMAS	1 14		INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										07
NONE						Wed 10A	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	UNK	REAR		PRVTE	N S									000		00
							PORTLAND UA	2.96	CASCADE HY SOUTH	06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		026	000		07
No						*45 19 55.86 -122 34 29.95*		016000100S00	1															OR<25					
																02	NONE 0	STOP									011		00
																	PUBLC	N S											
																	PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000	000		00
																								UNK					
04839	N	N	N			11/29/2014	CLACKAMAS	1 14		INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										29
NO RPT						Sat UNK	OREGON CITY	MN 0	S BEAVERCREEK RD	UN		TRF SIGNAL	N	UNK	REAR		PRVTE	UN UN									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	3		N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		026	000		29
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP									011		00
																	PRVTE	UN UN											
																	PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		000	000		00
																								OR<25					
01828	N	N	N			05/25/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										013	07
NONE						Wed 2P	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	WET	REAR		PRVTE	N S									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	76	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP									011	013	00
																	PRVTE	N S											
																	PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000	000		00
																								UNK					
																03	NONE 0	STOP									022		00
																	PRVTE	N S											
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					
02674	N	N	N			07/27/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Wed 7P	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N S									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP									011		00
																	PRVTE	N S											
																	PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	05	F			000	000		00
01982	N	N	N	N	N	05/30/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	STRGHT										18,14
STATE						Wed 4P	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	DRY	PED		PRVTE	N S									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		000	000	082	00
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																		STRGHT	01	PED	INJB	14	M		01	028,020	035		18,14
																		E W											

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	CONN #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00662	N	N	N	N	N	02/25/2013	CLACKAMAS	1 14			INTER	CROSS	N	N	CLR	O-1STOP	01	NONE 0	BACK										10
CITY						Mon 6P	OREGON CITY	MN 0	S BEAVERCREEK RD		N		TRF SIGNAL	N	SNO	BACK		PRVTE	S N									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH		06	3		N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	34	F	SUSP		011	000	10
No						*45 19 54.96 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	N S									011	00
																		PSNGR CAR		01	DRVR	NONE	31	F	OR-Y		000	000	00
																									OR<25				
02051	N	N	N			06/10/2013	CLACKAMAS	1 14			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										10
NONE						Mon 12P	OREGON CITY	MN 0	S BEAVERCREEK RD		N		TRF SIGNAL	N	DRY	SS-O		PRVTE	N S									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH		06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		080	000	10
No						*45 19 54.96 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	N S									011	00
																		PSNGR CAR		01	DRVR	NONE	87	F	OR-Y		000	000	00
																									OR<25				
03700	N	N	N			10/01/2013	CLACKAMAS	1 14			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Tue 1P	OREGON CITY	MN 0	S BEAVERCREEK RD		N		TRF SIGNAL	N	DRY	REAR		UNKN	N S									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH		06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000	07
No						*45 19 54.96 -122 34 30.30*		016000100	S00	1															UNK				
																	02	NONE 0	STOP										
																		PRVTE	N S									011	00
																		PSNGR CAR		01	DRVR	NONE	52	M	OR-Y		000	000	00
																									OR<25				
04798	N	Y	N			12/11/2013	CLACKAMAS	1 14			INTER	CROSS	N	N	FOG	S-1STOP	01	NONE 0	STRGHT										07
CITY						Wed 8P	OREGON CITY	MN 0	S BEAVERCREEK RD		N		TRF SIGNAL	N	DRY	REAR		PRVTE	N S									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH		06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		026	000	07
No						*45 19 54.96 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	N S									011	00
																		PSNGR CAR		01	DRVR	INJC	58	M	OR-Y		000	000	00
																									OR<25				
01637	N	N	N			04/29/2014	CLACKAMAS	1 14			INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT						Tue 2P	OREGON CITY	MN 0	S BEAVERCREEK RD		N		TRF SIGNAL	N	DRY	REAR		PRVTE	N S									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH		06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	N S									011	00
																		PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		000	000	00
																									OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03308	N	N	N			08/25/2014	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Mon 4P	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	S N										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y		026	000		29
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	S N									011		00
																	PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		000	000		00
																								OR<25					
04757	N	N	N			11/22/2014	CLACKAMAS	1 14		INTER	CROSS	N	N	UNK	S-STRGHT	01	NONE 0	STRGHT											13
NO RPT						Sat 1P	OREGON CITY	MN 0	S BEAVERCREEK RD	N		TRF SIGNAL	N	WET	SS-O		UNKN	N S									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		045	000		13
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															UNK					
																02	NONE 0	STRGHT											
																	PRVTE	N S									000		00
																	PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		000	000		00
																								OR<25					
00766	N	N	N			03/10/2010	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	07
NO RPT						Wed 4P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	NE SW									011	013	00
																	PSNGR CAR		01	DRVR	INJC	25	M	OR-Y		000	000		00
																								OR<25					
																03	NONE 0	STOP											
																	PRVTE	NE SW									022		00
																	PSNGR CAR		01	DRVR	NONE	24	M	OR-Y		000	000		00
																								OR<25					
00115	N	N	N			01/10/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT						Mon 5P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	06	2		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	NE SW									011		00
																	PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		000	000		00
																								OR<25					
00222	N	N	N			01/18/2010	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
NONE						Mon 6A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	62	F	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		000	000	00
01346	N	N	N		04/22/2010 Thu 3P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N CLR N DRY N DAY	S-STRGHT REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	62	M	OR-Y OR<25	026	000 000	07 00 07	
NONE No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STRGHT SE NW									006	00
																PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00
03556	N	N	N		10/01/2010 Fri 7A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N CLR N DRY N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	70	F	OR-Y OR<25	026	000 000	07 00 07	
NO RPT No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	NONE	72	F	OR-Y OR<25		000	000	00
04388	N	N	N		11/20/2010 Sat 12P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	30	F	OR-Y OR<25	026	000 000	07 00 07	
NONE No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
																		02	PSNG	NO<5	03	M			000	000	00
															02	NONE 0 PRVTE	STOP S N									011	00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25		000	000	00
00158	N	N	N		01/13/2011 Thu 4A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N CLR N DRY N DLIT	S-STRGHT REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE SW	01	DRVR	INJC	36	F	OR-Y OR<25	042	000 000	07 00 07	
NONE No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STRGHT NE SW									000	00
																PSNGR CAR		01	DRVR	NONE	55	F	OR-Y OR>25		000	000	00
00268	N	N	N		01/22/2011 Sat 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	48	F	OR-Y OR<25	026	000 000	07 00 07	
NONE No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	CONN #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	INJC	47	M	OR-Y OR<25		000	000	00
00504 NONE	N	N	N			02/10/2011 Thu 3P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH		INTER NE 09	CROSS 2	N YIELD	N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT SE NW									000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100	S00 1									PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25		026	000	
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		000	000	00
00807 NO RPT	N	N	N			03/07/2011 Mon 6A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH		INTER NE 09	CROSS 3	N YIELD	N N	CLR DRY DAWN	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT SE NW									000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100	S00 1									PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR>25		026	000	
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		000	000	00
81746 NONE	N	N	N			04/04/2011 Mon 10A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH		INTER NE 09	CROSS 3	N YIELD	N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT SE NW									000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100	S00 1									PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR<25		026	000	
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y OR<25		000	000	00
02297 NONE	N	N	N			06/30/2011 Thu 12P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH		INTER NE 09	CROSS 3	N YIELD	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT SE NW									000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100	S00 1									PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25		026	000	
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	INJC	48	M	OR-Y OR<25		000	000	00
03876 NONE	N	N	N			10/15/2011 Sat 12A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH		INTER NE 09	CROSS 3	N YIELD	N N	CLR DRY DLIT	S-1STOP REAR PDO	01	NONE 0 UNKN	STRGHT SE NW									000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100	S00 1									PSNGR CAR		01	DRVR	NONE	00	F	OR-Y UNK		026	000	

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 PRVTE	STOP SE NW									011		00
																		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y OR<25		000	000		00
03993	N	N	N			10/25/2011 Tue 6P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N	N FOG N WET N DARK	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	F	OTH-Y OR<25	026	000 000			07 00 07
NO RPT																													
No						*45 19 54.97 -122 34 30.30*		016000100S00		1																			
																	02	NONE 0 PRVTE	STOP SE NW									011		00
																		PSNGR CAR		01	DRVR	NONE	64	M	OR-Y OR<25		000	000		00
04755	N	N	N			12/09/2011 Fri 8A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N	N CLR N DRY N DAY	S-1STOP REAR PDO	01	UNKN 0 UNKN UNKNOWN	STRGHT SE NW	01	DRVR	NONE	00	U	UNK UNK	026	000		013	07 00 07
NONE																													
No						*45 19 54.97 -122 34 30.30*		016000100S00		1																			
																	02	NONE 0 PRVTE	STOP SE NW									011	013	00
																		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y OR<25		000	000		00
																	03	NONE 0 PRVTE	STOP SE NW									022		00
																		PSNGR CAR		01	DRVR	NONE	00	F	UNK UNK		000	000		00
00376	N	N	N	N	N	01/28/2012 Sat 7P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N	N CLR N DRY N DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	45	F	OR-Y OR<25	026	000 000			07 00 07
STATE																													
No						*45 19 54.97 -122 34 30.30*		016000100S00		1																			
																	02	NONE 0 PRVTE	STOP SE NW									011		00
																		PSNGR CAR		01	DRVR	INJC	19	F	OR-Y OR<25		000	000		00
																				02	PSNG	INJC	20	F			000	000		00
00436	N	N	N			02/02/2012 Thu 4P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N	N CLR N DRY N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	85	M	OR-Y OR<25	026	000 000			07 00 07
NONE																													
No						*45 19 54.97 -122 34 30.30*		016000100S00		1																			
																	02	NONE 0 UNKN	STOP SE NW									011		00
																		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		000	000		00

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00485	N	N	N	N	N	02/06/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY						Mon 6P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE NW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	65	M	OTH-Y		043,026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															N-RES				
																02	NONE 0	STOP										
																	PRVTE	SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	26	M	OR-Y		000	000	00
																								OR>25				
00679	N	N	N			02/22/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Wed 1P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		UNKN	SE NW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N	DAY	INJ		UNKNOWN		01	DRVR	NONE	00	M	UNK		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															UNK				
																02	NONE 0	STOP										
																	PRVTE	SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	23	F	OR-Y		000	000	00
																								OR<25				
																			02	PSNG	INJC	28	F			000	000	00
																			03	PSNG	INJC	55	F			000	000	00
00763	N	N	N			02/29/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						Wed 7P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	WET	REAR		PRVTE	SE NW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	17	F	OR-Y		000	000	00
																								OR<25				
00972	N	N	N			03/15/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						Thu 6A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	WET	REAR		PRVTE	SE NW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	56	F	OR-Y		000	000	00
																								OR<25				
01301	N	N	N			04/07/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NO RPT						Sat 9A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N	DAY	INJ		MTRCYCLE		01	DRVR	INJC	33	M	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25				
																02	NONE 0	STOP										
																	PRVTE	SE NW									011	00
																	PSNGR CAR		01	DRVR	NONE	28	M	OR-Y		000	000	00
																								OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHOOL BUS	WORK ZONE	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01649	N	N	N			05/05/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sat 2P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																			02	PSNG	NO<5	01	F			000	000		00
																02	NONE 0	STOP											
																	PRVTE	SE NW									011		00
																	PSNGR CAR		01	DRVR	NONE	53	M	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	49	F			000	000		00
01694	N	N	N			05/08/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Tue 8P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	72	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SE NW									011		00
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																								OR<25					
02190	N	N	N			06/18/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	STRGHT											07
NONE						Mon 12P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	70	M	OTH-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SE NW									011		00
																	PSNGR CAR		01	DRVR	INJC	43	F	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	07	M			000	000		00
																			03	PSNG	INJC	09	F			000	000		00
02429	N	N	N			07/06/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Fri 2P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SE NW									011		00
																	PSNGR CAR		01	DRVR	INJC	54	M	OTH-Y		000	000		00
																								N-RES					
02909	N	N	N			08/07/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Tue 3P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD	N	DRY	REAR		PRVTE	SE NW										000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		026	000		07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1															OR<25					

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / RNDBT / SURF / DRVWY / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 0 PRVTE	STOP SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	70	M	OR-Y OR<25		000	000	00
04569 NONE	N	N	N			11/26/2012 Mon 3P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	66	F	OR-Y OR<25		026,026	000 000	27,07 00 27,07
No						*45 19 54.97 -122 34 30.30*		016000100S00		1																		
																02	NONE 0 PRVTE	STOP SE NW									011	00
																	PSNGR CAR		01	DRVR	INJB	27	F	OR-Y OR<25		000	000	00
																			02	PSNG	NO<5	02	M			000	000	00
00193 NONE	N	N	N			01/17/2013 Thu 10A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	U	UNK OR<25		026	000 000	07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00		1																		
																02	NONE 0 PRVTE	STOP SE NW									011	00
																	PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		000	000	00
00296 NONE	N	N	N			01/25/2013 Fri 7A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	UNK WET DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	25	F	OR-Y OR<25		026	000 000	07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00		1																		
																02	NONE 0 PRVTE	STOP SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00
																			02	PSNG	NO<5	03	M			000	000	00
03686 NONE	N	N	N			03/27/2013 Wed 9A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	F	OR-Y OR<25		026	000 000	07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00		1																		
																02	NONE 0 PRVTE	STOP SE NW									011	00
																	PSNGR CAR		01	DRVR	INJC	59	M	OR-Y OR<25		000	000	00
01343 NONE	N	N	N			04/10/2013 Wed 5P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	F	OR-Y OR<25		026	000 000	07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00		1																		

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	INJC	41	F	OR-Y OR<25		000	000	00
01405	N	N	N	N	N 04/24/2013	CLACKAMAS	1 14		INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT											27,07
CITY					Wed 1P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD		N DRY	REAR		PRVTE	SE NW									000	00
						PORTLAND UA	2.98	CASCADE HY SOUTH	09	3			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y OR<25		016,043,026	000		27,07
No	*45 19 54.96*	*-122 34 30.30*					016000100S00	1																				
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	INJC	27	F	OTH-Y OR<25		000	000	00
01782	N	N	N		05/21/2013	CLACKAMAS	1 14		INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE					Tue 7A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD		N DRY	REAR		PRVTE	SE NW									000	00
						PORTLAND UA	2.98	CASCADE HY SOUTH	09	3			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	50	F	OR-Y OR<25		026	000		07
No	*45 19 54.96*	*-122 34 30.30*					016000100S00	1																				
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	NONE	62	F	OR-Y OR<25		000	000	00
02276	N	N	N		06/27/2013	CLACKAMAS	1 14		INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE					Thu 10A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD		N DRY	REAR		PRVTE	SE NW									000	00
						PORTLAND UA	2.98	CASCADE HY SOUTH	09	3			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25		026	000		07
No	*45 19 54.96*	*-122 34 30.30*					016000100S00	1																				
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	INJC	63	F	OR-Y OR<25		000	000	00
																		02	PSNG	NO<5	01	F			000	000		00
03212	N	N	N		08/29/2013	CLACKAMAS	1 14		INTER	CROSS	N		N RAIN	S-1STOP	01	NONE 0	STRGHT											07
CITY					Thu 11A	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		TRF SIGNAL		N WET	REAR		PRVTE	SE NW									000	00
						PORTLAND UA	2.98	CASCADE HY SOUTH	09	3			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		026	000		07
No	*45 19 54.96*	*-122 34 30.30*					016000100S00	1																				
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00
03276	N	N	N	N	N 09/01/2013	CLACKAMAS	1 14		INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY					Sun 12P	OREGON CITY	MN 0	S BEAVERCREEK RD	NE		YIELD		N DRY	REAR		PRVTE	SE NW									000	00
						PORTLAND UA	2.98	CASCADE HY SOUTH	09	3			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	62	M	OR-Y OR<25		043,026	000		07
No	*45 19 54.96*	*-122 34 30.30*					016000100S00	1																				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL WRK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / RNDBT / SURF / DRVWY / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
														02	NONE 0 PRVTE	STOP SE NW									011	00
															PSNGR CAR		01	DRVR	INJC	48	F	OR-Y OR>25		000	000	00
																	02	PSNG	INJC	49	F			000	000	00
03531 NONE	N	N	N		09/21/2013 Sat 9A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	M	UNK		026	000 000	07 00 07
No	*45 19 54.96*		*-122 34 30.30*				016000100S00	1														N-RES				
														02	NONE 0 PRVTE	STOP SE NW									011	00
															PSNGR CAR		01	DRVR	INJC	44	F	OR-Y OR<25		000	000	00
04072 NONE	N	N	N		10/24/2013 Thu 7A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N FOG N DRY N DLIT	S-1STOP REAR PDO	01	NONE 0 UNKN UNKNOWN	STRGHT SE NW	01	DRVR	NONE	00	U	UNK		026	000 000	07 00 07
No	*45 19 54.96*		*-122 34 30.30*				016000100S00	1														OR<25				
														02	NONE 0 PRVTE	STOP SE NW									011	00
															PSNGR CAR		01	DRVR	NONE	69	M	OR-Y OR<25		000	000	00
00987 NONE	N	N	N		03/11/2014 Tue 6P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N CLR N DRY N DUSK	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	INJB	38	F	OR-Y		026	000 000	07 00 07
No	*45 19 54.97*		*-122 34 30.30*				016000100S00	1														OR<25				
														02	NONE 0 PRVTE	STOP SE NW									011	00
															PSNGR CAR		01	DRVR	NONE	36	M	OR-Y OR<25		000	000	00
00120 NONE	N	N	N		01/09/2014 Thu 5P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 03	CROSS 3	N TRF SIGNAL	N RAIN N WET N DUSK	ANGL-OTH TURN PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R W S	01	DRVR	NONE	56	F	OR-Y		028	016 000	02 00 02
No	*45 19 54.97*		*-122 34 30.30*				016000100S00	1														OR<25				
														02	NONE 0 PRVTE	STRGHT N S									000	00
															PSNGR CAR		01	DRVR	NONE	63	M	UNK OR>25		000	000	00
03359 NONE	N	N	N		09/17/2010 Fri 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 06	CROSS 2	N TRF SIGNAL	N RAIN N WET N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT E W	01	DRVR	NONE	00	M	UNK		026	000 000	07 00 07
No	*45 19 54.47*		*-122 34 30.52*				016000100S00	1														UNK				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHOOL BUS	WORK ZONE	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	STOP E W									011		00
																	PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		000	000		00
04643 STATE	N	N	Y	N	N	12/06/2010 Mon 10P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 06	CROSS 2	N TRF SIGNAL	N	CLD DRY DLIT	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT E W	01	DRVR	NONE	40	F	OR-Y	026		000 000	093	07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00 1																OR<25					
																02	NONE 0 PRVTE	STOP E W									011		00
																	PSNGR CAR		01	DRVR	NONE	55	F	OR-Y OR<25		000	000		00
01893 CITY	N	N	N			05/30/2013 Thu 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER E 06	CROSS 3	N TRF SIGNAL	N	CLD DRY DAY	ANGL-STP TURN INJ	01	NONE 1 PRVTE SEMI TOW	TURN-R S E	01	DRVR	NONE	29	M	OR-Y	017		000 017		22 22 00
No						*45 19 54.96 -122 34 30.30*		016000100S00 1																OR<25					
																02	NONE 0 PRVTE	STOP E W									012		00
																	PSNGR CAR		01	DRVR	INJC	48	F	OR-Y OR<25		000	000		00
00353 NONE	N	N	N			01/25/2012 Wed 7P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 2	N YIELD	N	RAIN WET DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW NE	01	DRVR	NONE	18	M	OR-Y	026		000 000		07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00 1																OR<25					
																02	NONE 0 PRVTE	STOP SW NE									011		00
																	PSNGR CAR		01	DRVR	INJC	50	F	OR-Y OR<25		000	000		00
02025 NONE	N	N	N			06/03/2012 Sun 5P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N	UNK UNK DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW NE	01	DRVR	NONE	00	M	OR-Y	026		000 000		07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00 1																OR<25					
																02	NONE 0 PRVTE	STOP SW NE									011		00
																	PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25		000	000		00
03609 NO RPT	N	N	N			09/29/2012 Sat 8A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD	N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW NE	01	DRVR	NONE	38	M	OR-Y	026		000 000		07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00 1																OR<25					

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / RNDBT / SURF / DRVWY / LIGHT	CRASH TYP / COLL TYP / SVRTY	V# / VEH TYPE	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE	0 STOP										
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	24	M	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJC	24	F			000	000		00
00303	N	N	N			01/25/2013	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD S-1STOP	01	NONE	0 STRGHT										004	07
NONE						Fri 11A	OREGON CITY	MN 0	S BEAVERCREEK RD	SE		YIELD	N	DRY REAR		PRVTE	SW NE									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		07
No	*45 19 54.96*	*-122 34 30.30*						016000100S00	1														OR<25					
															02	NONE	0 STOP										
																PRVTE	SW NE									011	004	00
																PSNGR CAR		01	DRVR	NONE	73	M	OR-Y		000	000		00
																							OR<25					
01066	N	N	N			03/29/2013	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR S-1STOP	01	NONE	0 STRGHT											07
NONE						Fri 5P	OREGON CITY	MN 0	S BEAVERCREEK RD	SE		YIELD	N	DRY REAR		PRVTE	SW NE									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY INJ		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y		026	000		07
No	*45 19 54.96*	*-122 34 30.30*						016000100S00	1														OR<25					
															02	NONE	0 STOP										
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	32	F	OR-Y		000	000		00
																							OR<25					
03374	N	N	N			09/11/2013	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR S-1STOP	01	NONE	0 STRGHT											07
NONE						Wed 8A	OREGON CITY	MN 0	S BEAVERCREEK RD	SE		YIELD	N	DRY REAR		PRVTE	SW NE									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DAY INJ		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		026	000		07
No	*45 19 54.96*	*-122 34 30.30*						016000100S00	1														OR<25					
															02	NONE	0 STOP										
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	74	M	OR-Y		000	000		00
																							OR<25					
04298	N	N	N			11/05/2013	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN S-1STOP	01	NONE	0 STRGHT											07
NONE						Tue 5P	OREGON CITY	MN 0	S BEAVERCREEK RD	SE		YIELD	N	WET REAR		PRVTE	SW NE									000		00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DLIT PDO		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y		026	000		07
No	*45 19 54.96*	*-122 34 30.30*						016000100S00	1														OR<25					
															02	NONE	0 STOP										
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		000	000		00
																							OR<25					
00483	N	N	N			02/06/2014	CLACKAMAS	1 14		INTER	CROSS	N	N	SNOW S-STRGHT	01	NONE	0 STRGHT										124	07
CITY						Thu 10P	OREGON CITY	MN 0	S BEAVERCREEK RD	SE		YIELD	N	SNO REAR		UNKN	SW NE									000	124	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N	DLIT PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK		042	000		07
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1														UNK					

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
														02	NONE 0 PRVTE	STRGHT SW NE									006	00
															PSNGR CAR		01	DRVR	NONE	18	M	OR-Y OR<25		000	000	00
01591 NONE	N	N	N		04/26/2014 Sat 4P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER SE 09	CROSS 3	N YIELD 2	N CLR N DRY N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SW NE	01	DRVR	NONE	28	M	OR-Y OR<25	026		000 000	29 00 29
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																		
														02	NONE 0 PRVTE	STOP SW NE									011	00
															PSNGR CAR		01	DRVR	NONE	69	M	OR-Y OR<25		000	000	00
00146 CITY	N	N	N		01/12/2011 Wed 4P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 2	N TRF SIGNAL 2	N CLD N WET N DUSK	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	22	F	OR-Y OR<25	026		000 000	07 00 07
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																		
														02	NONE 0 PRVTE	STOP S N									011	00
															PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00
																	02	PSNG	INJC	24	F			000	000	00
00864 NONE	N	N	N		03/11/2011 Fri 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 2	N L-GRN-SIG 2	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	24	M	OR-Y OR<25	026		000 000	07 00 07
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																		
														02	NONE 0 PRVTE	STOP S N									012	00
															PSNGR CAR		01	DRVR	INJB	51	M	OR-Y OR<25		000	000	00
01684 NONE	N	N	N		05/16/2011 Mon 8A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 0	N TRF SIGNAL 2	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	INJC	24	F	OR-Y OR<25	026		000 000	07 00 07
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																		
														02	NONE 0 PRVTE	STOP S N									011	00
															PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR>25		000	000	00
03992 NONE	N	N	N		10/25/2011 Tue 10A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 2	N TRF SIGNAL 2	N CLR N DRY N DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	57	M	OR-Y OR<25	026		000 000	07 00 07
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																		

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	DRUG	ALC	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 PRVTE	STOP S N									011		00
																		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y OR<25		000	000		00
04652 NONE	N	N	N	N	N	12/03/2011 Sat 9A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 2	N TRF SIGNAL	N N N	FOG DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N									000		27,07 00 27,07
No	*45 19 54.97*		*-122 34 30.30*					016000100		S00 1								PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR<25		016,026	000		
																	02	NONE 0 PRVTE	STOP S N									011		00
																		PSNGR CAR		01	DRVR	INJC	73	M	OR-Y OR<25		000	000		00
00069 STATE	N	N	N	N	N	01/06/2012 Fri 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N									000	004	07 00 07
No	*45 19 54.97*		*-122 34 30.30*					016000100		S00 1								PSNGR CAR		01	DRVR	NONE	16	F	OR-Y OR<25		043,026	000		
																	02	NONE 0 PRVTE	STOP S N									011	004	00
																		PSNGR CAR		01	DRVR	INJC	55	F	OR-Y OR<25		000	000		00
02327 UNK	N	N	N	N	N	06/29/2012 Fri 7A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 2	N TRF SIGNAL	N N N	CLD DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N									000		07,27 00 07,27
No	*45 19 54.97*		*-122 34 30.30*					016000100		S00 1								PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		026,016	038		
																	02	NONE 0 PRVTE	STOP S N									011		00
																		PSNGR CAR		01	DRVR	INJC	44	F	OR-Y OR<25		000	000		00
03411 NONE	N	N	N			09/13/2013 Fri 11A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT S N									000		07 00 07
No	*45 19 54.96*		*-122 34 30.30*					016000100		S00 1								PSNGR CAR		01	DRVR	NONE	63	F	OR-Y OR<25		026	000		
																	02	NONE 0 PRVTE	STOP S N									011		00
																		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		000	000		00
03520 NONE	N	N	N			09/20/2013 Fri 6A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAWN	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N									000		07 00 07
No	*45 19 54.96*		*-122 34 30.30*					016000100		S00 1								PSNGR CAR		01	DRVR	NONE	37	M	OR-Y OR<25		026	000		

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHL BUS	WORK ZONE	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	INJC	29	M	OR-Y OR<25		000	000	00
03630 NONE	N	N	N			09/27/2013 Fri 5A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAWN	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT S N									000	07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00	1								PSNGR CAR		01	DRVR	NONE	34	F	OR-Y OR<25		026	000	
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	NONE	49	F	OR-Y OR<25		000	000	00
00463 COUNTY	Y	N	N	N	N	02/05/2014 Wed 5A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DLIT	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N									000	07,01 00 07,01
No						*45 19 54.97 -122 34 30.30*		016000100S00	1								PSNGR CAR		01	DRVR	NONE	19	M	OTH-Y N-RES		026,047	000	
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	INJC	44	F	OR-Y OR<25		000	000	00
00709 NONE	N	N	N			02/17/2014 Mon 5A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	RAIN WET DLIT	S-1STOP REAR INJ	01	NONE 0 UNKN	STRGHT S N									000	07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1								PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000	
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	INJC	55	M	OR-Y OR<25		000	000	00
01295 NONE	N	N	N			04/03/2014 Thu 9A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT S N									000	07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1								PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR<25		026	000	
																02	NONE 0 UNKN	STOP S N									011	00
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		000	000	00
02651 NO RPT	N	N	N			06/26/2014 Thu 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT S N									000	29 00 29
No						*45 19 54.97 -122 34 30.30*		016000100S00	1								PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		026	000	

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	NONE	22	M	OR-Y OR<25		000	000	00
02801 NONE	N	N	N		07/21/2014 Mon 11A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER S 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT S N												29 00 29
No	*45 19 54.97*		*-122 34 30.30*				016000100S00		1															OR<25				
																02	NONE 0 PRVTE	STOP S N									011	00
																	PSNGR CAR		01	DRVR	INJC	20	F	OR-Y OR<25		000	000	00
03583 NO RPT	N	N	N		10/04/2010 Mon 3P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER W 06	CROSS 2	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR INJ	01	NONE 1 PRVTE	STRGHT W E												07 00 07
No	*45 19 54.47*		*-122 34 30.52*				016000100S00		1															OR<25				
																02	NONE 0 PRVTE	STOP W E									011	00
																	PSNGR CAR		01	DRVR	INJC	21	M	OR-Y OR<25		000	000	00
01378 NONE	N	N	N		01/12/2011 Wed 12P	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER W 06	CROSS 2	N TRF SIGNAL	N N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT W E												07 00 07
No	*45 19 54.97*		*-122 34 30.30*				016000100S00		1															OR<25				
																02	NONE 0 PRVTE	STOP W E									011	00
																	PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		000	000	00
03959 NONE	N	N	N		10/07/2014 Tue 7A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER W 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT W E												29 00 29
No	*45 19 54.97*		*-122 34 30.30*				016000100S00		1															OR<25				
																02	NONE 0 PRVTE	STOP W E									011	00
																	PSNGR CAR		01	DRVR	NONE	28	M	OR-Y OR<25		000	000	00
03636 NONE	N	N	N		10/08/2010 Fri 6A	CLACKAMAS OREGON CITY PORTLAND UA	1 MN 0 2.98	14	 S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 2	N YIELD	N N N	CLR DRY DAWN	S-1STOP REAR PDO	01	NONE 0 PRVTE	STRGHT NE SW												07 00 07
No	*45 19 54.97*		*-122 34 30.30*				016000100S00		1															OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED / ALC / SCHL	DRUG / WORK	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V# / SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P# / PRTC TYPE / INJ SVRTY	AGE / SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
												02 NONE 0	STOP						011	00
												PRVTE	NE SW							
												PSNGR CAR		01 DRVR NONE	00 M	OTH-Y		000	000	00
																UNK				
03710	N N N		10/11/2010	CLACKAMAS	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 POLCE 0	STRGHT							07
NONE			Mon 7A	OREGON CITY	MN 0	S BEAVERCREEK RD	NW		YIELD	N WET	REAR	UNKN	NE SW						000	00
				PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N DAY	INJ	PSNGR CAR		01 DRVR NONE	00 U	UNK		026	000	07
No	*45 19 54.97*		*-122 34 30.30*		016000100S00	1										UNK				
												02 NONE 0	STOP						011	00
												PRVTE	NE SW							
												PSNGR CAR		01 DRVR INJC	56 F	OR-Y		000	000	00
																OR<25				
01141	N N N		04/04/2011	CLACKAMAS	1 14		INTER	CROSS	N	N RAIN	S-1STOP	01 NONE 0	STRGHT							07
NONE			Mon 11A	OREGON CITY	MN 0	S BEAVERCREEK RD	NW		YIELD	N WET	REAR	PRVTE	NE SW						000	00
				PORTLAND UA	2.98	CASCADE HY SOUTH	09	2		N DAY	PDO	PSNGR CAR		01 DRVR NONE	00 F	OR-Y		026	000	07
No	*45 19 54.97*		*-122 34 30.30*		016000100S00	1										UNK				
												02 NONE 0	STOP						011	00
												PRVTE	NE SW							
												PSNGR CAR		01 DRVR NONE	44 M	OR-Y		000	000	00
																OR<25				
04735	N N N		12/08/2011	CLACKAMAS	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE 0	STRGHT							07
NONE			Thu 1P	OREGON CITY	MN 0	S BEAVERCREEK RD	NW		YIELD	N DRY	REAR	PRVTE	NE SW						000	00
				PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N DAY	PDO	PSNGR CAR		01 DRVR NONE	70 M	OR-Y		026	000	07
No	*45 19 54.97*		*-122 34 30.30*		016000100S00	1										OR<25				
												02 NONE 0	STOP						011	00
												PRVTE	NE SW							
												PSNGR CAR		01 DRVR NONE	64 F	OR-Y		000	000	00
																OR<25				
03846	N N N		10/15/2012	CLACKAMAS	1 14		INTER	CROSS	N	N RAIN	S-1STOP	01 NONE 0	STRGHT							07
NONE			Mon 5P	OREGON CITY	MN 0	S BEAVERCREEK RD	NW		YIELD	N WET	REAR	PRVTE	NE SW						000	00
				PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N DUSK	PDO	PSNGR CAR		01 DRVR NONE	46 M	OR-Y		026	000	07
No	*45 19 54.97*		*-122 34 30.30*		016000100S00	1										OR<25				
												02 NONE 0	STOP						011	00
												PRVTE	NE SW							
												PSNGR CAR		01 DRVR NONE	00 F	OR-Y		000	000	00
																OR<25				
04066	N N N		10/29/2012	CLACKAMAS	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE 0	STRGHT							07
NONE			Mon 12P	OREGON CITY	MN 0	S BEAVERCREEK RD	NW		YIELD	N DRY	REAR	PRVTE	NE SW						000	00
				PORTLAND UA	2.98	CASCADE HY SOUTH	09	3		N DAY	INJ	PSNGR CAR		01 DRVR NONE	24 M	OR-Y		026	000	07
No	*45 19 54.97*		*-122 34 30.30*		016000100S00	1										OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHL BUS	WORK ZONE	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0 PRVTE	STOP NE SW									011	00
																PSNGR CAR		01	DRVR	INJC	52	F	OR-Y OR<25		000	000		00
04076 NONE	N	N	N			10/29/2012 Mon 4P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT NE SW									000		07 00 07
No						*45 19 54.97 -122 34 30.30*		016000100S00	1							PSNGR CAR		01	DRVR	NONE	50	M	OR-Y OR<25		026	000		
															02	NONE 0 PRVTE	STOP NE SW									011	00
																PSNGR CAR		01	DRVR	INJB	46	M	OR-Y OR<25		000	000		00
04216 CITY	Y	N	N			11/08/2012 Thu 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	Y CLD N DRY N DAY	FIX OBJ FIX INJ	01	NONE 0 PRVTE	STRGHT NE SW									000	055 055	01 00 01
No						*45 19 54.97 -122 34 30.30*		016000100S00	1							PSNGR CAR		01	DRVR	INJC	51	F	OR-Y OR<25		047,081	000		
02430 NONE	N	N	N			07/07/2013 Sun 12P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT NE SW									000		07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00	1							PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		026	000		
															02	NONE 0 PRVTE	STOP NE SW									011	00
																PSNGR CAR		01	DRVR	INJC	36	M	OR-Y OR<25		000	000		00
03349 CITY	N	N	N	N	N	09/10/2013 Tue 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT NE SW									000		07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00	1							PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25		043,026	000		
															02	NONE 0 PRVTE	STOP NE SW									011	00
																PSNGR CAR		01	DRVR	INJC	30	F	OR-Y OR<25		000	000		00
04790 NONE	N	N	N			12/12/2013 Thu 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS 3	N YIELD	N CLR N DRY N DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE	STRGHT NE SW									000		07 00 07
No						*45 19 54.96 -122 34 30.30*		016000100S00	1							PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		026	000		
															02	NONE 0 PRVTE	STOP NE SW									011	00
																PSNGR CAR		01	DRVR	INJC	56	F	OR-Y OR<25		000	000		00

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	CONN #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00348	N	N	N			01/26/2014	CLACKAMAS	1 14			INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Sun 4P	OREGON CITY	MN 0	S BEAVERCREEK RD		NW		YIELD		N DRY	REAR		PRVTE	NE SW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09		3			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	00
																		PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		000	000	00
																									OR<25				
00768	N	N	N			02/21/2014	CLACKAMAS	1 14			INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Fri 7A	OREGON CITY	MN 0	S BEAVERCREEK RD		NW		YIELD		N DRY	REAR		PRVTE	NE SW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09		3			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	00
																		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		000	000	00
																									OR<25				
01784	N	N	N			05/09/2014	CLACKAMAS	1 14			INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE						Fri 10A	OREGON CITY	MN 0	S BEAVERCREEK RD		NW		YIELD		N DRY	REAR		PRVTE	NE SW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09		3			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		026	000	07
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	41	M	OR-Y		000	000	00
																									OR<25				
02955	N	N	N			08/01/2014	CLACKAMAS	1 14			INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						Fri 9P	OREGON CITY	MN 0	S BEAVERCREEK RD		NW		YIELD		N DRY	REAR		PRVTE	NE SW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09		3			N DLIT	INJ		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000	29
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	34	M	OR-Y		000	000	00
																									OR<25				
																				02	PSNG	INJC	36	F			000	000	00
04683	N	N	N			11/18/2014	CLACKAMAS	1 14			INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT										29
NO RPT						Tue 5P	OREGON CITY	MN 0	S BEAVERCREEK RD		NW		YIELD		N DRY	REAR		PRVTE	NE SW									000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	09		3			N DLIT	INJ		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		026	000	29
No						*45 19 54.97 -122 34 30.30*		016000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	00
																		PSNGR CAR		01	DRVR	INJB	35	M	OR-Y		000	000	00
																									OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHOOL BUS	WORK ZONE	DATE / DAY / TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF	LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00825	N	Y	N			03/09/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	O-OTHER	01	NONE 0	TURN-L											08
CITY						Wed 9P	OREGON CITY	MN 0	S BEAVERCREEK RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	N E										000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	01	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	46	M	OR-Y		001	000	08
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1																OR<25				
																02	NONE 0	TURN-L											
																	PRVTE	S W										000	00
																	PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		000	000	00
																								OR<25				
																			02	PSNG	INJC	21	M			000	000	00
03642	N	N	N			10/01/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											04
NO RPT						Mon 6A	OREGON CITY	MN 0	S BEAVERCREEK RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N S										000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	01	3		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		020	000	04
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1																OR<25				
																02	NONE 0	TURN-L											
																	PRVTE	S W										000	00
																	PSNGR CAR		01	DRVR	NONE	28	F	OR-Y		000	000	00
																								OR<25				
																			02	PSNG	NO<5	01	M			000	000	00
																			03	PSNG	INJC	03	F			000	000	00
00286	N	N	N	N	N	01/23/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L											02,04
STATE						Sun 6A	OREGON CITY	MN 0	S BEAVERCREEK RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW NW										000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	02	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	65	F	OR-Y		028,003	000	02,04
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1																OR<25				
																02	NONE 0	STRGHT											
																	PRVTE	NE SW										000	00
																	PSNGR CAR		01	DRVR	NONE	21	M	OR-Y		000	000	00
																								OR<25				
																			02	PSNG	INJC	27	F			000	000	00
04463	N	N	N			11/22/2011	CLACKAMAS	1 14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 1	STRGHT											04
NONE						Tue 10A	OREGON CITY	MN 0	S BEAVERCREEK RD	CN		TRF SIGNAL	N	WET	ANGL		PRVTE	S N										000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	02	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	44	M	OR-Y		097	000	00
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1																OR<25				
																02	NONE 0	STRGHT											
																	PRVTE	E W										000	00
																	PSNGR CAR		01	DRVR	NONE	77	F	OR-Y		097	000	00
																								OR<25				
00857	N	N	N	N	N	03/06/2012	CLACKAMAS	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT											04
CITY						Tue 9P	OREGON CITY	MN 0	S BEAVERCREEK RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	S N										000	00
							PORTLAND UA	2.98	CASCADE HY SOUTH	02	2		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y		020	000	04
No	*45 19 54.97*	*-122 34 30.30*						016000100S00	1																OR<25				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															02	NONE 0 PRVTE	TURN-L N E									000	00
																PSNGR CAR		01	DRVR	INJC	45	M	OR-Y OR<25		000	000	00
																		02	PSNG	INJA	39	F			000	000	00
00083 NONE	N	N	N		01/08/2013 Tue 7A	CLACKAMAS OREGON CITY	1 14 MN 0	S BEAVERCREEK RD	INTER CN	CROSS	N TRF SIGNAL	N	N RAIN N WET	S-1STOP REAR	01	NONE 0 PRVTE	TURN-L W N											000	07 00
						PORTLAND UA	2.98	CASCADE HY SOUTH	02	3		N	N DARK	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y OR<25		026	000	07
No					*45 19 54.96 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STOP W N									013	00
																PSNGR CAR		01	DRVR	NONE	38	M	OR-Y OR<25		000	000	00
05036 NONE	N	N	N		12/26/2013 Thu 7A	CLACKAMAS OREGON CITY	1 14 MN 0	S BEAVERCREEK RD	INTER CN	CROSS	N TRF SIGNAL	N	N UNK N WET	ANGL-OTH ANGL	01	NONE 0 PRVTE	STRGHT S N											000	04 00
						PORTLAND UA	2.98	CASCADE HY SOUTH	02	3		N	N DLIT	PDO		PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25		020	000	04
No					*45 19 54.96 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STRGHT E W									000	00
																PSNGR CAR		01	DRVR	NONE	57	F	OR-Y OR<25		000	000	00
03843 STATE	N	Y	N	N N	09/18/2011 Sun 1A	CLACKAMAS OREGON CITY	1 14 MN 0	S BEAVERCREEK RD	INTER CN	CROSS	N TRF SIGNAL	N	N RAIN N WET	ANGL-OTH ANGL	01	NONE 0 PRVTE	STRGHT N S										000	04 00
						PORTLAND UA	2.98	CASCADE HY SOUTH	03	2		N	N DLIT	FAT		PSNGR CAR		01	DRVR	INJC	58	M	OR-Y OR<25		000	000	00
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
															02	NONE 0 PRVTE	STRGHT W E									000	00
																PSNGR CAR		01	DRVR	KILL	29	F	OR-Y OR<25		020	000	04
																		02	PSNG	INJB	26	M			000	000	00
02536 STATE	N	N	N	N N	07/13/2012 Fri 7P	CLACKAMAS OREGON CITY	1 14 MN 0	S BEAVERCREEK RD	INTER CN	CROSS	N TRF SIGNAL	N	N CLR N DRY	ANGL-OTH ANGL	01	NONE 0 PRVTE	STRGHT W E										000	02,14 00
						PORTLAND UA	2.98	CASCADE HY SOUTH	03	2		N	N DAY	PDO		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y OR<25		028,024	000	02,14
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				
															02	POLCE 0 PUBLC	STRGHT N S									000	00
																PSNGR CAR		01	DRVR	NONE	45	M	OR-Y OR<25		000	000	00
04829 NONE	N	N	N		12/13/2012 Thu 7A	CLACKAMAS OREGON CITY	1 14 MN 0	S BEAVERCREEK RD	INTER CN	CROSS	N TRF SIGNAL	N	N UNK N UNK	S-1STOP REAR	01	NONE 0 PRVTE	STRGHT W E											000	07 00
						PORTLAND UA	2.98	CASCADE HY SOUTH	03	3		N	N DAWN	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25		026	000	07
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																				

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
															02	NONE 0 PRVTE	STOP W E									011	00
																PSNGR CAR		01	DRVR	NONE	00	F	UNK OR<25		000	000	00
04601 STATE	N	N	N		12/03/2010 Fri 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 04	CROSS 0	N TRF SIGNAL	N N N	CLR DRY DAY	S-OTHER REAR INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R S E	01	DRVR	NONE	19	M	OR-Y OR<25		026	000	07 00 07
No					*45 19 56.31 -122 34 29.78*		016000100S00	1																			
															02	NONE 0 PRVTE	STOP S E									013	00
																PSNGR CAR		01	DRVR	NONE	81	M	OR-Y OR<25		000	000	00
																		02	PSNG	INJC	77	F			000	000	00
00804 NONE	N	N	N		03/07/2011 Mon 10A	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 04	CROSS 2	N TRF SIGNAL	N N N	CLR DRY DAY	ANGL-OTH ANGL PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	NONE	00	F	UNK OR<25		020	000	04 00 04
No					*45 19 54.97 -122 34 30.30*		016000100S00	1																			
															02	NONE 0 PRVTE	STRGHT W E									000	00
																PSNGR CAR		01	DRVR	NONE	67	M	OR-Y OR<25		000	000	00
03336 CITY	N	N	N	N	N 09/09/2013 Mon 11P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.98	S BEAVERCREEK RD CASCADE HY SOUTH	INTER CN 04	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DLIT	O-1 L-TURN TURN INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S N	01	DRVR	INJC	29	M	OR-Y OR<25		000	000	04 00 00
No					*45 19 54.96 -122 34 30.30*		016000100S00	1																			
																		02	PSNG	INJB	21	F			000	000	00
															02	NONE 0 PRVTE	TURN-L N E									000	00
																PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		003	000	04
01847 NONE	N	N	N		05/26/2010 Wed 1P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.99	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 2	N YIELD	N N N	RAIN WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	00	M	OR-Y OR<25		016,026	000	27,07 00 27,07
No					*45 19 54.47 -122 34 30.52*		016000100S00	1																			
															02	NONE 0 PRVTE	STOP SE NW									011	00
																PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		000	000	00
03021 NONE	N	N	N		08/27/2010 Fri 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.99	S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS 3	N YIELD	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	29	M	OR-Y OR<25		026	000	07 00 07
No					*45 19 54.47 -122 34 30.52*		016000100S00	1																			
																		02	PSNG	NO<5	01	M			000	000	00

160 CASCADE HWY SOUTH

OR 213 Cascade Highway (160) & Beavercreek Road
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	INJC	30	F	OR-Y OR<25		000	000	00
																				02	PSNG	NO<5	02	M			000	000	00
03164 NONE	N	N	N			09/05/2010 Sun 2P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.99		S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS (3)	N YIELD 3	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	41	M	OR-Y OR<25		026	000	07
No	*45 19 54.47*		*-122 34 30.52*					016000100S00		1																		
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	INJC	20	M	OR-Y OR<25		000	000	00
03715 NONE	N	N	N			10/13/2010 Wed 3P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.99		S BEAVERCREEK RD CASCADE HY SOUTH	INTER NE 09	CROSS (2)	N YIELD 2	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT SE NW	01	DRVR	NONE	20	F	OR-Y OR<25		026	000	07
No	*45 19 54.47*		*-122 34 30.52*					016000100S00		1																		
																	02	NONE 0 PRVTE	STOP SE NW									011	00
																		PSNGR CAR		01	DRVR	INJC	27	F	OR-Y OR<25		000	000	00
03163 NONE	N	N	N			09/05/2010 Sun 4P	CLACKAMAS OREGON CITY PORTLAND UA	1 14 MN 0 2.99		S BEAVERCREEK RD CASCADE HY SOUTH	INTER NW 09	CROSS (3)	N YIELD 3	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT NE SW	01	DRVR	NONE	19	M	OR-Y OR<25		026	000	07
No	*45 19 54.47*		*-122 34 30.52*					016000100S00		1																		
																	02	NONE 0 PRVTE	STOP NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	17	M	OR-Y OR<25		000	000	00

CITY OF OREGON CITY, CLACKAMAS COUNTY — OR 213 Cascade Highway (160) & Beavercreek Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04472	N	N	N			11/25/2010	19	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	STRGHT											07
NONE						Thu 12P	0	CASCADE HY SOUTH	NE		YIELD	N	DRY	REAR		PRVTE	SE NW									000		00
No	*45 19 54.97*					*-122 34 30.30*		1	09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y OR<25		026	038		07
															02	NONE	STOP											
																PRVTE	SE NW									011		00
																PSNGR CAR		01	DRVR	NONE	57	M	OR-Y OR<25		000	000		00
00577	N	N	N	N	N	02/19/2013	16	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
CITY						Tue 6A	0	CASCADE HY SOUTH	NE		YIELD	N	WET	REAR		PRVTE	SE NW									000		00
No	*45 19 54.97*					*-122 34 30.30*		1	09	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	53	M	OR-Y OR<25		043,026	000		07
															02	NONE 0	STOP											
																PRVTE	SE NW									011		00
																PSNGR CAR		01	DRVR	INJB	57	M	OR-Y OR<25		000	000		00
00942	N	N	N			03/21/2010	16	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sun 10A	0	CASCADE HY SOUTH	E		YIELD	N	WET	REAR		PRVTE	E W									000		00
No	*45 19 54.97*					*-122 34 30.30*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	65	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	E W									011		00
																PSNGR CAR		01	DRVR	NONE	56	M	OR-Y OR<25		000	000		00
04125	N	N	N			11/07/2010	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
NONE						Sun 9A	0	CASCADE HY SOUTH	E		YIELD	N	WET	REAR		PRVTE	E W									000		00
No	*45 19 54.97*					*-122 34 30.30*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	E W									011		00
																PSNGR CAR		01	DRVR	NONE	00	F	UNK UNK		000	000		00
04322	N	N	N			11/17/2010	16	S BEAVERCREEK RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										013	07
NONE						Wed 4P	0	CASCADE HY SOUTH	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000		00
No	*45 19 54.97*					*-122 34 30.30*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	27	M	OR-Y OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	E W									011	013	00
																PSNGR CAR		01	DRVR	INJB	83	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	E W									022		00
																PSNGR CAR		01	DRVR	INJC	47	M	OR-Y OR<25		000	000		00
																		02	PSNG	INJC	24	F			000	000		00
																		03	PSNG	NO<5	04	M			000	000		00

CITY OF OREGON CITY, CLACKAMAS COUNTY — OR 213 Cascade Highway (160) & Beavercreek Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																		04	PSNG	NO<5	02	F			000	000		00
00355	Y	N	Y	N	N	01/30/2011	16	S BEAVERCREEK RD	INTER	CROSS	N		N	CLD	S-1STOP	01	NONE 0	STRGHT											16,32
CITY						Sun 3P	0	CASCADE HY SOUTH	E		TRF SIGNAL		N	DRY	REAR		PRVTE	E W											00
Yes						*45 19 54.98 -122 34 30.29*		1	06	2			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	72	F	OR-Y OR<25		053,026,011	025		16,32
															02	NONE 0	STOP											
																PRVTE	E W											00
																PSNGR CAR		01	DRVR	INJB	51	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	E W											00
																PSNGR CAR		01	DRVR	NONE	54	M	OR-Y OR<25		000	000		00
01217	N	N	N			04/11/2011	16	S BEAVERCREEK RD	INTER	CROSS	N		N	CLR	S-OTHER	01	NONE 0	STRGHT											07
NONE						Mon 8P	0	CASCADE HY SOUTH	E		UNKNOWN		N	DRY	REAR		PRVTE	E W											00
Yes						*45 19 54.98 -122 34 30.29*		1	06	0			N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	47	F	OTH-Y N-RES		042	000		07
															02	NONE 0	STRGHT											
																PRVTE	E W											00
																PSNGR CAR		01	DRVR	NONE	56	F	OR-Y OR<25		000	000		00
																		02	PSNG	INJC	18	F			000	000		00
01368	Y	N	N	N	N	04/22/2011	16	S BEAVERCREEK RD	INTER	CROSS	N		N	CLR	S-1STOP	01	NONE 0	STRGHT										013	01
STATE						Fri 2P	0	CASCADE HY SOUTH	E		TRF SIGNAL		N	DRY	REAR		PRVTE	S N											00
Yes						*45 19 54.98 -122 34 30.29*		1	06	0			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	41	F	OR-Y OR<25		047,026	000		01
															02	NONE 0	STOP											
																PRVTE	S N											00
																PSNGR CAR		01	DRVR	NONE	17	F	OR-Y OR<25		000	000		00
															03	NONE 0	STOP											
																PRVTE	S N											00
																PSNGR CAR		01	DRVR	NONE	22	M	OR-Y OR<25		000	000		00
04115	N	N	N			11/03/2011	16	S BEAVERCREEK RD	INTER	CROSS	N		N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Thu 11A	0	CASCADE HY SOUTH	E		TRF SIGNAL		N	DRY	REAR		PRVTE	E W											00
Yes						*45 19 54.98 -122 34 30.29*		1	06	0			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000		07
															02	NONE 0	STOP											
																PRVTE	E W											00
																PSNGR CAR		01	DRVR	INJC	25	F	OR-Y OR>25		000	000		00
00750	N	N	N			02/27/2012	16	S BEAVERCREEK RD	INTER	CROSS	N		N	UNK	S-1STOP	01	NONE 0	STRGHT											07
NONE						Mon 2P	0	CASCADE HY SOUTH	E		TRF SIGNAL		N	WET	REAR		PRVTE	E W											00
No						*45 19 54.97 -122 34 30.30*		1	06	3			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		026	000		07

CITY OF OREGON CITY, CLACKAMAS COUNTY — OR 213 Cascade Highway (160) & Beavercreek Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE 0 PRVTE PSNGR CAR	STOP E W										011 000	00 00
05319	N	N	N			12/31/2014 Wed 9P *45 19 54.97 -122 34 30.30*	16 0	S BEAVERCREEK RD CASCADE HY SOUTH 1	INTER E 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DLIT	S-1STOP REAR INJ	01	NONE 0 UNKN PSNGR CAR	STRGHT UN UN	01	DRVR	NONE	00	U	UNK UNK		026		29 000 000	29 00 29
															02	NONE 0 PRVTE PSNGR CAR	STOP UN UN	01 02	DRVR PSNG	INJC INJC	16 18	F F	OR-Y OR<25		000 000		011 000 000	00 00 00
04873	N	N	N			12/19/2011 Mon 2P *45 19 54.96 -122 34 30.29*	16 0	S BEAVERCREEK RD CASCADE HY SOUTH 1	INTER W 06	CROSS 1	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E	01	DRVR	NONE	00	M	OR-Y OR<25		026		07 000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W E	01	DRVR	NONE	30	F	OR-Y OR<25		000		011 000	00 00
02778	N	N	N			07/29/2012 Sun 10A *45 19 54.97 -122 34 30.30*	16 0	S BEAVERCREEK RD CASCADE HY SOUTH 1	INTER W 06	CROSS 2	N L-TURN REF	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E	01	DRVR	NONE	37	F	OR-Y OR<25		026		07 000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W E	01	DRVR	NONE	51	F	OR-Y OR<25		000		012 000	00 00
02536	N	N	N			07/15/2013 Mon 6P *45 19 54.97 -122 34 30.30*	16 0	S BEAVERCREEK RD CASCADE HY SOUTH 1	INTER W 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E	01	DRVR	NONE	44	M	OR-Y OR<25		026		07 000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W E	01	DRVR	NONE	60	F	OR-Y OR<25		000		011 000	00 00
04147	N	N	N			10/29/2013 Tue 3P *45 19 54.97 -122 34 30.30*	16 0	S BEAVERCREEK RD CASCADE HY SOUTH 1	INTER W 06	CROSS 3	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W E	01	DRVR	NONE	20	F	OR-Y OR>25		026		07 000 000	07 00 07
															02	NONE 0 PRVTE PSNGR CAR	STOP W E	01	DRVR	INJC	34	F	OR-Y OR<25		000		011 000	00 00

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00273	N	N	N	N	N	01/01/2014	16	S BEAVERCREEK RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						Wed 9A	0	CASCADE HY SOUTH	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E										000		00
No						*45 19 54.97 -122 34 30.30*		1	06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	65	F	SUSP OR<25		026	000		07
															02	NONE 0	STOP											
																PRVTE	W E										011		00
																PSNGR CAR		01	DRVR	INJC	21	F	OR-Y OR<25		000	000		00

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUING OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PRKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/ SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRACT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
&	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN,ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	UNK	UNKNOWN TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING

095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015

Total crash records: 27

SER# / INVEST	SPEED	ALCOHOL	DRUGS	SCHL BUS	WORK ZONE	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) LEGS (#LANES)	INT-REL / TRAF-CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT EVENT	CAUSE
01593	N	N	N			05/08/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27,07
NO RPT						WE		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y OR<25		016,026	000	27,07
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	INJC	63	F	OR-Y OR<25		000	000	00
04034	Y	N	N			10/22/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										01,07
CITY						TU		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						8P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	57	F	OR-Y OR<25		047,043,026	000	01,07
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		000	000	00
04654	N	N	N			11/17/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						MO		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						12P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	60	M	OTH-Y N-RES		026	000	29
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	NONE	66	F	OR-Y OR>25		000	000	00
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		02	PSNG	INJC	61	F			000	000	00
01056	N	N	N			03/26/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						TH		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						2P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	NONE	44	F	OR-Y OR<25		000	000	00
02925	N	N	N			07/20/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE						MO		REDLAND RD	N		TRF SIGNAL	N	DRY	REAR		PRVTE	N -S									000	00
						3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y OR<25		026	000	29
															02	NONE 0	STOP										
																PRVTE	N -S									011	00
																PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		000	000	00
00947	N	N	N			03/19/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
NONE						TU		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		UNKN	S -N									000	00
						1P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y UNK		026	000	07
															02	NONE 0	STOP										
																PRVTE	S -N									011	00
																PSNGR CAR		01	DRVR	NONE	18	F	OR-Y		000	000	00

CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015

Total crash records: 27

SER# / INVEST	S P E D	A L C	U G S	C H L	O R K	W	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																								OR<25					
02451	N	N	N	N	N		07/09/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											013	27,07
CITY							TU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
							3P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		016,026	038		27,07
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011	013	00
																	PSNGR CAR		01	DRVR	NONE	46	F	OR-Y		000	000		00
																								OR<25					
																03	NONE 0	STOP											
																	PRVTE	S -N									022		00
																	PSNGR CAR		01	DRVR	INJC	35	M	OR-Y		000	000		00
																								OR<25					
																03	NONE 0	STOP											
																	PRVTE	S -N									022		00
																	PSNGR CAR		02	PSNG	NO<5	04	M			000	000		00
03817	N	N	N				09/29/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT												29
NO RPT							MO		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
							3P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		026	000		29
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		000	000		00
																								OR<25					
04185	N	N	N				10/21/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE							TU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
							UNK			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	28	M	OTH-Y		026	000		29
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	44	M	OR-Y		000	000		00
																								OR<25					
01123	N	N	N				03/31/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT												29
NONE							TU		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
							6A			06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	44	F	OR-Y		026	000		29
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		01	DRVR	INJC	35	M	OR-Y		000	000		00
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00
																	PSNGR CAR		02	PSNG	INJC	34	F			000	000		00
02150	N	N	N				06/04/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NO RPT							TH		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
							10A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	55	M	OR-Y		026	000		29
																								OR<25					
																02	NONE 0	STOP											
																	PRVTE	S -N									011		00

CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015

Total crash records: 27

SER# / INVEST	SPE	ALC	DRS	SWK	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
															PSNGR CAR		01	DRVR	INJC	62	F	OR-Y OR<25		000	000		00
04080	N	N	N		10/04/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											013	29
NONE					SU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
					1P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	18	F	OR-Y OR<25		026	000		29
														02	NONE 0	STOP										011	013	00
															PRVTE	S -N												
															PSNGR CAR		01	DRVR	NONE	18	F	OR-Y OR<25		000	000		00
														03	NONE 0	STOP										022		00
															PRVTE	S -N												
															PSNGR CAR		01	DRVR	INJC	77	F	OR-Y OR<25		000	000		00
04189	N	N	N		10/11/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT												29
NONE					SU		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									000		00
					7P			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		026	000		29
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		01	DRVR	NONE	19	M	OR-Y OR<25		000	000		00
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		02	PSNG	INJC	26	F			000	000		00
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		03	PSNG	INJC	48	M			000	000		00
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		04	PSNG	INJC	45	F			000	000		00
04343	N	N	N		10/21/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	FOG	S-1STOP	01	NONE 0	STRGHT												29
NONE					WE		REDLAND RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S -N									001		00
					7A			06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR<25		026	000		29
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		01	DRVR	INJC	52	M	OR-Y OR<25		000	000		00
05452	N	N	N		12/18/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT												29
NONE					FR		REDLAND RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S -N									000		00
					6A			06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	42	F	OR-Y OR<25		026	000		29
														02	NONE 0	STOP										011		00
															PRVTE	S -N												
															PSNGR CAR		01	DRVR	INJC	51	M	OR-Y OR<25		000	000		00
00828	N	N	N		02/25/2014	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R												08

CITY OF OREGON CITY, CLACKAMAS COUNTY

REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015

Total crash records: 27

SER# / INVEST	S P E D	A L C	U G S	C H L	O R K	W S	DATE / DAY / TIME	CLASS / DIST / FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
NONE							TU 2P		REDLAND RD	W 06	0	TRF SIGNAL	N N	DRY DAY	TURN PDO		PRVTE PSNGR CAR	N -W	01	DRVR	NONE	32	M	OR-Y OR<25		001	000		00 08
																02	NONE 0 PRVTE	STOP W -E									012		00
																	PSNGR CAR		01	DRVR	NONE	50	M	OR-Y OR<25		000	000		00
02177 NO RPT	N	N	N				06/06/2015 SA 5P	14	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N TRF SIGNAL	N N N	CLR DRY DAY	ANGL-STP TURN INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-R N -W	01	DRVR	INJC	32	M	OR-Y OR<25		001	000 000		08 00 08
																02	NONE 0 PRVTE TRUCK	STOP W -E	01	DRVR	NONE	35	M	OR-Y OR<25		000	012 000		00 00
																02	NONE 0 PRVTE TRUCK	STOP W -E	02	PSNG	INJC	42	M			000	012 000		00 00
00301 NONE	N	N	N				01/25/2013 FR 11A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N R-GRN-SIG	N N N	UNK WET DAY	S-1STOP REAR PDO	01	NONE 0 PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	59	M	OR-Y OR<25		006	000 000		08 00 08
																02	NONE 0 PRVTE PSNGR CAR	TURN-R W -S	01	DRVR	NONE	40	F	OR-Y OR<25		000	000 000		00 00
00847 NONE	N	N	N				03/12/2013 TU 10A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	3-LEG 0	N L-GRN-SIG	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	00	F	UNK OR<25		026	000 000		07 00 07
																02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	INJC	74	F	OR-Y OR<25		000	012 000		00 00
																02	NONE 0 PRVTE PSNGR CAR	STOP W -E	02	PSNG	INJC	56	F			000	012 000		00 00
02290 NONE	N	N	N				06/28/2013 FR 8A	16 0	CASCADE HY SOUTH REDLAND RD	INTER W 06	0	N TRF SIGNAL	N N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	74	M	OR-Y OR<25		026	000 000	013	07 00 07
																02	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	INJC	43	M	OR-Y OR<25		000	011 000	013	00 00
																03	NONE 0 PRVTE PSNGR CAR	STOP W -E	01	DRVR	NONE	46	F	OR-Y OR<25		000	022 000		00 00

CITY OF OREGON CITY, CLACKAMAS COUNTY **REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015**

Total crash records: 27

SER# / INVEST	S P E D	A L C	U G S	C H L	O R K	W	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
03843	N	N	N				10/09/2013	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							WE	0	REDLAND RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	E -W									000	00
							9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	22	M	OR-Y OR<25		026	000	07
																02	NONE 0	STOP										
																	PRVTE	E -W									012	00
																	PSNGR CAR		01	DRVR	NONE	56	F	OR-Y OR<25		000	000	00
04583	N	N	N				11/25/2013	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							MO	0	REDLAND RD	W		TRF SIGNAL	N	UNK	REAR		PRVTE	W -E									000	00
							4P			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OTH-Y N-RES		026	000	07
																02	NONE 0	STOP										
																	PRVTE	W -E									012	00
																	PSNGR CAR		01	DRVR	INJC	51	F	OR-Y OR<25		000	000	00
00188	N	N	N				01/14/2014	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
NONE							TU	0	REDLAND RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W -E									000	00
							4P			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y OR<25		026	000	07
																02	NONE 0	STOP										
																	PRVTE	W -E									011	00
																	PSNGR CAR		01	DRVR	NONE	37	F	OR-Y OR<25		000	000	00
																02	NONE 0	STOP										
																	PRVTE	W -E									011	00
																	PSNGR CAR		02	PSNG	NO<5	01	M			000	000	00
04409	N	N	N				11/02/2014	16	CASCADE HY SOUTH	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										29
NONE							SU	0	REDLAND RD	W		TRF SIGNAL	N	WET	REAR		PRVTE	W -E									000	00
							9A			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y OR<25		026	000	29
																02	NONE 0	STOP										
																	PRVTE	W -E									011	00
																	PSNGR CAR		01	DRVR	INJC	35	M	OR-Y OR<25		000	000	00
																02	NONE 0	STOP										
																	PRVTE	W -E									011	00
																	PSNGR CAR		02	PSNG	INJC	12	F			000	000	00
04081	Y	N	N	N	Y		10/25/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLD	S-STRGHT	01	NONE 0	STRGHT										13,01,07
STATE							FR		REDLAND RD	CN		TRF SIGNAL	N	WET	SS-O		PRVTE	S -N									007	00
							7A			04	0		N	DAWN	PDO		TRUCK		01	DRVR	NONE	54	M	OR-Y OR<25		045,047,026	000	13,01,07
																02	LOG 0	STRGHT										
																	PRVTE	S -N									006	00
																	BOBTAIL		01	DRVR	NONE	60	M	OTH-Y N-RES		000	000	00
																03	NONE 0	STOP										
																	PRVTE	S -N									011	00
																	PSNGR CAR		01	DRVR	NONE	58	F	OR-Y		000	000	00

CITY OF OREGON CITY, CLACKAMAS COUNTY **REDLAND RD at CASCADE HY SOUTH, City of Oregon City, Clackamas County, 01/01/2013 to 12/31/2015**

Total crash records: 27

SER# / INVEST	S P E D	A L C	U G S	C H L	O R K	W	DATE / DAY / TIME	CLASS / DIST FROM	CITY STREET / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																								OR<25					
04321	Y	N	N				11/07/2013	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											124	04,01
NO RPT							TH		REDLAND RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	N -S									000		00
							2P			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y		000	000		00
																								OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	W -N									001		00
																	PSNGR CAR		01	DRVR	INJC	59	F	OR-Y		047,020	000		04,01
																								OR<25					
05054	N	N	N				11/29/2015	14	CASCADE HY SOUTH	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT												04
NO RPT							SU		REDLAND RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N -S									000		00
							10A			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	80	F	OR-Y		020	038		04
																								OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	W -N									000		00
																	PSNGR CAR		01	DRVR	NONE	64	F	OR-Y		000	000		00
																								OR<25					

Type of peak hour being reported: Intersection Peak

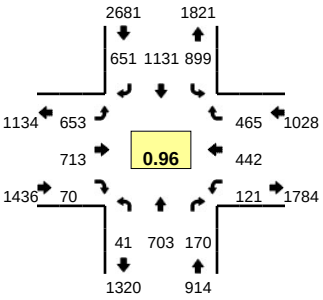
Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- Beavercreek Rd

CITY/STATE: Oregon City, OR

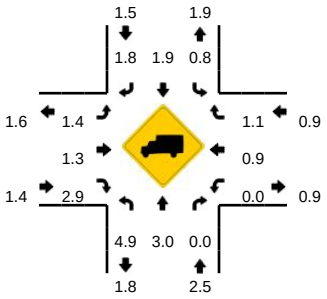
QC JOB #: 13715401

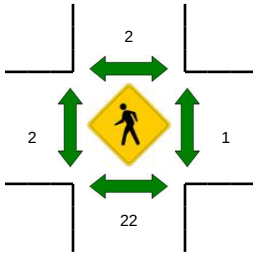
DATE: Tue, Feb 23 2016

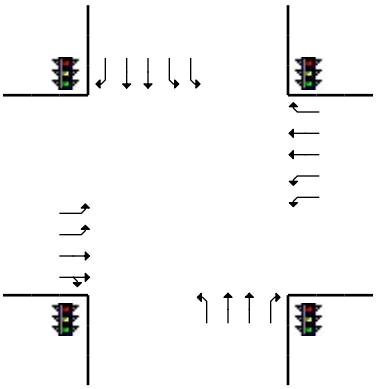


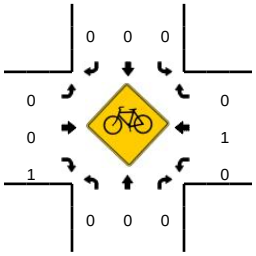
Peak-Hour: 4:55 PM -- 5:55 PM

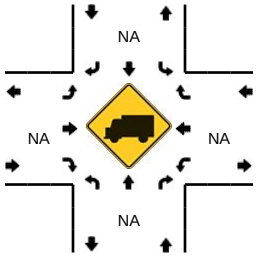
Peak 15-Min: 5:15 PM -- 5:30 PM

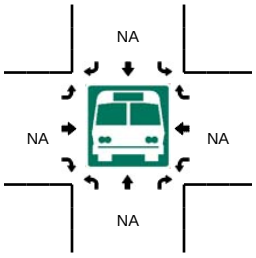












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Beavercreek Rd (Eastbound)				Beavercreek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:25 PM	5	62	14	0	63	76	60	0	47	60	5	0	14	50	30	0	486	5909
4:30 PM	1	64	14	0	59	96	59	0	34	53	5	0	17	34	25	0	461	5936
4:35 PM	3	71	13	0	78	99	55	0	38	51	15	0	11	24	35	0	493	5947
4:40 PM	2	37	8	0	65	78	54	0	60	66	11	0	6	53	30	0	470	5947
4:45 PM	7	33	13	0	53	77	60	0	70	66	1	0	11	29	28	0	448	5919
4:50 PM	4	44	13	0	82	123	51	0	39	46	7	0	6	29	38	0	482	5886
4:55 PM	3	65	15	0	53	81	63	0	55	52	3	0	11	37	45	0	483	5858
5:00 PM	2	84	10	0	73	68	50	0	41	55	6	0	7	42	37	0	475	5830
5:05 PM	7	51	12	0	72	76	60	0	72	70	10	0	9	32	31	1	503	5818
5:10 PM	4	79	25	0	57	104	49	0	66	54	7	0	11	34	34	0	524	5835
5:15 PM	5	47	15	0	80	94	58	0	64	63	6	0	8	35	38	0	513	5823
5:20 PM	0	61	21	0	75	98	60	0	66	60	6	0	15	32	36	0	530	5868
5:25 PM	6	58	12	0	81	102	50	0	58	64	6	0	14	41	36	0	528	5910
5:30 PM	0	49	15	0	72	108	54	0	39	55	3	0	6	36	35	0	472	5921
5:35 PM	1	48	9	0	88	100	52	0	69	50	7	0	6	33	43	0	506	5934
5:40 PM	4	77	14	0	87	99	53	0	36	50	1	0	11	40	44	0	516	5980
5:45 PM	5	44	8	0	81	115	48	0	46	63	7	0	13	39	48	1	518	6050
5:50 PM	4	40	14	0	80	86	54	0	41	77	8	0	8	41	38	0	491	6059
5:55 PM	5	47	10	0	69	76	39	0	45	68	9	0	12	36	36	0	452	6028
6:00 PM	2	59	11	0	69	92	41	0	45	50	4	0	11	41	38	0	463	6016
6:05 PM	2	41	8	0	46	55	31	0	73	63	6	0	14	35	40	0	414	5927
6:10 PM	1	72	9	0	48	85	34	0	53	48	6	0	9	28	29	0	422	5825
6:15 PM	1	39	15	0	78	80	43	0	38	45	4	0	5	20	27	0	395	5707
6:20 PM	0	42	19	0	47	57	51	0	35	57	4	0	11	38	26	0	387	5564

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	44	664	192	0	944	1176	672	0	752	748	72	0	148	432	440	0	6284
Heavy Trucks	4	24	0		12	20	20		20	4	0		0	4	0		108
Pedestrians		32				0				0				0			32
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

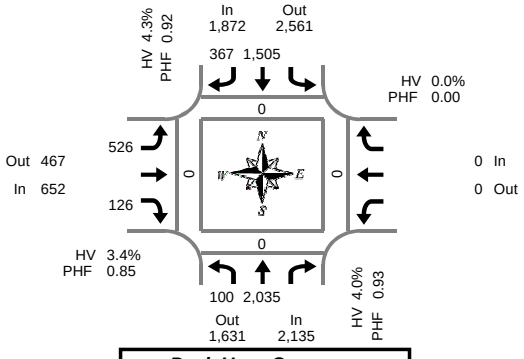
Comments:

Report generated on 3/1/2016 11:30 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:20 AM to 8:20 AM

Hwy 213 & Redland Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
7:00 AM	8	139		0	75	17		0	55		18	0				0	312	0	0	0	0
7:05 AM	7	183		0	100	24		0	49		6	0				0	369	0	0	0	0
7:10 AM	0	164		0	93	16		0	43		17	0				0	333	0	0	0	0
7:15 AM	7	154		0	105	26		0	67		15	0				0	374	0	0	0	0
7:20 AM	10	197		0	125	40		0	34		12	0				0	418	0	0	0	0
7:25 AM	4	189		0	116	35		0	40		18	0				0	402	0	0	0	0
7:30 AM	4	172		0	109	29		0	58		16	0				0	388	0	0	0	0
7:35 AM	14	179		0	112	31		0	48		12	0				0	396	0	0	0	0
7:40 AM	10	178		0	168	35		0	33		9	0				0	433	0	0	0	0
7:45 AM	7	169		0	116	32		0	50		10	0				0	384	0	0	0	0
7:50 AM	13	149		0	132	26		0	45		13	0				0	378	0	0	0	0
7:55 AM	8	160		0	149	25		0	32		4	0				0	378	0	0	0	0
8:00 AM	6	148		0	121	30		0	35		9	0				0	349	0	0	0	0
8:05 AM	7	154		0	90	31		0	62		10	0				0	354	0	0	0	0
8:10 AM	8	181		0	119	31		0	41		4	0				0	384	0	0	0	0
8:15 AM	9	159		0	148	22		0	48		9	0				0	395	0	0	0	0
8:20 AM	6	132		0	89	41		0	58		13	0				0	339	0	0	0	0
8:25 AM	3	137		0	112	25		0	32		4	0				0	313	0	0	0	0
8:30 AM	6	141		0	148	33		0	40		14	0				0	382	0	0	0	0
8:35 AM	5	142		0	106	15		0	40		8	0				0	316	0	0	0	0
8:40 AM	11	154		0	128	33		0	53		9	0				0	388	0	0	0	0
8:45 AM	9	129		0	147	21		0	41		8	0				0	355	0	0	0	0
8:50 AM	4	143		0	118	26		0	43		4	0				0	338	0	0	0	0
8:55 AM	12	123		0	124	18		0	49		11	0				0	337	0	0	0	0
Total Survey	178	3,776		0	2,850	662		0	1,096		253	0				0	8,815	0	0	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
7:00 AM	15	486		0	268	57		0	147		41	0				0	1,014	0	0	0	0
7:15 AM	21	540		0	346	101		0	141		45	0				0	1,194	0	0	0	0
7:30 AM	28	529		0	389	95		0	139		37	0				0	1,217	0	0	0	0
7:45 AM	28	478		0	397	83		0	127		27	0				0	1,140	0	0	0	0
8:00 AM	21	483		0	330	92		0	138		23	0				0	1,087	0	0	0	0
8:15 AM	18	428		0	349	88		0	138		26	0				0	1,047	0	0	0	0
8:30 AM	22	437		0	382	81		0	133		31	0				0	1,086	0	0	0	0
8:45 AM	25	395		0	389	65		0	133		23	0				0	1,030	0	0	0	0
Total Survey	178	3,776		0	2,850	662		0	1,096		253	0				0	8,815	0	0	0	0

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	2,135	1,631	3,766	0	1,872	2,561	4,433	0	652	467	1,119	0	0	0	0	0	4,659	0	0	0	0
%HV	4.0%				4.3%				3.4%				0.0%				4.1%				
PHF	0.93				0.92				0.85				0.00				0.96				

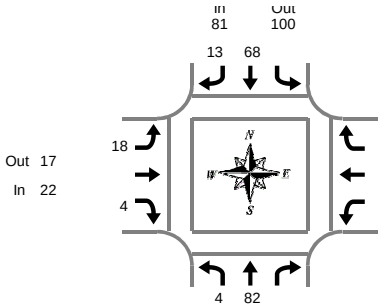
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total		T	R	Total	L		R	Total				Total	
Volume	100	2,035		2,135		1,505	367	1,872	526		126	652				0	4,659
%HV	4.0%	4.0%	NA	4.0%	NA	4.5%	3.5%	4.3%	3.4%	NA	3.2%	3.4%	NA	NA	NA	0.0%	4.1%
PHF	0.81	0.91		0.93		0.90	0.88	0.92	0.87		0.68	0.85				0.00	0.96

Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
7:00 AM	92	2,033		0	1,400	336		0	554		150	0				0	4,565	0	0	0	0
7:15 AM	98	2,030		0	1,462	371		0	545		132	0				0	4,638	0	0	0	0
7:30 AM	95	1,918		0	1,465	358		0	542		113	0				0	4,491	0	0	0	0
7:45 AM	89	1,826		0	1,458	344		0	536		107	0				0	4,360	0	0	0	0
8:00 AM	86	1,743		0	1,450	326		0	542		103	0				0	4,250	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & Redland Rd

Wednesday, January 25, 2017
7:00 AM to 9:00 AM

Peak Hour Summary
7:20 AM to 8:20 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	1	5		6	9	2	11		1		1	2				0	19
7:05 AM	1	5		6	1	0	1		3		2	5				0	12
7:10 AM	0	10		10	3	0	3		4		0	4				0	17
7:15 AM	2	7		9	8	2	10		4		1	5				0	24
7:20 AM	1	6		7	4	0	4		1		0	1				0	12
7:25 AM	0	8		8	10	0	10		3		0	3				0	21
7:30 AM	0	3		3	5	0	5		1		1	2				0	10
7:35 AM	0	5		5	0	2	2		2		0	2				0	9
7:40 AM	0	2		2	8	0	8		2		0	2				0	12
7:45 AM	1	12		13	7	2	9		4		0	4				0	26
7:50 AM	0	9		9	4	2	6		1		0	1				0	16
7:55 AM	0	11		11	3	2	5		1		1	2				0	18
8:00 AM	1	10		11	4	1	5		0		2	2				0	18
8:05 AM	0	3		3	6	0	6		1		0	1				0	10
8:10 AM	0	6		6	8	4	12		1		0	1				0	19
8:15 AM	1	7		8	9	0	9		1		0	1				0	18
8:20 AM	0	5		5	8	2	10		2		2	4				0	19
8:25 AM	0	5		5	12	3	15		5		0	5				0	25
8:30 AM	0	7		7	3	4	7		3		1	4				0	18
8:35 AM	1	13		14	4	4	8		2		0	2				0	24
8:40 AM	0	8		8	9	0	9		2		0	2				0	19
8:45 AM	0	6		6	4	1	5		1		1	2				0	13
8:50 AM	0	7		7	15	2	17		0		0	0				0	24
8:55 AM	0	5		5	9	3	12		1		0	1				0	18
Total Survey	9	165		174	153	36	189		46		12	58				0	421

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	2	20		22	13	2	15		8		3	11				0	48
7:15 AM	3	21		24	22	2	24		8		1	9				0	57
7:30 AM	0	10		10	13	2	15		5		1	6				0	31
7:45 AM	1	32		33	14	6	20		6		1	7				0	60
8:00 AM	1	19		20	18	5	23		2		2	4				0	47
8:15 AM	1	17		18	29	5	34		8		2	10				0	62
8:30 AM	1	28		29	16	8	24		7		1	8				0	61
8:45 AM	0	18		18	28	6	34		2		1	3				0	55
Total Survey	9	165		174	153	36	189		46		12	58				0	421

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	86	72	158	81	100	181	22	17	39	0	0	0	189
PHF	0.65			0.75			0.69			0.00			0.79

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	4	82		86	68	13	81		18		4	22				0	189
PHF	1.00	0.64		0.65	0.74	0.54	0.75		0.56		0.33	0.69				0.00	0.79

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

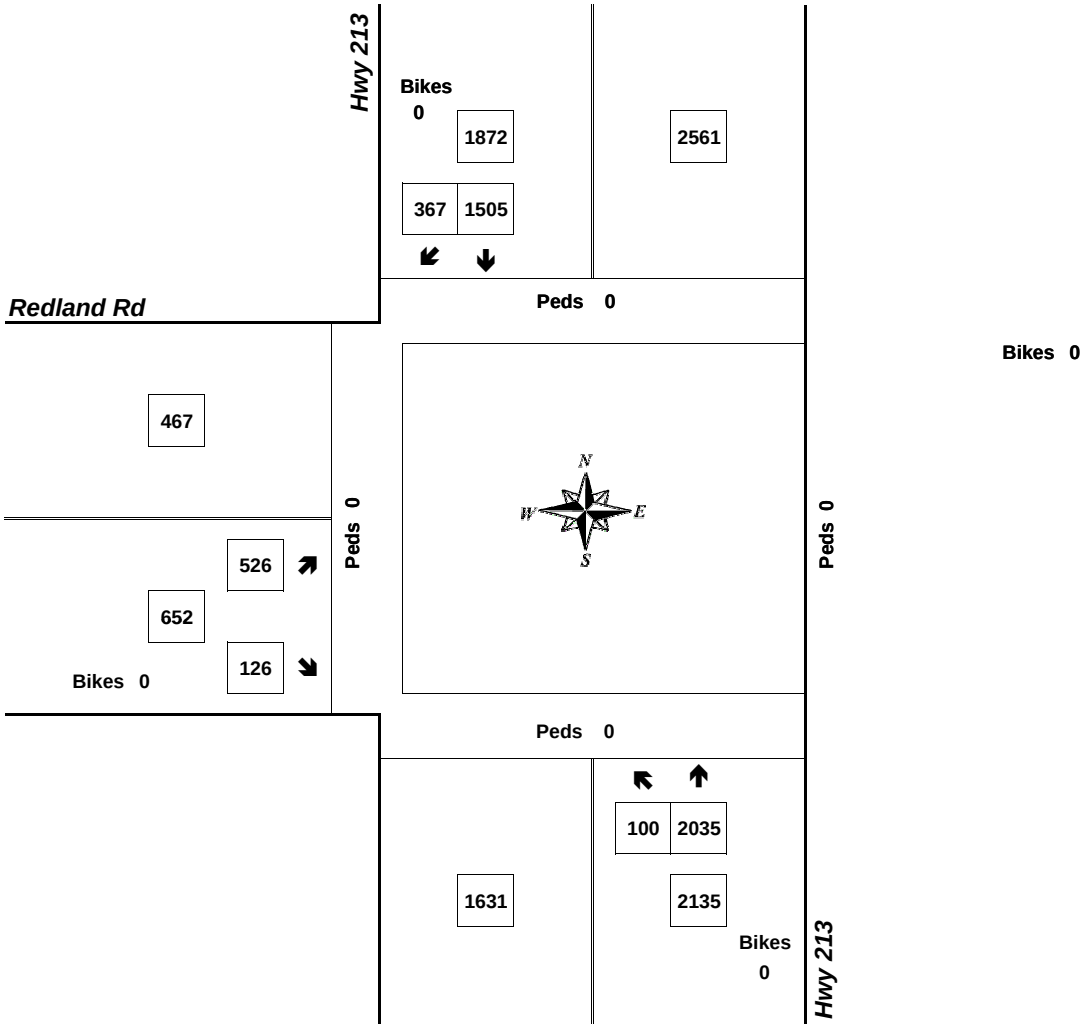
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
7:00 AM	6	83		89	62	12	74		27		6	33				0	196
7:15 AM	5	82		87	67	15	82		21		5	26				0	195
7:30 AM	3	78		81	74	18	92		21		6	27				0	200
7:45 AM	4	96		100	77	24	101		23		6	29				0	230
8:00 AM	3	82		85	91	24	115		19		6	25				0	225

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

Hwy 213 & Redland Rd

7:20 AM to 8:20 AM
Wednesday, January 25, 2017

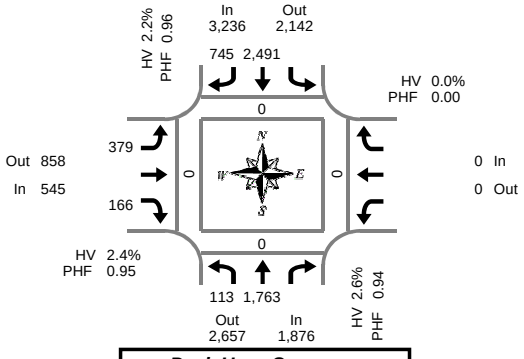


Approach	PHF	HV%	Volume
EB	0.85	3.4%	652
WB	0.00	0.0%	0
NB	0.93	4.0%	2,135
SB	0.92	4.3%	1,872
Intersection	0.96	4.1%	4,659

Count Period: 7:00 AM to 9:00 AM

Total Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:10 PM to 5:10 PM

Hwy 213 & Redland Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	11	148		0	204	67		0	26		6	0				0	462	0	0	0	0
4:05 PM	7	140		0	216	54		0	28		12	0				0	457	0	0	0	0
4:10 PM	9	160		0	187	58		0	42		15	0				0	471	0	0	0	0
4:15 PM	14	153		0	202	63		0	26		12	0				0	470	0	0	0	0
4:20 PM	11	151		0	207	65		0	32		13	0				0	479	0	0	0	0
4:25 PM	6	113		0	216	57		0	34		10	0				0	436	0	0	0	0
4:30 PM	14	128		0	194	60		0	34		15	0				0	445	0	0	0	0
4:35 PM	8	140		0	232	74		0	29		15	0				0	498	0	0	0	0
4:40 PM	3	157		0	228	51		0	30		9	0				0	478	0	0	0	0
4:45 PM	12	147		1	181	61		0	42		18	0				0	461	0	0	0	0
4:50 PM	8	144		0	221	71		0	24		10	0				0	478	0	0	0	0
4:55 PM	8	169		0	223	68		0	30		10	0				0	508	0	0	0	0
5:00 PM	15	148		0	178	54		0	31		20	0				0	446	0	0	0	0
5:05 PM	5	153		0	222	63		0	25		19	0				0	487	0	0	0	0
5:10 PM	11	144		0	226	46		0	32		11	0				0	470	0	0	0	0
5:15 PM	11	130		0	198	56		0	44		8	0				0	447	0	0	0	0
5:20 PM	17	148		0	194	44		0	28		4	0				0	435	0	0	0	0
5:25 PM	6	127		0	229	69		0	26		6	0				0	463	0	0	0	0
5:30 PM	6	114		0	205	58		0	25		17	0				0	425	0	0	0	0
5:35 PM	14	137		0	177	58		0	32		9	0				0	427	0	0	0	0
5:40 PM	8	134		0	217	63		0	21		4	0				0	447	0	0	0	0
5:45 PM	7	148		0	220	60		0	18		8	0				0	461	0	0	0	0
5:50 PM	8	129		0	177	62		0	32		6	0				0	414	0	0	0	0
5:55 PM	9	115		0	197	40		0	19		9	0				0	389	0	0	0	0
Total Survey	228	3,377		1	4,951	1,422		0	710		266	0				0	10,954	0	0	0	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	27	448		0	607	179		0	96		33	0				0	1,390	0	0	0	0
4:15 PM	31	417		0	625	185		0	92		35	0				0	1,385	0	0	0	0
4:30 PM	25	425		0	654	185		0	93		39	0				0	1,421	0	0	0	0
4:45 PM	28	460		1	625	200		0	96		38	0				0	1,447	0	0	0	0
5:00 PM	31	445		0	626	163		0	88		50	0				0	1,403	0	0	0	0
5:15 PM	34	405		0	621	169		0	98		18	0				0	1,345	0	0	0	0
5:30 PM	28	385		0	599	179		0	78		30	0				0	1,299	0	0	0	0
5:45 PM	24	392		0	594	162		0	69		23	0				0	1,264	0	0	0	0
Total Survey	228	3,377		1	4,951	1,422		0	710		266	0				0	10,954	0	0	0	0

Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total	Pedestrians Crosswalk			
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes		North	South	East	West
Volume	1,876	2,657	4,533	1	3,236	2,142	5,378	0	545	858	1,403	0	0	0	0	0	5,657	0	0	0	0
%HV	2.6%				2.2%				2.4%				0.0%				2.4%				
PHF	0.94				0.96				0.95				0.00				0.98				

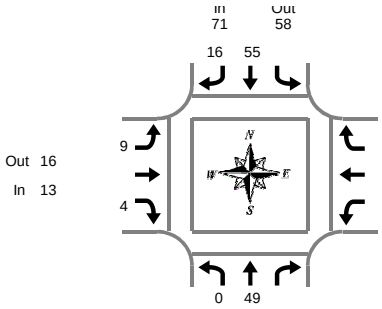
By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R		Total	L		R	Total				Total	
Volume	113	1,763		1,876	2,491	745		3,236	379		166	545				0	5,657
%HV	0.0%	2.8%	NA	2.6%	2.2%	2.1%		2.2%	2.4%	NA	2.4%	2.4%	NA	NA	NA	0.0%	2.4%
PHF	0.83	0.94		0.94	0.95	0.93		0.96	0.94		0.85	0.95				0.00	0.98

Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total	Pedestrians Crosswalk			
	L	T		Bikes	T	R		Bikes	L		R	Bikes				Bikes		North	South	East	West
4:00 PM	111	1,750		1	2,511	749		0	377		145	0				0	5,643	0	0	0	0
4:15 PM	115	1,747		1	2,530	733		0	369		162	0				0	5,656	0	0	0	0
4:30 PM	118	1,735		1	2,526	717		0	375		145	0				0	5,616	0	0	0	0
4:45 PM	121	1,695		1	2,471	711		0	360		136	0				0	5,494	0	0	0	0
5:00 PM	117	1,627		0	2,440	673		0	333		121	0				0	5,311	0	0	0	0

Heavy Vehicle Summary

Clay Carney
(503) 833-2740



Hwy 213 & Redland Rd

Tuesday, January 24, 2017
4:00 PM to 6:00 PM

Peak Hour Summary
4:10 PM to 5:10 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	0	4		4	4	3	7		1		0	1				0	12
4:05 PM	1	8		9	8	0	8		1		3	4				0	21
4:10 PM	0	7		7	5	0	5		1		1	2				0	14
4:15 PM	0	4		4	9	1	10		1		0	1				0	15
4:20 PM	0	5		5	8	1	9		0		0	0				0	14
4:25 PM	0	4		4	4	3	7		0		0	0				0	11
4:30 PM	0	4		4	2	1	3		2		0	2				0	9
4:35 PM	0	3		3	11	2	13		2		0	2				0	18
4:40 PM	0	6		6	0	1	1		0		1	1				0	8
4:45 PM	0	3		3	4	1	5		0		1	1				0	9
4:50 PM	0	2		2	4	4	8		0		0	0				0	10
4:55 PM	0	3		3	4	1	5		1		0	1				0	9
5:00 PM	0	4		4	2	1	3		1		0	1				0	8
5:05 PM	0	4		4	2	0	2		1		1	2				0	8
5:10 PM	0	4		4	4	1	5		0		0	0				0	9
5:15 PM	0	1		1	6	0	6		1		0	1				0	8
5:20 PM	1	3		4	3	0	3		1		0	1				0	8
5:25 PM	0	2		2	3	1	4		0		1	1				0	7
5:30 PM	0	2		2	3	2	5		1		0	1				0	8
5:35 PM	0	3		3	5	0	5		1		0	1				0	9
5:40 PM	0	3		3	2	1	3		0		0	0				0	6
5:45 PM	0	3		3	6	0	6		0		1	1				0	10
5:50 PM	0	1		1	5	1	6		2		0	2				0	9
5:55 PM	0	2		2	1	2	3		0		0	0				0	5
Total Survey	2	85		87	105	27	132		17		9	26				0	245

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	1	19		20	17	3	20		3		4	7				0	47
4:15 PM	0	13		13	21	5	26		1		0	1				0	40
4:30 PM	0	13		13	13	4	17		4		1	5				0	35
4:45 PM	0	8		8	12	6	18		1		1	2				0	28
5:00 PM	0	12		12	8	2	10		2		1	3				0	25
5:15 PM	1	6		7	12	1	13		2		1	3				0	23
5:30 PM	0	8		8	10	3	13		2		0	2				0	23
5:45 PM	0	6		6	12	3	15		2		1	3				0	24
Total Survey	2	85		87	105	27	132		17		9	26				0	245

Heavy Vehicle Peak Hour Summary
4:10 PM to 5:10 PM

By Approach	Northbound Hwy 213			Southbound Hwy 213			Eastbound Redland Rd			Westbound Redland Rd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	49	59	108	71	58	129	13	16	29	0	0	0	133
PHF	0.77			0.68			0.65			0.00			0.77

By Movement	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Total
	L	T		Total	T	R	Total		L		R	Total				Total	
Volume	0	49		49	55	16	71		9		4	13				0	133
PHF	0.00	0.77		0.77	0.63	0.67	0.68		0.56		0.50	0.65				0.00	0.77

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

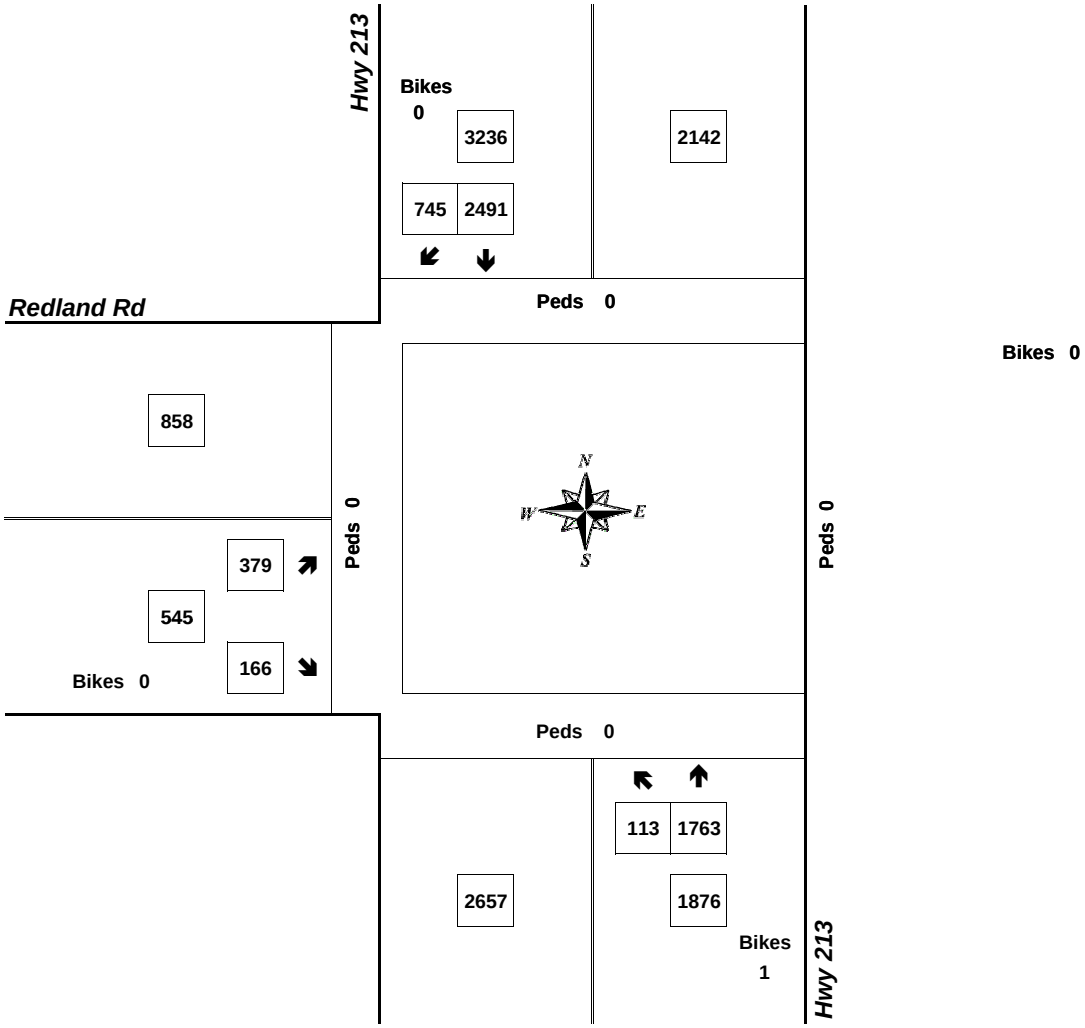
Interval Start Time	Northbound Hwy 213				Southbound Hwy 213				Eastbound Redland Rd				Westbound Redland Rd				Interval Total
	L	T		Total	T	R	Total		L		R	Total				Total	
4:00 PM	1	53		54	63	18	81		9		6	15				0	150
4:15 PM	0	46		46	54	17	71		8		3	11				0	128
4:30 PM	1	39		40	45	13	58		9		4	13				0	111
4:45 PM	1	34		35	42	12	54		7		3	10				0	99
5:00 PM	1	32		33	42	9	51		8		3	11				0	95

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

Hwy 213 & Redland Rd

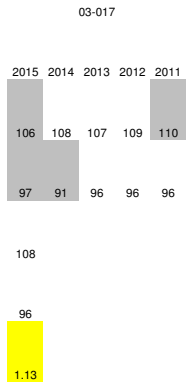
4:10 PM to 5:10 PM
Tuesday, January 24, 2017

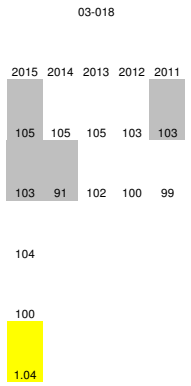


Approach	PHF	HV%	Volume
EB	0.95	2.4%	545
WB	0.00	0.0%	0
NB	0.94	2.6%	1,876
SB	0.96	2.2%	3,236
Intersection	0.98	2.4%	5,657

Count Period: 4:00 PM to 6:00 PM

ATR CHARACTERISTIC TABLE (Printed: 9/30/2016)										
2015 SEASONAL TRAFFIC TREND	AREA TYPE	# OF LANES	WEEKLY TRAFFIC TREND	2016 AADT	OHP CLASSIFICATION	2015 ATR	COUNTY	HIGHWAY ROUTE, NAME, & LOCATION	MP	STATE HWY NUMBER
COM	URBANIZED	4	WEEKDAY	112800	STATEWIDE HWY	34-010	WASHINGTON	US26, 0.73 MILE EAST OF 185TH AVENUE OVERCROSSING	65.02	47
COM	URBANIZED	4	WEEKDAY	46200	STATEWIDE HWY	09-009	DESCHUTES	US97, THE DALLES-CALIFORNIA HIGHWAY, 0.23 MILE SOUTH OF REVERE AVENUE	137.36	4
COM	URBANIZED	4	WEEKDAY	35600	STATEWIDE HWY	03-018	CLACKAMAS	OR224, CLACKAMAS HIGHWAY, 0.13 MILE WEST OF JOHNSON ROAD	3.60	171
COM	URBANIZED	4	WEEKDAY	34200	STATEWIDE HWY	03-017	CLACKAMAS	OR212, CLACKAMAS HIGHWAY, 0.14 MILE WEST OF S.E.130TH AVENUE	6.80	171
COM	URBANIZED	4	WEEKDAY	33900	STATEWIDE HWY	34-009	WASHINGTON	OR8, TUALATIN VALLEY HIGHWAY, 0.28 MILE WEST OF N.W. 334TH AVENUE	14.84	29
COM	URBANIZED	4	WEEKDAY	32100	STATEWIDE HWY	26-003	MULTNOMAH	US26, MT. HOOD HIGHWAY, 0.18 MILE SOUTHEAST OF S.E. POWELL VALLEY ROAD	14.36	26
COM	URBANIZED	4	WEEKDAY	27000	STATEWIDE HWY	20-028	LANE	OR569, BELTLINE HIGHWAY, 0.42 MILE SOUTH OF BARGER DRIVE INTERCHANGE	5.20	69
SUM	URBANIZED	4	WEEKDAY	24300	STATEWIDE HWY	09-003	DESCHUTES	US97, THE DALLES-CALIFORNIA HIGHWAY, 0.17 MILE SOUTH OF CHINA HAT ROAD	142.41	4
COM	URBANIZED	4	WEEKDAY	24100	STATEWIDE HWY	30-008	UMATILLA	US395, PENDLETON-JOHN DAY HIGHWAY, 0.09 MILE SOUTH OF OLD OREGON TRAIL	1.77	28





2016 Count Data - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00														
1:00														
2:00														
3:00														
4:00														
5:00	48	108	155	12	74	452	9	720	18	150	45	4	1,795	16
6:00	168	338	422	39	239	818	17	1,071	58	294	136	7	3,607	12
7:00	423	538	552	99	425	791	21	1,006	97	286	367	14	4,619	5
8:00	350	604	512	100	363	601	42	802	106	312	227	27	4,046	10
9:00	271	541	388	82	347	444	43	706	79	378	277	39	3,595	13
10:00	371	650	567	96	362	402	38	576	80	462	369	46	4,019	11
11:00	306	589	550	107	384	431	58	659	107	472	391	71	4,125	9
12:00	412	739	591	117	383	408	72	717	116	489	474	83	4,601	6
13:00	366	567	615	122	395	404	52	617	124	474	453	64	4,253	8
14:00	528	903	602	97	374	440	34	791	101	510	525	67	4,972	4
15:00	602	968	662	133	446	524	83	777	135	624	579	90	5,623	3
16:00	790	1,124	713	130	448	405	50	680	166	594	676	81	5,857	2
17:00	915	1,126	627	120	441	456	43	685	165	643	729	76	6,026	1
18:00	590	749	418	103	334	376	23	535	119	481	552	55	4,335	7
19:00	353	467	277	93	220	283	15	360	93	282	370	47	2,860	14
20:00	298	425	191	53	131	255	7	285	47	155	211	31	2,089	15
21:00														
22:00														
23:00														
Total												AADT	68,477	
												Major	46,624	
												Minor	21,854	

2016 Count Data - Seasonally Adjusted - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00														
1:00														
2:00														
3:00														
4:00														
5:00	52	117	168	13	80	490	10	781	20	163	49	4	1,948	16
6:00	182	367	458	42	259	888	18	1,162	63	319	148	8	3,914	12
7:00	459	584	599	107	461	858	23	1,092	105	310	398	15	5,012	5
8:00	380	655	556	109	394	652	46	870	115	339	246	29	4,390	10
9:00	294	587	421	89	376	482	47	766	86	410	301	42	3,901	13
10:00	403	705	615	104	393	436	41	625	87	501	400	50	4,361	11
11:00	332	639	597	116	417	468	63	715	116	512	424	77	4,476	9
12:00	447	802	641	127	416	443	78	778	126	531	514	90	4,992	6
13:00	397	615	667	132	429	438	56	669	135	514	492	69	4,615	8
14:00	573	980	653	105	406	477	37	858	110	553	570	73	5,395	4
15:00	653	1,050	718	144	484	569	90	843	146	677	628	98	6,101	3
16:00	857	1,220	774	141	486	439	54	738	180	644	733	88	6,355	2
17:00	993	1,222	680	130	478	495	47	743	179	698	791	82	6,538	1
18:00	640	813	454	112	362	408	25	580	129	522	599	60	4,703	7
19:00	383	507	301	101	239	307	16	391	101	306	401	51	3,103	14
20:00	323	461	207	58	142	277	8	309	51	168	229	34	2,267	15
21:00														
22:00														
23:00														
Total												AADT	74,298	
												Major	50,587	
												Minor	23,711	

2015 Base Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	96	211	28	3	9	47		100	4	59	14		571	
1:00	70	159	15	2	6	23		50	3	40	11		379	
2:00	71	165	16	2	5	24		49	2	42	10		386	
3:00	45	95	54	3	16	99		203	2	31	7		555	
4:00	70	138	105	7	28	186		422	6	41	14		1,017	
5:00	180	346	245	18	79	454		941	15	100	39		2,417	16
6:00	344	502	435	43	171	757		1,325	38	132	96		3,843	8
7:00	551	599	491	46	196	781		1,305	46	178	216		4,409	3
8:00	607	624	466	41	187	674		1,134	38	217	214		4,202	5
9:00	607	596	354	32	176	625		977	25	244	190		3,826	9
10:00	619	621	314	27	118	504		859	24	277	188		3,551	12
11:00	475	715	328	28	112	473		814	27	345	119		3,436	13
12:00	555	778	349	29	137	524		790	26	375	141		3,704	10
13:00	475	800	356	32	136	516		827	28	362	105		3,637	11
14:00	583	918	311	35	166	568		823	34	392	175		4,005	6
15:00	635	997	299	40	185	583		834	42	429	215		4,259	4
16:00	709	1,072	271	45	184	578		833	45	465	250		4,452	2
17:00	783	1,119	229	47	203	625		780	46	448	239		4,519	1
18:00	610	1,008	255	38	142	504		815	37	366	173		3,948	7
19:00	483	779	171	23	116	418		520	25	252	111		2,898	14
20:00	412	703	109	17	121	392		358	20	194	103		2,429	15
21:00	335	661	87	14	123	380		259	17	178	73		2,127	
22:00	237	478	68	10	31	119		222	12	130	47		1,354	
23:00	182	398	41	6	16	72		142	7	102	31		997	
Total	9,734	14,482	5,397	588	2,663	9,926	0	15,382	569	5,399	2,781	0	66,921	
		29,613			13,177			15,951			8,180			
								68%			32%			

2040 Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	123	234	32	4	24	107		125	5	69	28		751	
1:00	85	177	17	3	16	61		66	4	47	20		496	
2:00	86	183	19	3	16	67		66	4	50	18		512	
3:00	106	118	64	4	30	130		225	3	35	22		737	
4:00	185	176	123	10	49	224		463	8	46	43		1,327	
5:00	435	415	284	27	141	572		1,092	21	112	110		3,209	15
6:00	779	581	507	52	344	1,005		1,477	46	169	251		5,211	7
7:00	1,052	694	585	59	384	1,099		1,431	43	193	397		5,937	2
8:00	1,036	714	513	54	320	982		1,273	45	256	410		5,603	5
9:00	883	684	407	44	301	892		1,064	37	319	373		5,004	9
10:00	863	705	367	40	257	790		921	34	322	366		4,665	12
11:00	709	807	372	41	255	763		922	39	391	272		4,571	13
12:00	835	844	392	45	302	853		903	38	431	297		4,940	10
13:00	801	879	396	61	324	818		942	41	413	258		4,933	11
14:00	929	969	377	67	355	905		926	49	429	303		5,309	6
15:00	933	1,138	311	66	369	985		932	64	463	347		5,608	4
16:00	961	1,248	293	55	369	1,055		927	67	501	410		5,886	3
17:00	1,000	1,321	276	49	360	1,077		881	63	512	424		5,963	1
18:00	834	1,108	283	59	304	821		923	52	407	282		5,073	8
19:00	636	852	196	33	246	654		621	36	292	219		3,785	14
20:00	521	780	122	24	231	590		432	29	223	182		3,134	16
21:00	417	724	99	19	195	576		320	25	206	130		2,711	
22:00	306	541	78	14	70	237		270	17	150	87		1,770	
23:00	223	438	46	9	43	175		179	11	119	55		1,298	
Total	14,738	16,330	6,159	842	5,305	15,438	0	17,381	781	6,155	5,304	0	88,433	
		37,227			21,585			18,162			11,459			
								63%			37%			

2040 Post-Processed - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	208	161	200	20	139	608	13	913	26	178	123	6	2,596	16	32%
6:00	496	432	529	51	463	1,144	25	1,299	73	379	329	10	5,231	12	65%
7:00	893	673	699	128	756	1,176	31	1,202	101	330	640	20	6,649	5	83%
8:00	711	744	605	131	588	940	61	988	122	386	445	39	5,760	9	72%
9:00	490	671	476	111	561	707	61	840	97	506	522	55	5,097	13	63%
10:00	595	791	690	117	526	690	54	676	96	562	661	66	5,524	11	69%
11:00	521	722	656	129	554	741	84	812	128	567	571	102	5,587	10	69%
12:00	688	866	700	142	724	731	104	885	137	595	664	120	6,356	6	79%
13:00	681	682	722	160	788	704	77	769	147	573	638	94	6,036	7	75%
14:00	898	1,030	751	165	709	772	49	959	124	596	693	96	6,842	4	85%
15:00	941	1,189	738	169	794	945	119	937	168	719	872	129	7,720	3	96%
16:00	1,122	1,400	814	151	800	837	72	823	201	686	1,030	116	8,051	2	100%
17:00	1,228	1,424	769	134	726	879	62	838	195	776	969	109	8,108	1	101%
18:00	859	899	491	151	630	680	32	669	144	570	704	77	5,905	8	73%
19:00	514	564	334	111	424	502	21	475	111	348	505	67	3,976	14	49%
20:00	416	522	225	64	255	437	10	375	66	194	349	43	2,957	15	37%
21:00															
22:00															
23:00															
Total												AADT	92,134		
												Major	57,707		
												Minor	34,427		

2040 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	273	212	262	20	139	493	13	741	26	144	123	6	2,453	16	30%
6:00	566	493	603	51	463	1,005	25	1,140	73	333	329	10	5,092	13	62%
7:00	914	690	716	128	756	1,177	31	1,203	101	330	640	20	6,705	5	82%
8:00	743	777	632	131	588	959	61	1,007	122	394	445	39	5,898	9	72%
9:00	542	742	527	111	561	720	61	856	97	515	522	55	5,309	12	65%
10:00	606	806	703	117	526	758	54	743	96	617	661	66	5,753	11	70%
11:00	559	775	704	129	554	779	84	853	128	595	571	102	5,832	10	71%
12:00	737	929	750	142	724	754	104	913	137	614	664	120	6,589	6	80%
13:00	756	757	802	160	788	686	77	749	147	559	638	94	6,214	7	76%
14:00	933	1,070	779	165	709	751	49	933	124	580	693	96	6,881	4	84%
15:00	1,004	1,269	788	169	794	923	119	916	168	703	872	129	7,855	3	96%
16:00	1,132	1,412	821	151	800	880	72	865	201	721	1,030	116	8,201	1	100%
17:00	1,202	1,394	753	134	726	872	62	831	195	770	969	109	8,017	2	98%
18:00	885	927	506	151	630	657	32	646	144	550	704	77	5,908	8	72%
19:00	550	604	357	111	424	479	21	453	111	332	505	67	4,014	14	49%
20:00	422	529	228	64	255	413	10	354	66	183	349	43	2,916	15	36%
21:00															
22:00															
23:00															
Total												AADT	93,196		
												Major	58,372		
												Minor	34,824		

2035 - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	176	152	193	19	127	583	12	886	25	175	107	6	2,461	16	32%
6:00	431	419	514	49	421	1,091	24	1,270	71	367	292	9	4,957	12	64%
7:00	802	655	678	124	694	1,110	29	1,179	101	326	590	19	6,308	5	81%
8:00	642	725	595	126	548	880	58	963	120	376	403	37	5,475	9	70%
9:00	449	653	465	106	523	660	58	825	95	486	476	52	4,848	13	62%
10:00	555	773	675	114	498	637	51	666	94	549	607	63	5,282	11	68%
11:00	482	705	644	126	525	684	80	792	125	555	541	97	5,356	10	69%
12:00	637	853	687	139	660	671	99	863	135	582	633	114	6,072	6	78%
13:00	622	668	711	154	713	648	73	748	144	561	608	89	5,740	7	74%
14:00	831	1,020	730	153	646	711	46	938	121	587	667	91	6,540	4	84%
15:00	881	1,160	734	164	730	866	113	918	163	710	821	122	7,383	3	95%
16:00	1,067	1,362	806	149	735	754	68	805	197	677	968	110	7,698	2	99%
17:00	1,179	1,382	751	133	675	799	59	818	192	760	932	103	7,781	1	100%
18:00	813	881	483	143	574	624	31	651	141	560	682	73	5,654	8	73%
19:00	487	552	327	109	385	461	20	458	109	340	484	64	3,794	14	49%
20:00	397	509	222	63	231	404	9	361	63	189	324	41	2,813	15	36%
21:00															
22:00															
23:00															
Total												AADT	88,418		
												Major	55,380		
												Minor	33,038		

2035 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	234	203	257	19	127	473	12	719	25	142	107	6	2,324	16	30%
6:00	492	478	586	49	421	958	24	1,115	71	322	292	9	4,817	13	61%
7:00	819	668	692	124	694	1,112	29	1,181	101	326	590	19	6,356	5	81%
8:00	668	755	619	126	548	899	58	984	120	384	403	37	5,602	9	71%
9:00	494	718	511	106	523	673	58	841	95	496	476	52	5,043	12	64%
10:00	561	782	682	114	498	702	51	734	94	606	607	63	5,495	11	70%
11:00	514	753	687	126	525	723	80	837	125	587	541	97	5,594	10	71%
12:00	681	910	734	139	660	693	99	892	135	601	633	114	6,290	6	80%
13:00	691	743	790	154	713	629	73	725	144	544	608	89	5,904	7	75%
14:00	864	1,061	760	153	646	688	46	908	121	569	667	91	6,574	4	84%
15:00	940	1,238	783	164	730	844	113	894	163	692	821	122	7,505	3	96%
16:00	1,075	1,372	812	149	735	793	68	846	197	712	968	110	7,837	1	100%
17:00	1,153	1,352	735	133	675	791	59	810	192	753	932	103	7,687	2	98%
18:00	837	907	497	143	574	600	31	626	141	538	682	73	5,648	8	72%
19:00	519	589	348	109	385	439	20	436	109	323	484	64	3,824	14	49%
20:00	400	514	223	63	231	380	9	340	63	178	324	41	2,766	15	35%
21:00															
22:00															
23:00															
Total												AADT	89,057		
												Major	55,780		
												Minor	33,277		

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total
0:00													
1:00													
2:00													
3:00													
4:00													
5:00													
6:00													
7:00		1,400	336				92	2,033		554		150	4,565
8:00		1,450	326				86	1,743		542		103	4,250
9:00													
10:00													
11:00													
12:00													
13:00													
14:00													
15:00													
16:00		2,511	749				111	1,750		377		145	5,643
17:00		2,440	673				117	1,627		333		121	5,311
18:00													
19:00													
20:00													
21:00													
22:00													
23:00													
Total												AADT	64,125
												Major	57,229
												Minor	6,896

2017 Count Data - Seasonally Adjusted - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	
0:00														
1:00														
2:00														
3:00														
4:00														
5:00														
6:00														
7:00		1,519	365				100	2,206		601		163	4,953	3
8:00		1,573	354				93	1,891		588		112	4,611	4
9:00														
10:00														
11:00														
12:00														
13:00														
14:00														
15:00														
16:00		2,724	813				120	1,899		409		157	6,123	1
17:00		2,647	730				127	1,765		361		131	5,762	2
18:00														
19:00														
20:00														
21:00														
22:00														
23:00														
Total												AADT	69,576	
												Major	62,094	
												Minor	7,482	

2015 Base Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		324	77				13	193		48		12	667	
1:00		234	56				8	105		27		9	439	
2:00		244	55				8	106		28		8	449	
3:00		190	39				20	313		62		5	629	
4:00		304	63				45	604		127		9	1,152	
5:00		748	162				97	1,399		222		22	2,650	15
6:00		1,199	259				125	2,088		618		82	4,371	6
7:00		1,579	212				154	2,110		674		62	4,791	3
8:00		1,651	195				150	1,875		623		46	4,540	5
9:00		1,499	210				102	1,745		356		58	3,970	10
10:00		1,494	207				103	1,536		299		60	3,699	13
11:00		1,465	271				114	1,519		312		54	3,735	12
12:00		1,612	265				122	1,567		308		70	3,944	11
13:00		1,568	313				120	1,585		329		64	3,979	9
14:00		1,746	356				97	1,687		332		65	4,283	7
15:00		1,850	462				152	1,694		415		81	4,654	4
16:00		1,972	472				171	1,704		443		81	4,843	2
17:00		2,050	493				168	1,685		411		80	4,887	1
18:00		1,798	371				108	1,576		352		74	4,279	8
19:00		1,382	307				119	1,072		221		51	3,152	14
20:00		1,180	309				93	851		157		44	2,634	16
21:00		1,034	279				81	736		131		49	2,310	
22:00		749	195				40	431		111		34	1,560	
23:00		598	146				22	294		77		23	1,160	
Total	0	28,470	5,774	0	0	0	2,232	28,475	0	6,683	0	1,143	72,777	
		34,244			0			30,707			7,826			
								89%			11%			

2040 Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		369	91				22	279		66		20	847	
1:00		264	67				13	161		39		15	559	
2:00		273	66				14	170		41		14	578	
3:00		278	48				31	359		80		10	806	
4:00		468	81				68	665		164		17	1,463	
5:00		1,091	199				121	1,655		332		44	3,442	15
6:00		1,723	176				204	2,447		560		144	5,254	7
7:00		2,138	202				268	2,455		597		193	5,853	3
8:00		2,108	211				280	2,232		601		156	5,588	5
9:00		1,832	233				220	2,056		491		142	4,974	10
10:00		1,806	207				240	1,793		400		130	4,576	13
11:00		1,753	305				240	1,836		394		135	4,663	12
12:00		1,917	311				258	1,929		387		154	4,956	11
13:00		1,924	364				265	1,908		400		152	5,013	9
14:00		2,063	392				290	1,970		437		212	5,364	6
15:00		2,125	455				259	2,121		430		256	5,646	4
16:00		2,244	482				253	2,231		431		258	5,899	2
17:00		2,374	493				255	2,215		421		223	5,981	1
18:00		2,054	437				257	1,893		421		172	5,234	8
19:00		1,576	311				172	1,395		228		108	3,790	14
20:00		1,330	301				131	1,114		162		93	3,131	16
21:00		1,157	319				111	992		138		83	2,800	
22:00		866	232				63	594		139		58	1,952	
23:00		668	173				35	439		102		39	1,456	
Total	0	34,401	6,156	0	0	0	4,070	34,909	0	7,461	0	2,828	89,825	
		40,557			0			38,979			10,289			
								89%			11%			

2040 Post-Processed - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total		
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		787	137				72	987		208		140	2,332		32%
6:00		1,587	277				145	1,989		420		282	4,700		65%
7:00		2,017	352				184	2,528		534		358	5,973	3	83%
8:00		1,979	374				188	2,219		568		266	5,594	4	72%
9:00		1,752	331				166	1,963		503		235	4,950		63%
10:00		1,898	359				180	2,128		545		255	5,365		69%
11:00		1,920	363				182	2,152		551		258	5,426		69%
12:00		2,284	532				176	2,173		471		294	5,931		79%
13:00		2,265	619				138	1,803		299		280	5,402		75%
14:00		2,567	701				156	2,043		339		317	6,123		85%
15:00		2,896	791				176	2,306		382		358	6,909		96%
16:00		3,021	825				184	2,405		398		373	7,206	1	100%
17:00		2,987	730				196	2,258		370		292	6,832	2	101%
18:00		2,175	532				143	1,645		269		212	4,976		73%
19:00		1,465	358				96	1,108		181		143	3,351		49%
20:00		1,089	266				71	824		135		106	2,492		37%
21:00															
22:00															
23:00															
Total												AADT	81,886		
												Major	72,507		
												Minor	9,380		

2040 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	From Beavercreek
0:00															
1:00															
2:00															
3:00															
4:00															
5:00		634	138				94	1,284		214		113	2,478	16	32%
6:00		1,411	279				168	2,310		431		251	4,851	12	65%
7:00		1,970	355				184	2,526		548		350	5,933	5	83%
8:00		1,897	370				184	2,176		573		255	5,455	7	72%
9:00		1,597	327				163	1,928		507		214	4,827	13	63%
10:00		1,865	355				165	1,953		549		250	5,137	10	69%
11:00		1,797	359				174	2,053		555		241	5,179	9	69%
12:00		2,141	529				171	2,110		474		275	5,700	6	79%
13:00		2,060	617				141	1,853		300		255	5,226	8	75%
14:00		2,476	699				161	2,103		341		306	6,085	4	85%
15:00		2,724	789				180	2,362		384		337	6,764	3	96%
16:00		2,995	822				175	2,291		401		370	7,054	1	100%
17:00		3,051	730				198	2,275		368		298	6,920	2	101%
18:00		2,112	532				148	1,705		268		206	4,971	11	73%
19:00		1,377	358				101	1,163		181		134	3,314	14	49%
20:00		1,074	266				76	874		134		105	2,530	15	37%
21:00															
22:00															
23:00															
Total															

AADT	78,639
Major	69,632
Minor	9,008

2035 - OR213/Redland Road

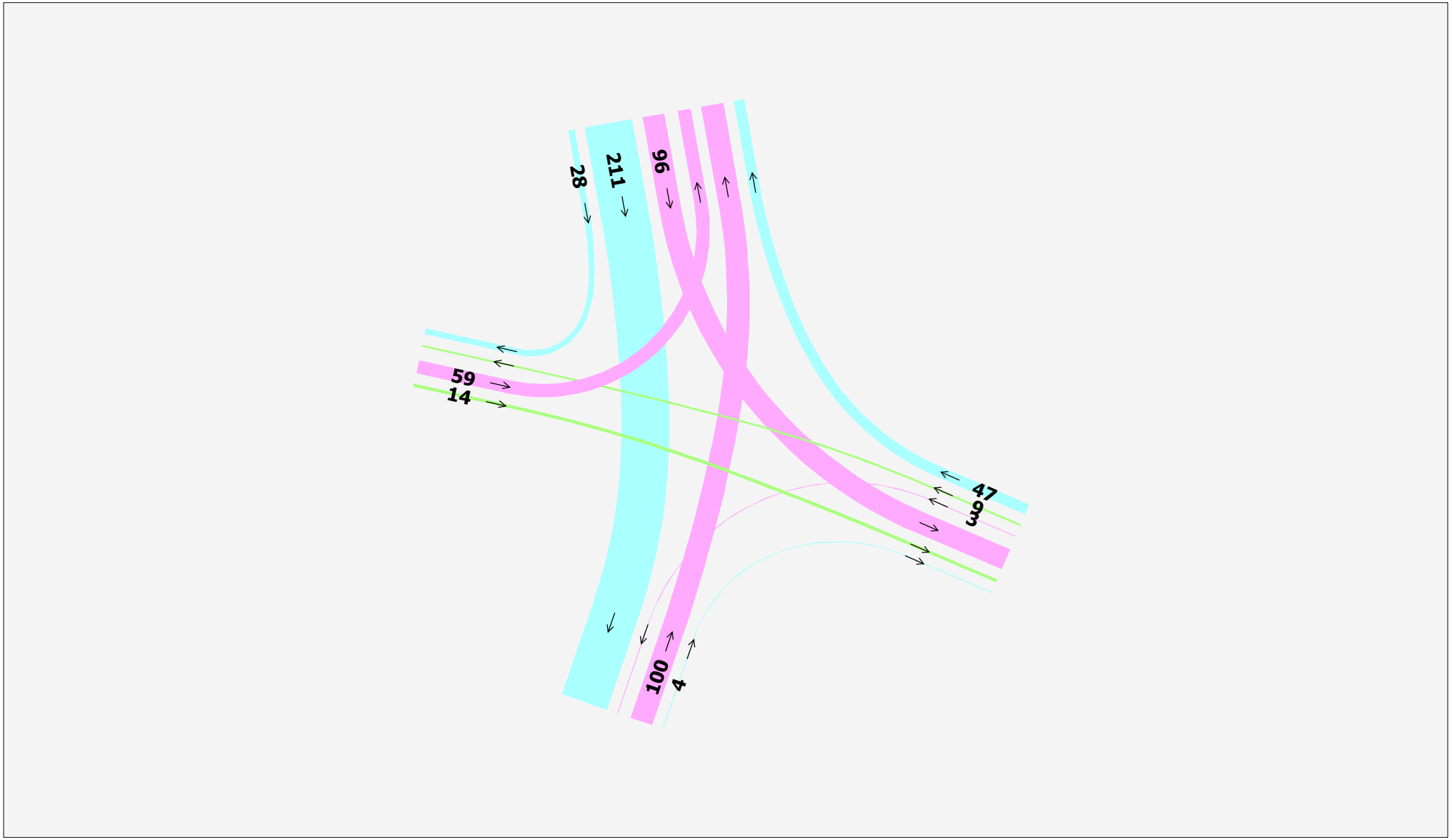
Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	From Beavercreek
0:00															
1:00															
2:00															
3:00															
4:00															
5:00		745	138				65	959		214		123	2,244	16	32%
6:00		1,500	279				130	1,932		431		248	4,520	13	64%
7:00		1,909	355				166	2,458		548		316	5,752	5	81%
8:00		1,891	370				167	2,147		573		232	5,380	7	70%
9:00		1,675	328				148	1,902		507		206	4,765	12	62%
10:00		1,824	357				161	2,072		552		224	5,191	10	68%
11:00		1,850	362				164	2,101		560		227	5,264	8	69%
12:00		2,215	529				160	2,096		476		257	5,733	6	78%
13:00		2,204	613				127	1,711		299		243	5,198	9	74%
14:00		2,512	699				144	1,950		340		277	5,922	4	84%
15:00		2,835	789				163	2,201		384		313	6,685	2	95%
16:00		2,956	822				170	2,295		401		326	6,970	1	99%
17:00		2,913	730				181	2,151		368		257	6,600	3	100%
18:00		2,117	531				132	1,563		267		187	4,796	11	73%
19:00		1,420	356				88	1,049		179		125	3,218	14	49%
20:00		1,053	264				65	778		133		93	2,386	15	36%
21:00															
22:00															
23:00															
Total												AADT	74,998		
												Major	66,407		
												Minor	8,591		

2035 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		595	138				84	1,250		214		99	2,380	16	32%
6:00		1,335	279				151	2,244		431		221	4,661	12	64%
7:00		1,870	355				166	2,453		548		309	5,701	5	81%
8:00		1,819	370				164	2,103		573		223	5,252	7	70%
9:00		1,535	328				145	1,865		507		188	4,650	13	62%
10:00		1,804	357				148	1,894		552		221	4,976	10	68%
11:00		1,740	362				155	1,992		560		214	5,023	9	69%
12:00		2,085	529				155	2,030		476		242	5,517	6	78%
13:00		2,003	613				131	1,767		299		221	5,034	8	74%
14:00		2,418	699				149	2,017		340		267	5,890	4	84%
15:00		2,667	789				168	2,261		384		294	6,553	3	95%
16:00		2,935	822				162	2,189		401		324	6,833	1	99%
17:00		2,978	730				183	2,171		368		262	6,692	2	100%
18:00		2,060	531				137	1,627		267		181	4,803	11	73%
19:00		1,338	356				93	1,105		179		118	3,190	14	49%
20:00		1,045	264				70	828		133		92	2,432	15	36%
21:00															
22:00															
23:00															
Total															

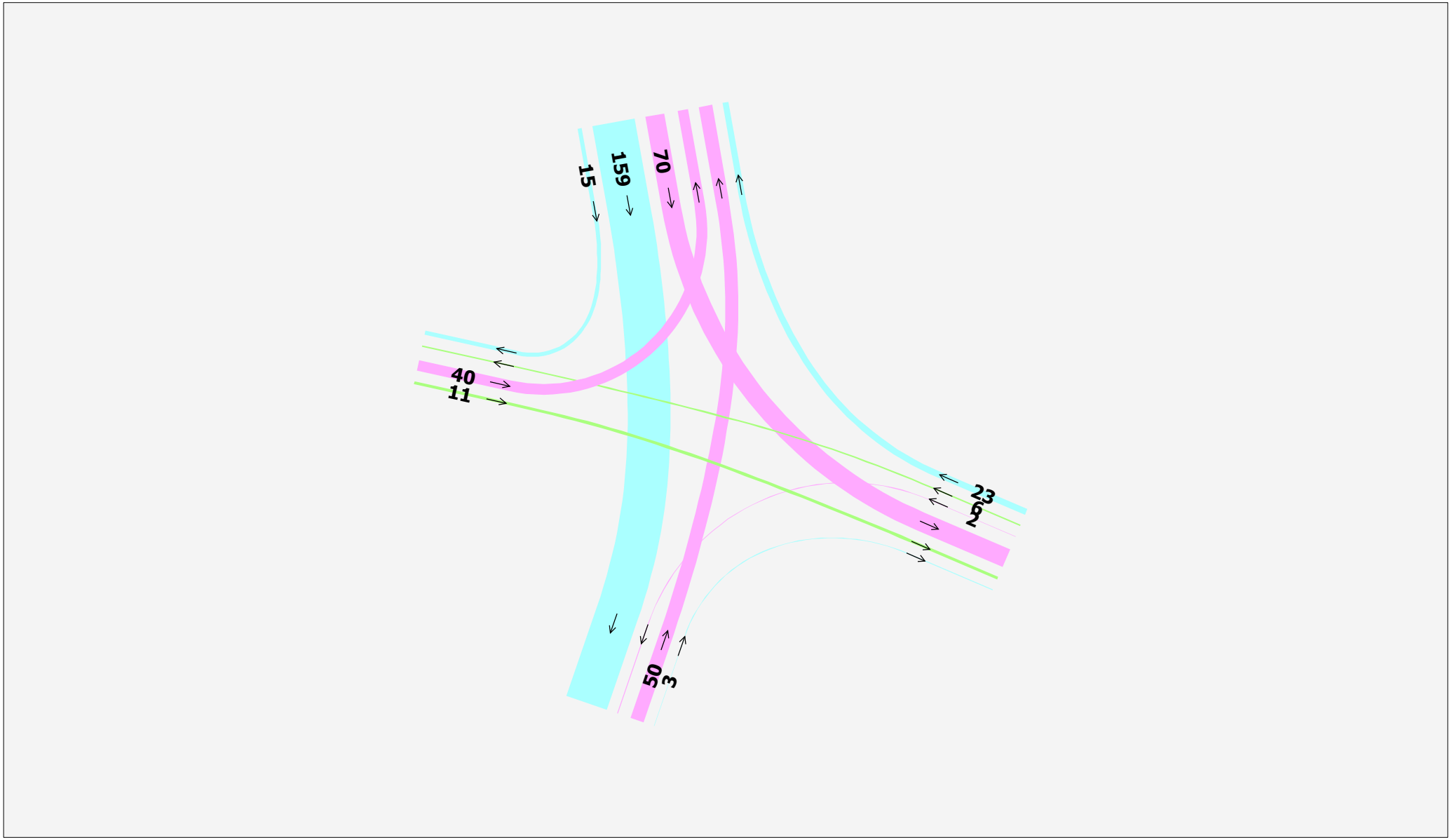
AADT	76,049
Major	67,338
Minor	8,711

2015



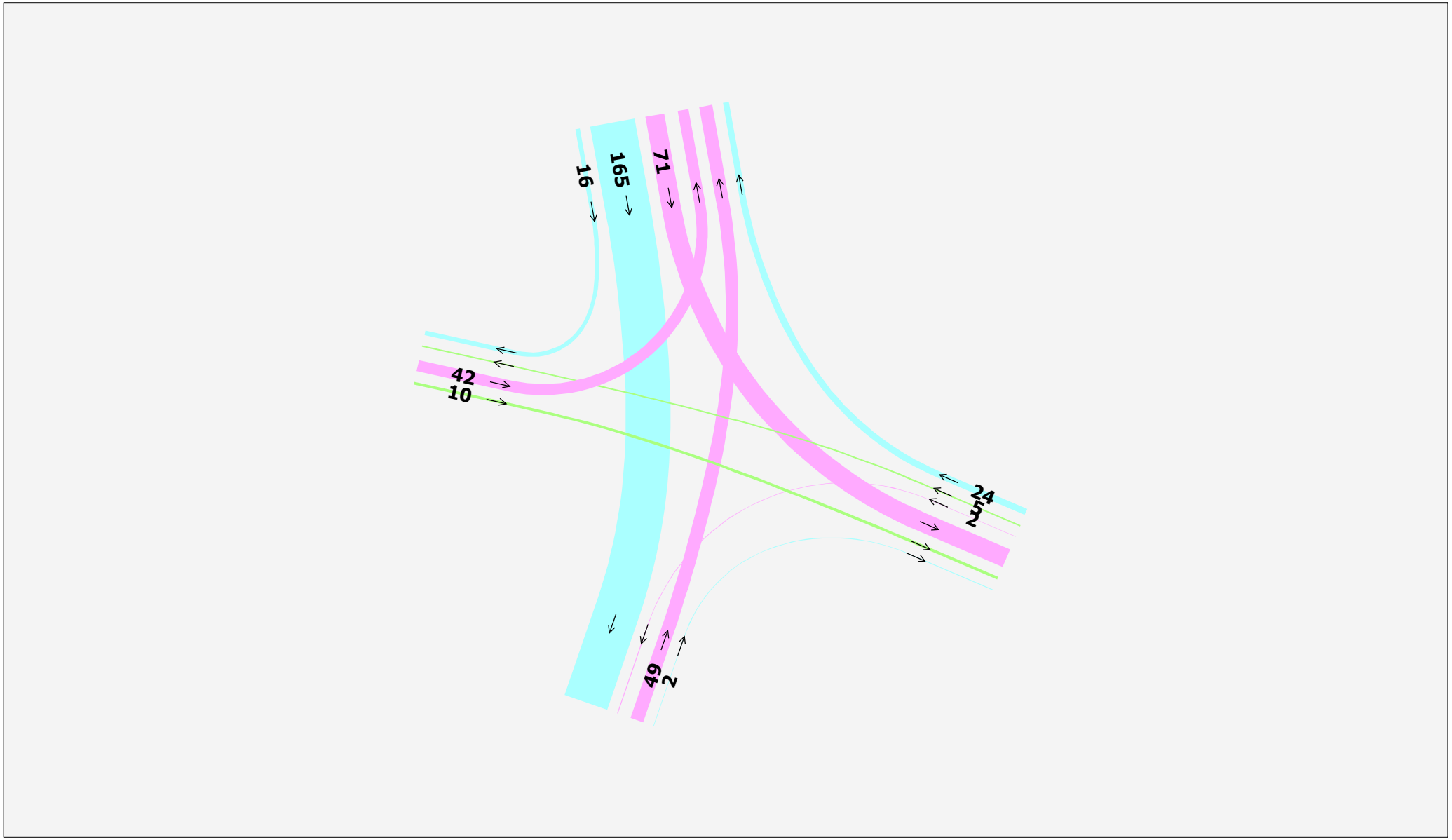
Beavercreek 0:00

2015



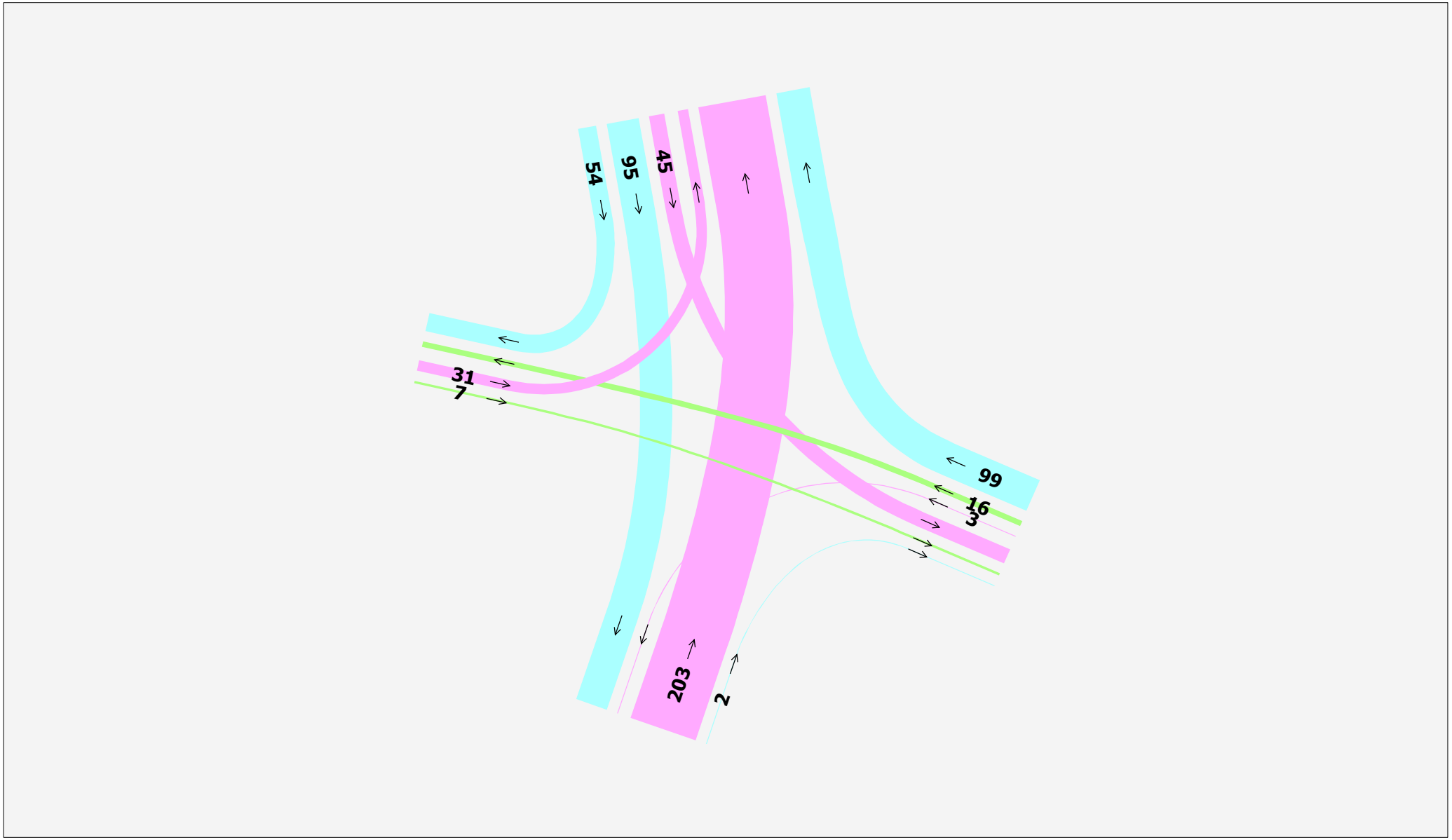
Beavercreek 1:00

2015



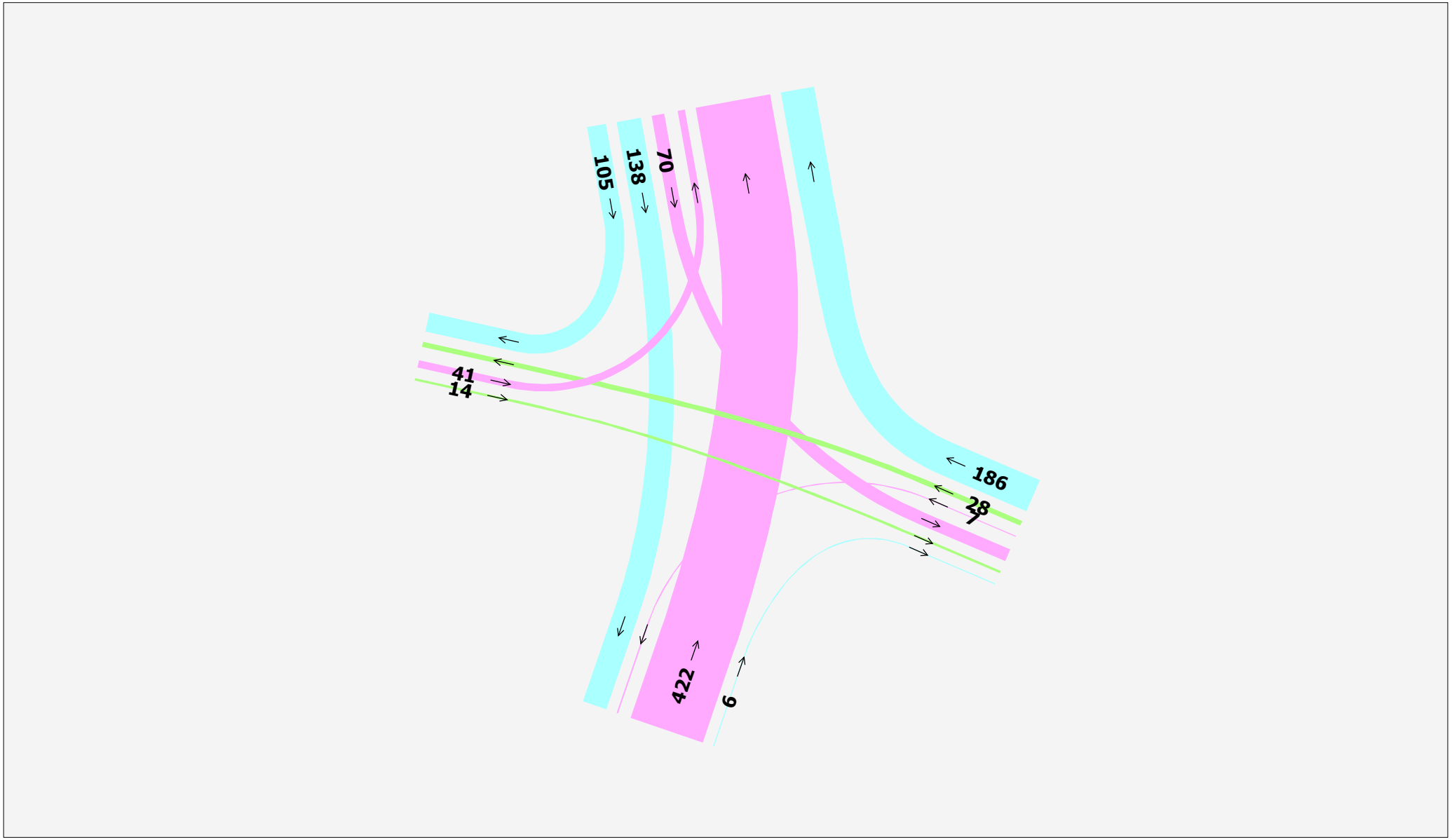
Beavercreek 2:00

2015



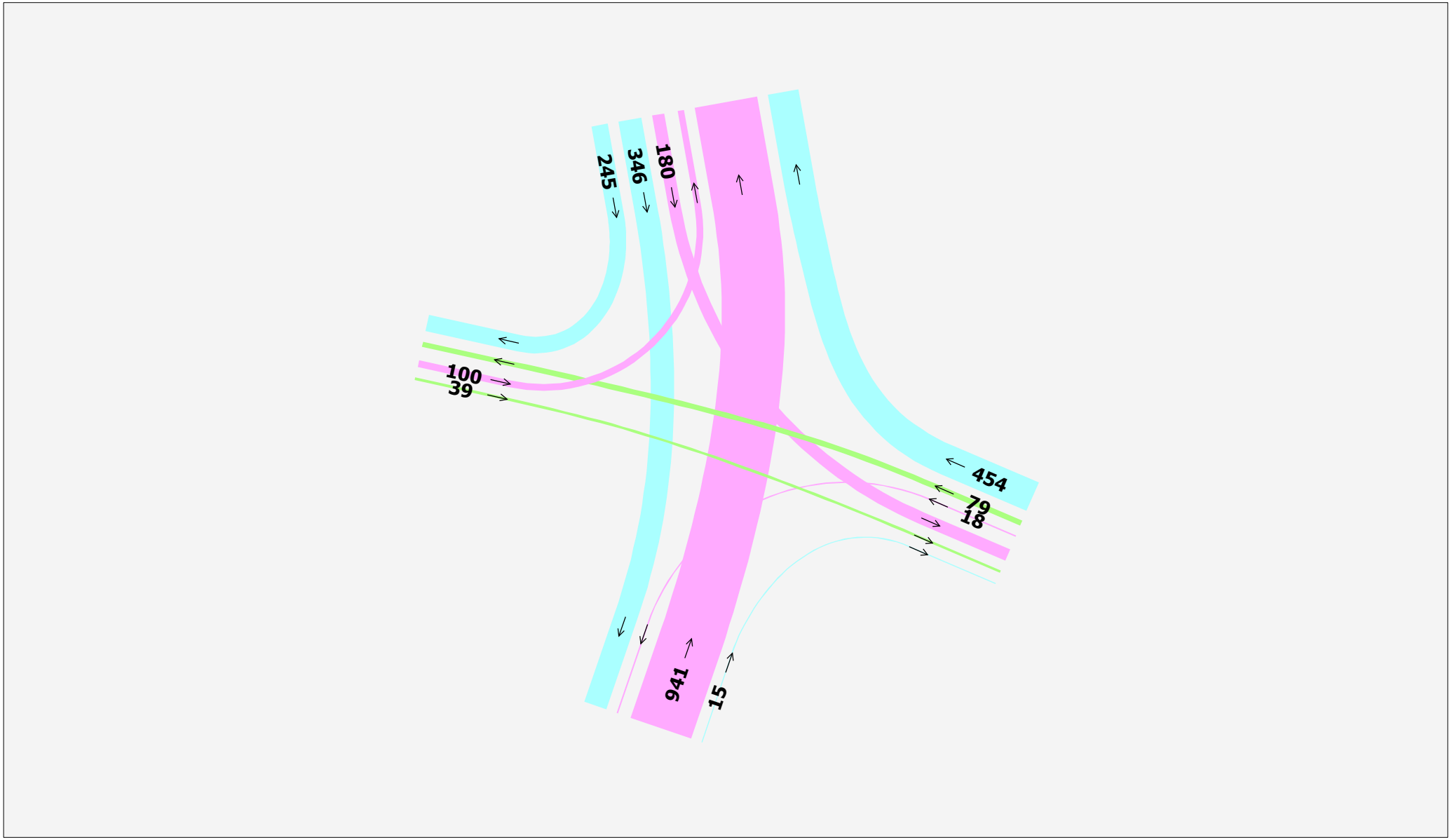
Beavercreek 3:00

2015



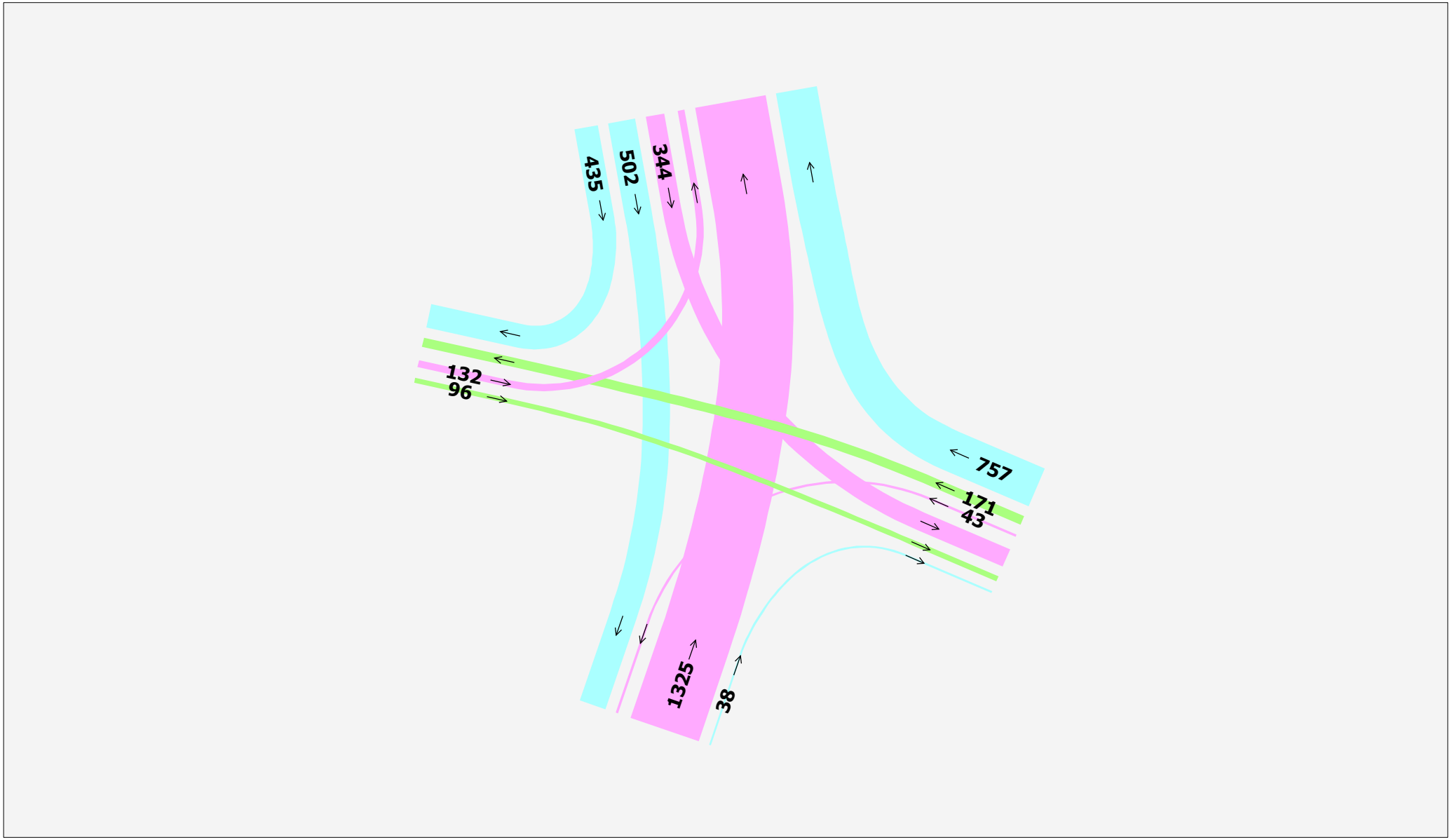
Beavercreek 4:00

2015



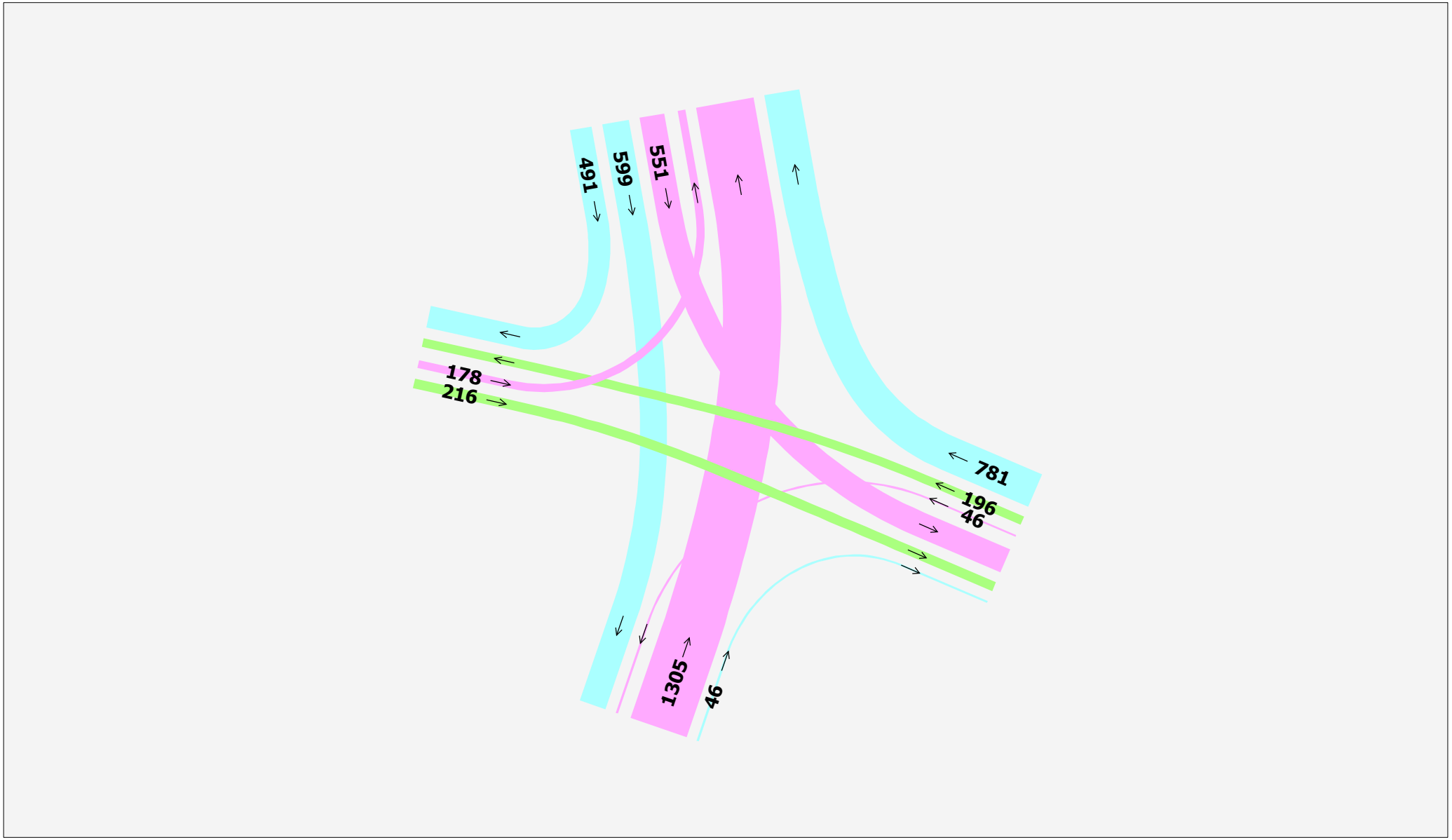
Beavercreek 5:00

2015



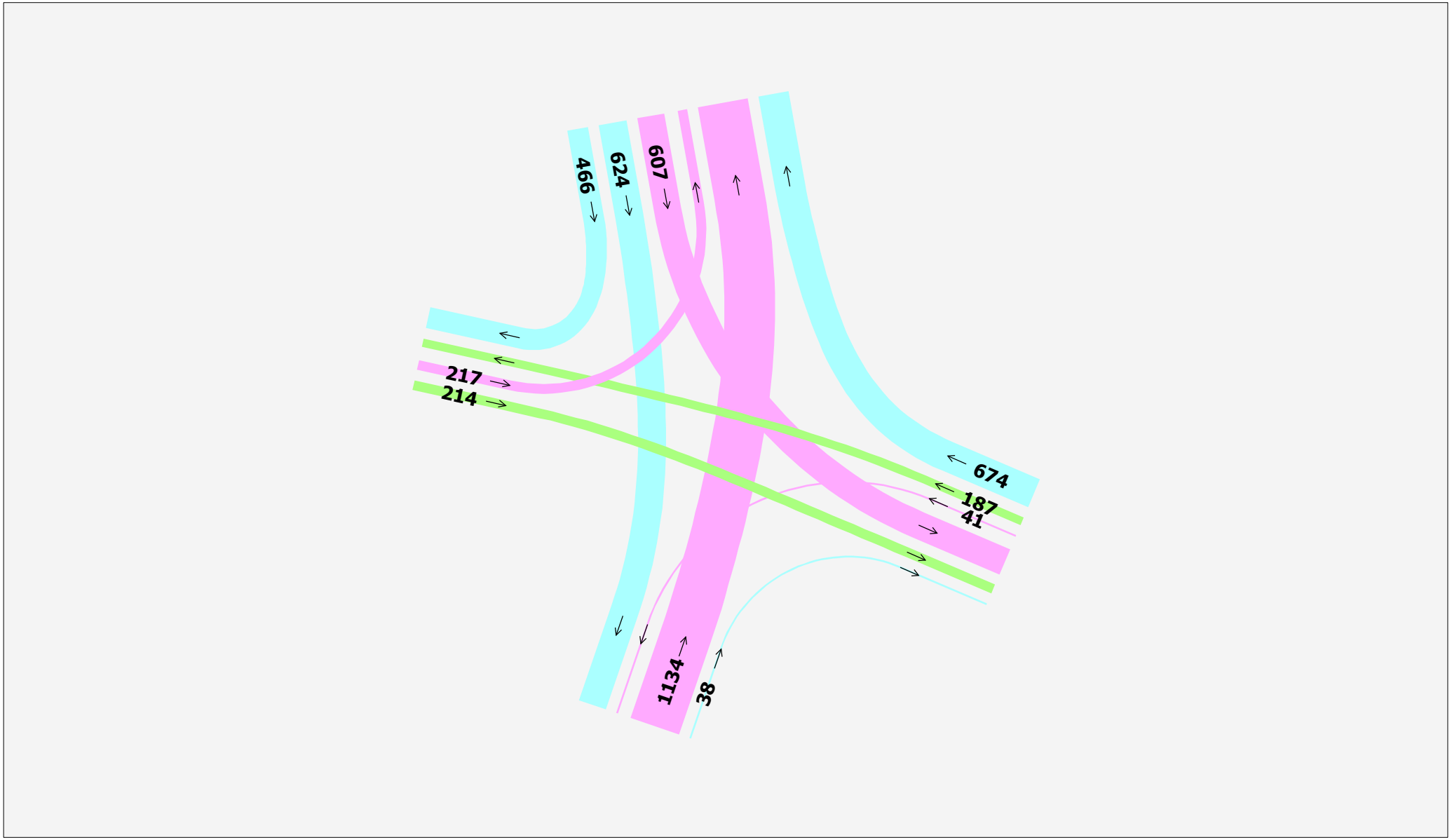
Beavercreek 6:00

2015



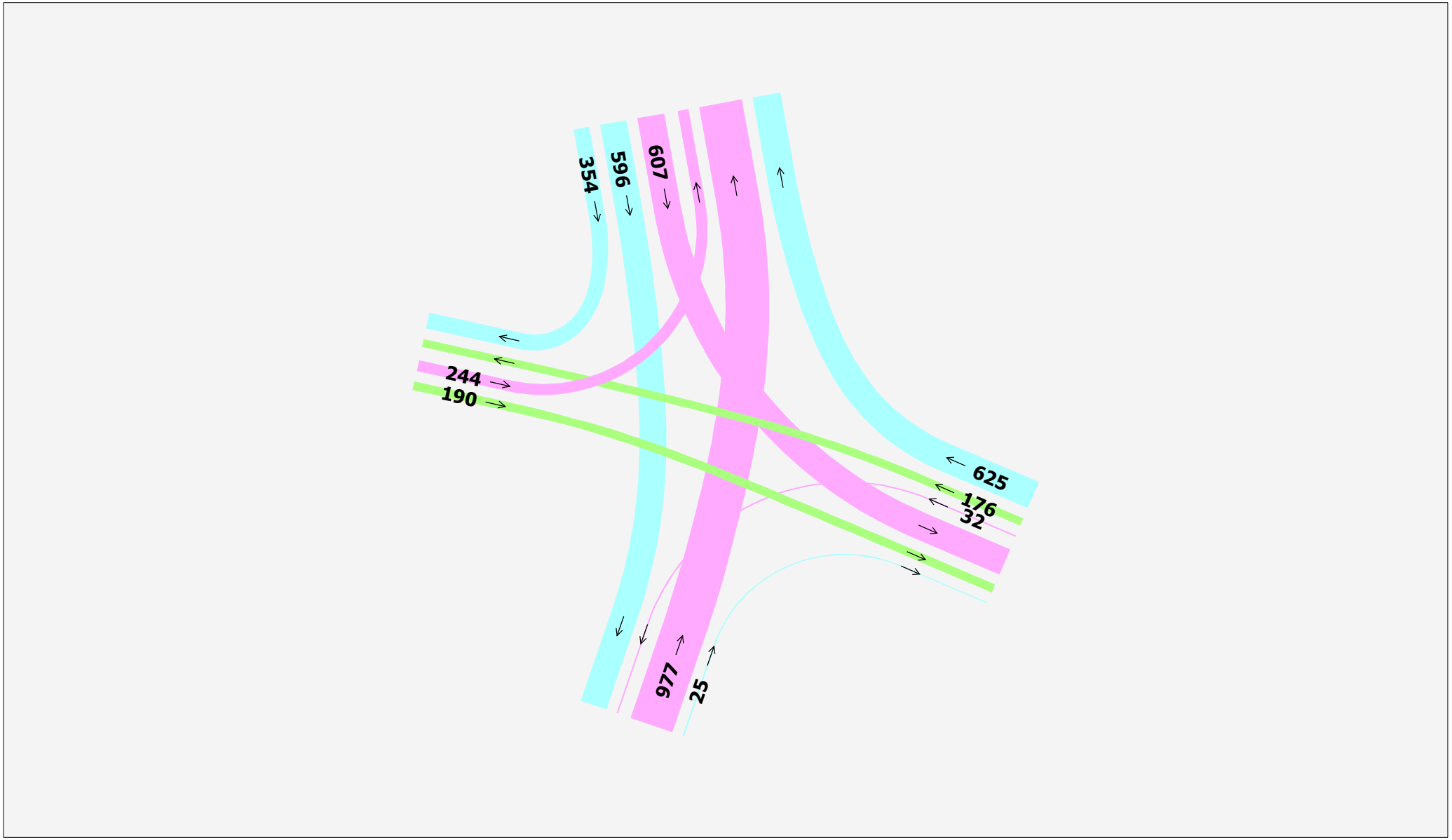
Beavercreek 7:00

2015



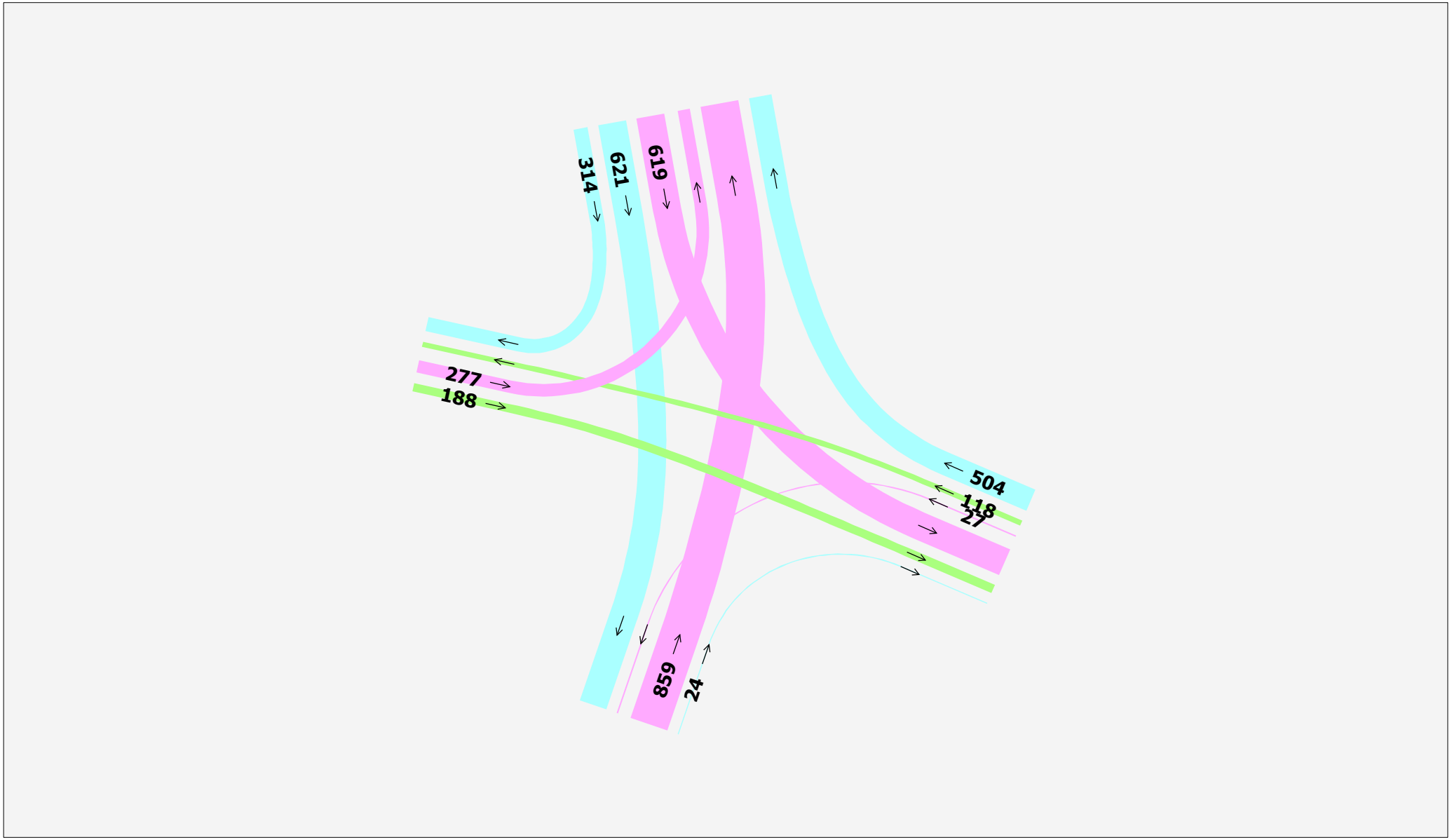
Beavercreek 8:00

2015



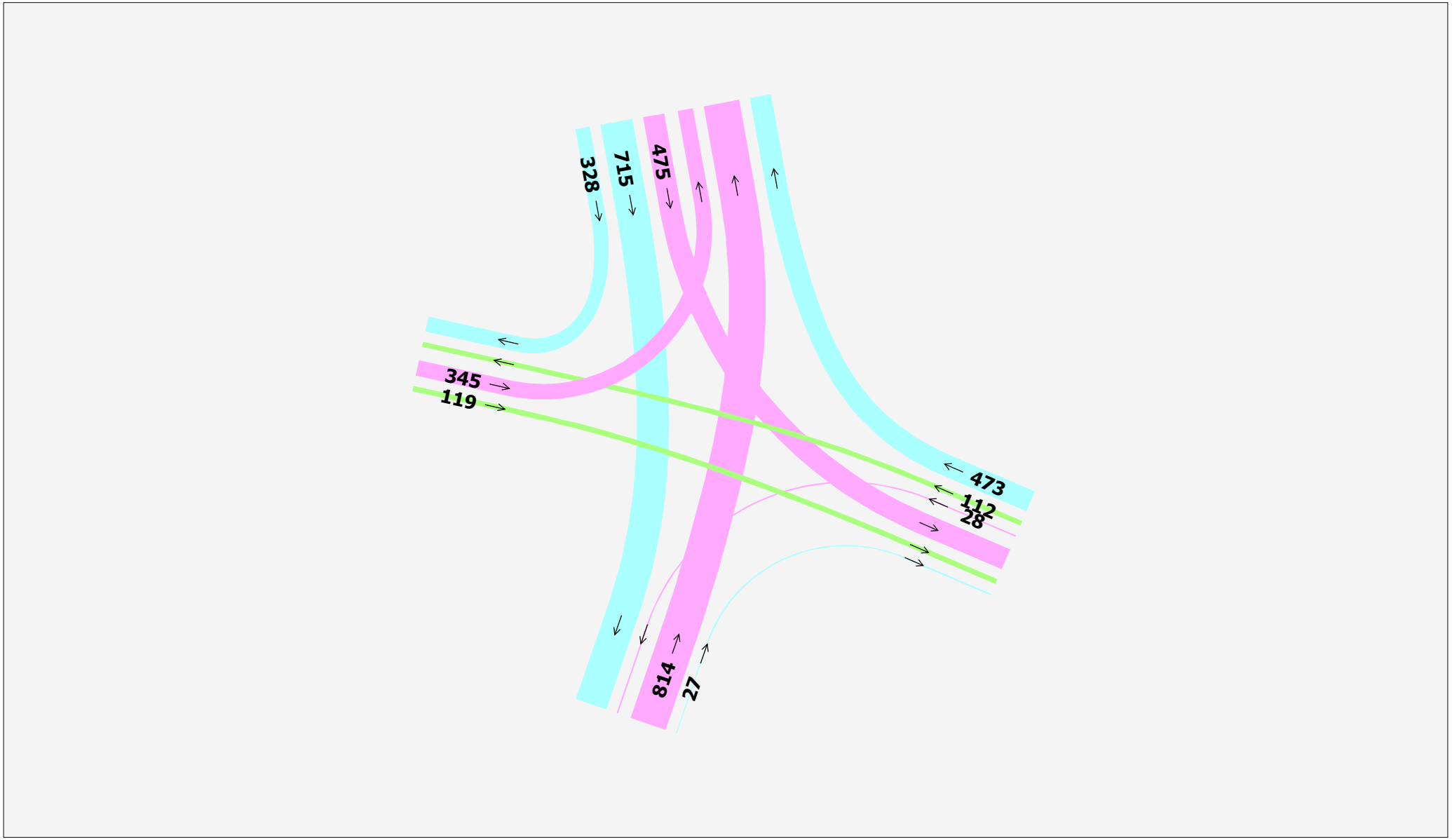
Beavercreek 9:00

2015



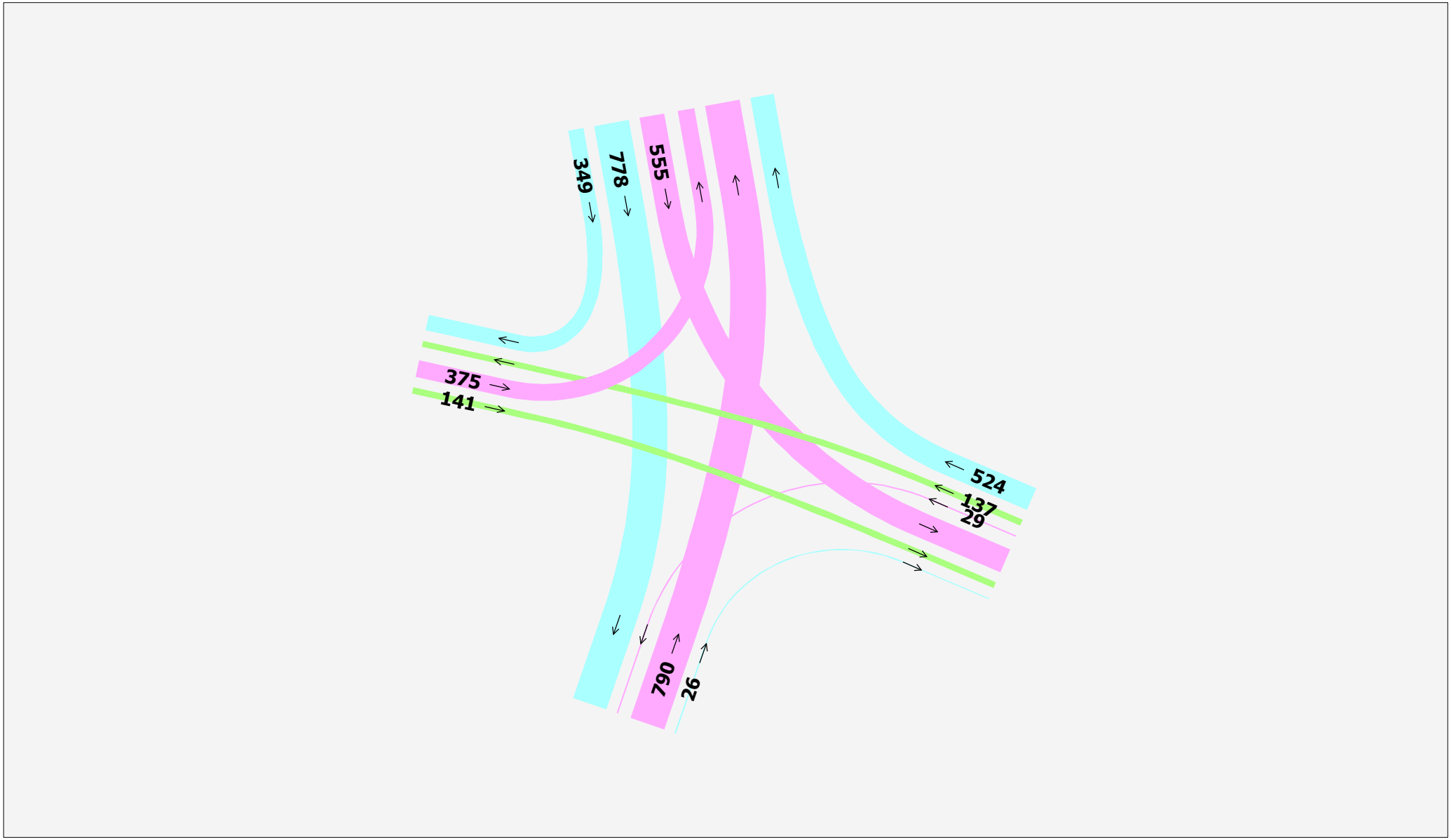
Beavercreek 10:00

2015



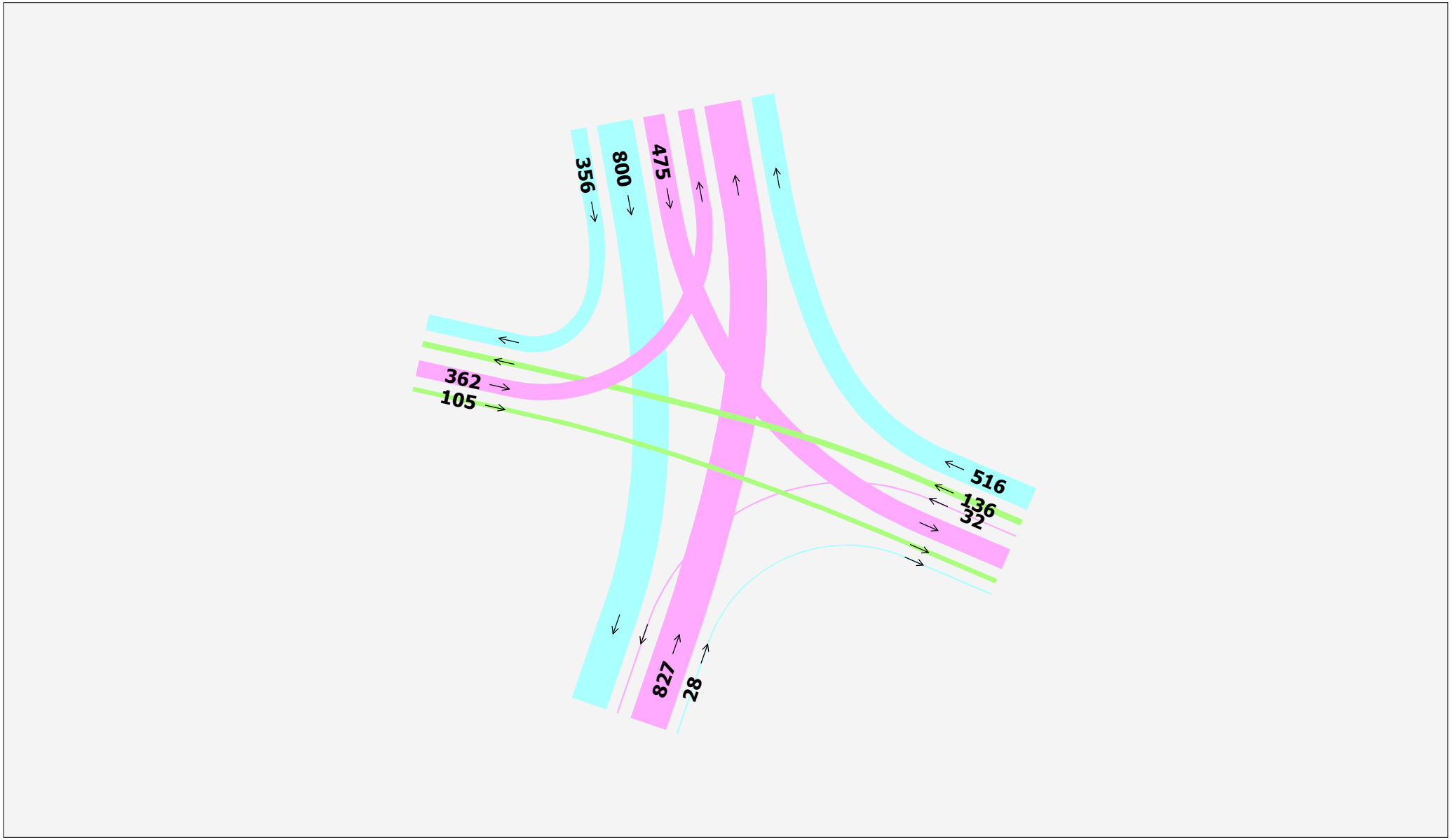
Beavercreek 11:00

2015



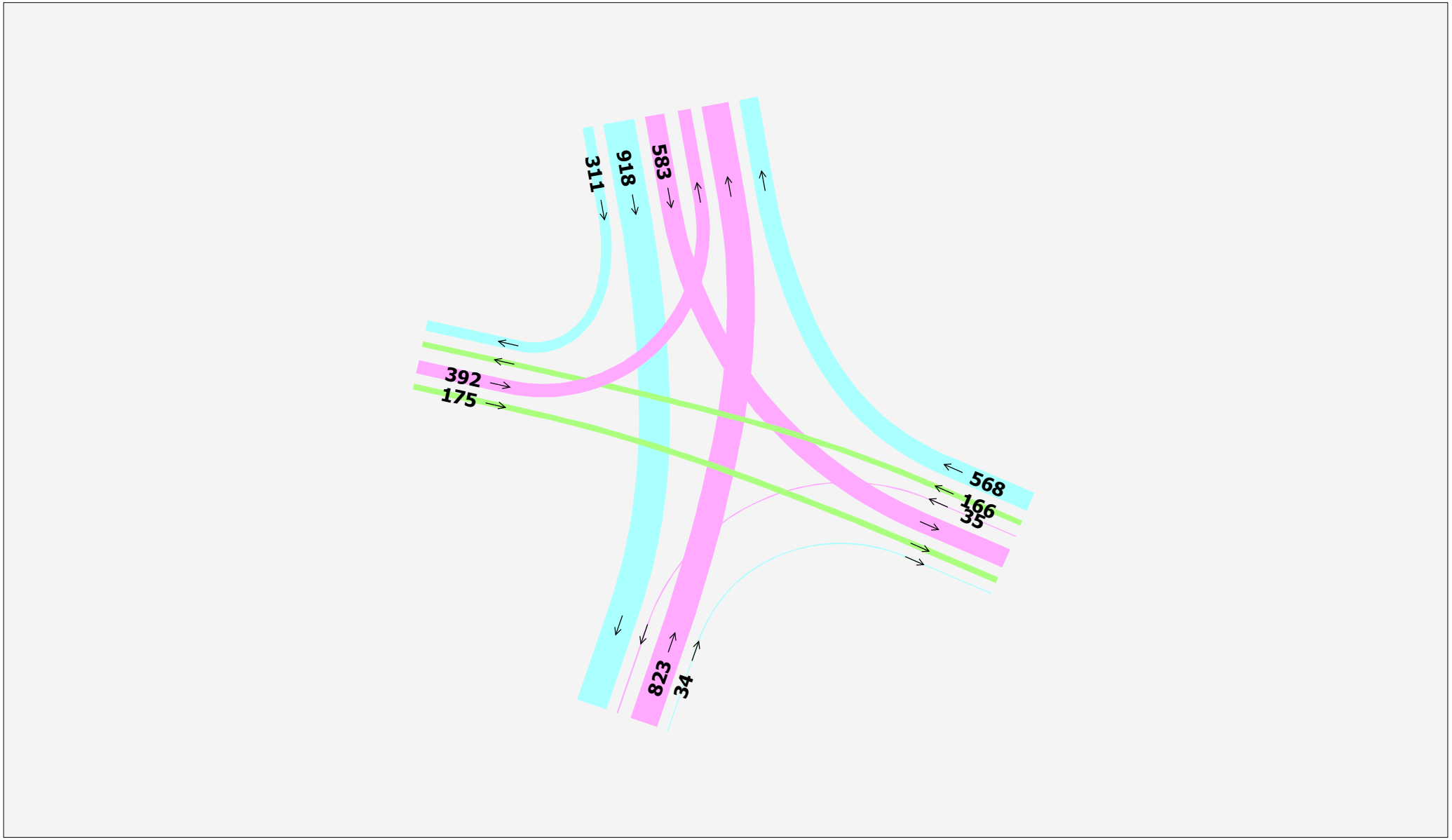
Beavercreek 12:00

2015



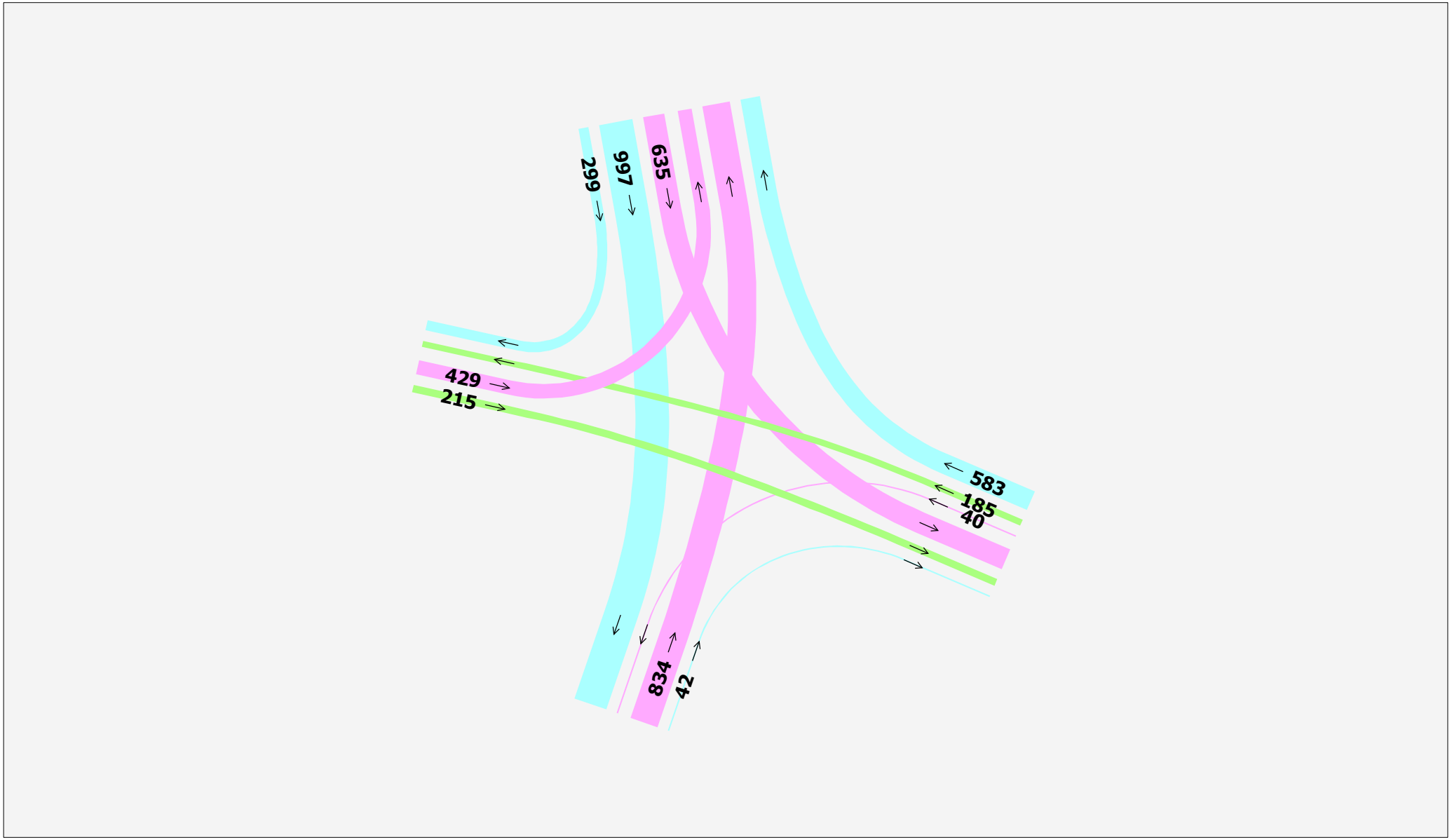
Beavercreek 13:00

2015



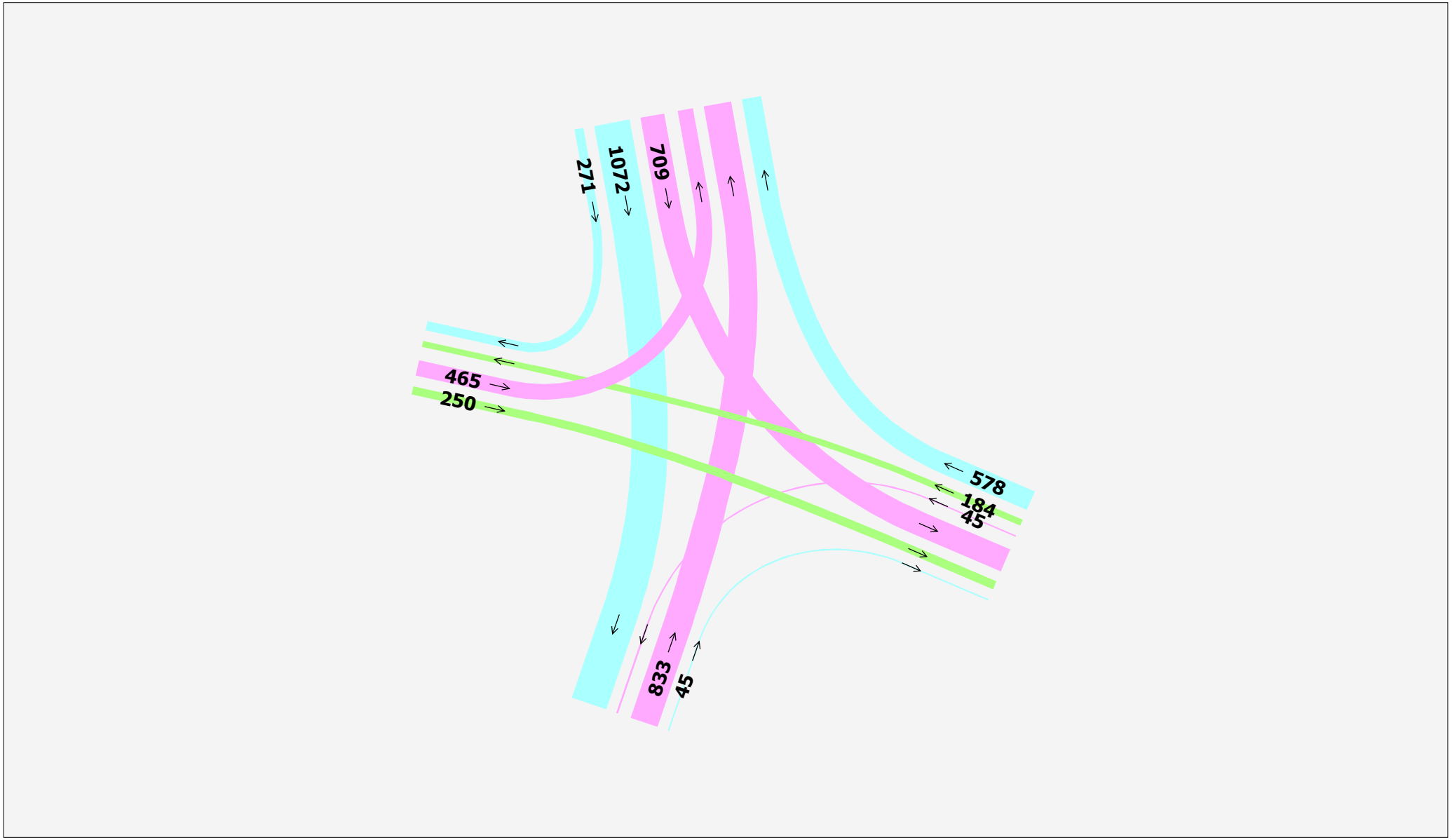
Beavercreek 14:00

2015



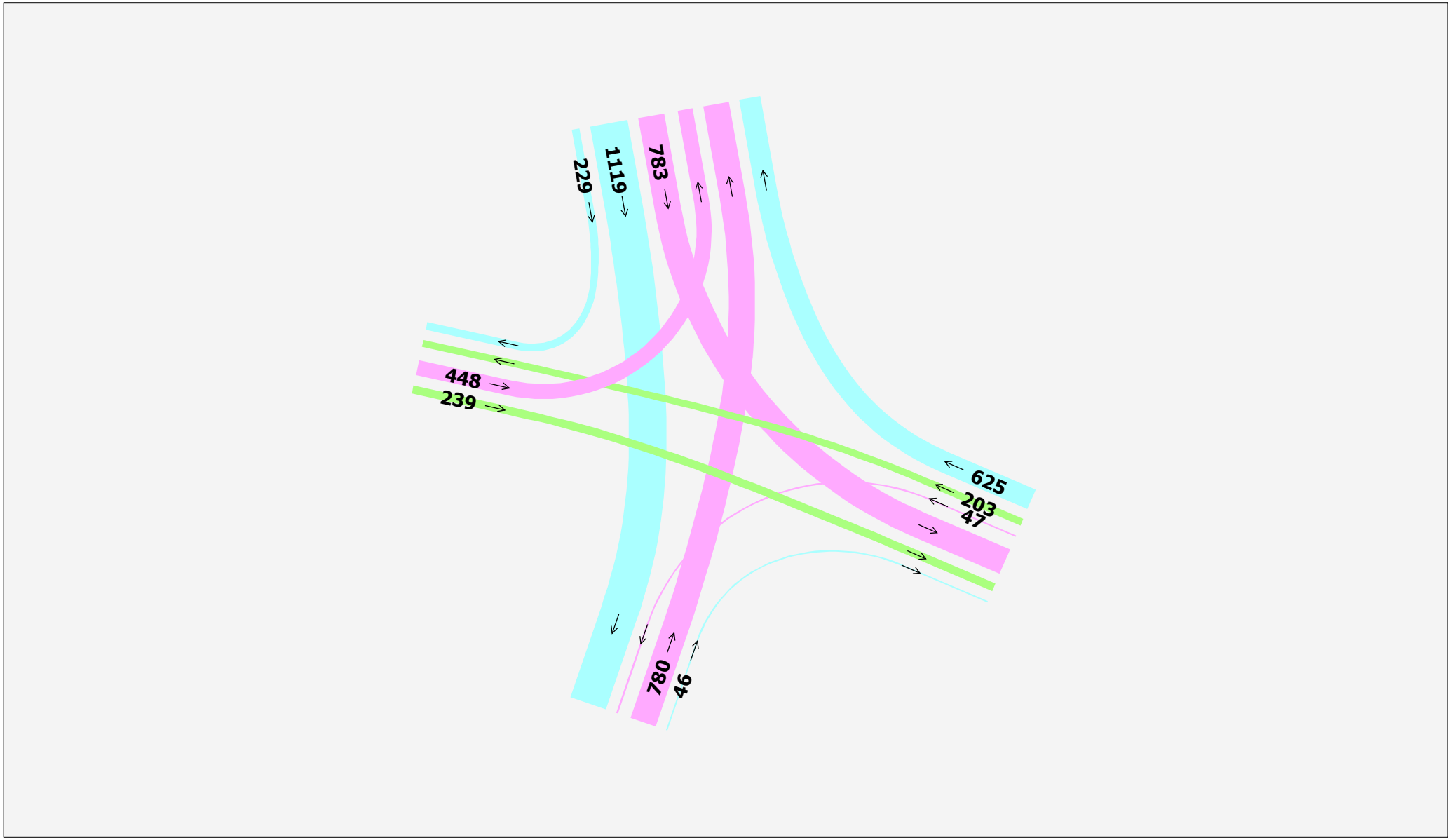
Beavercreek 15:00

2015



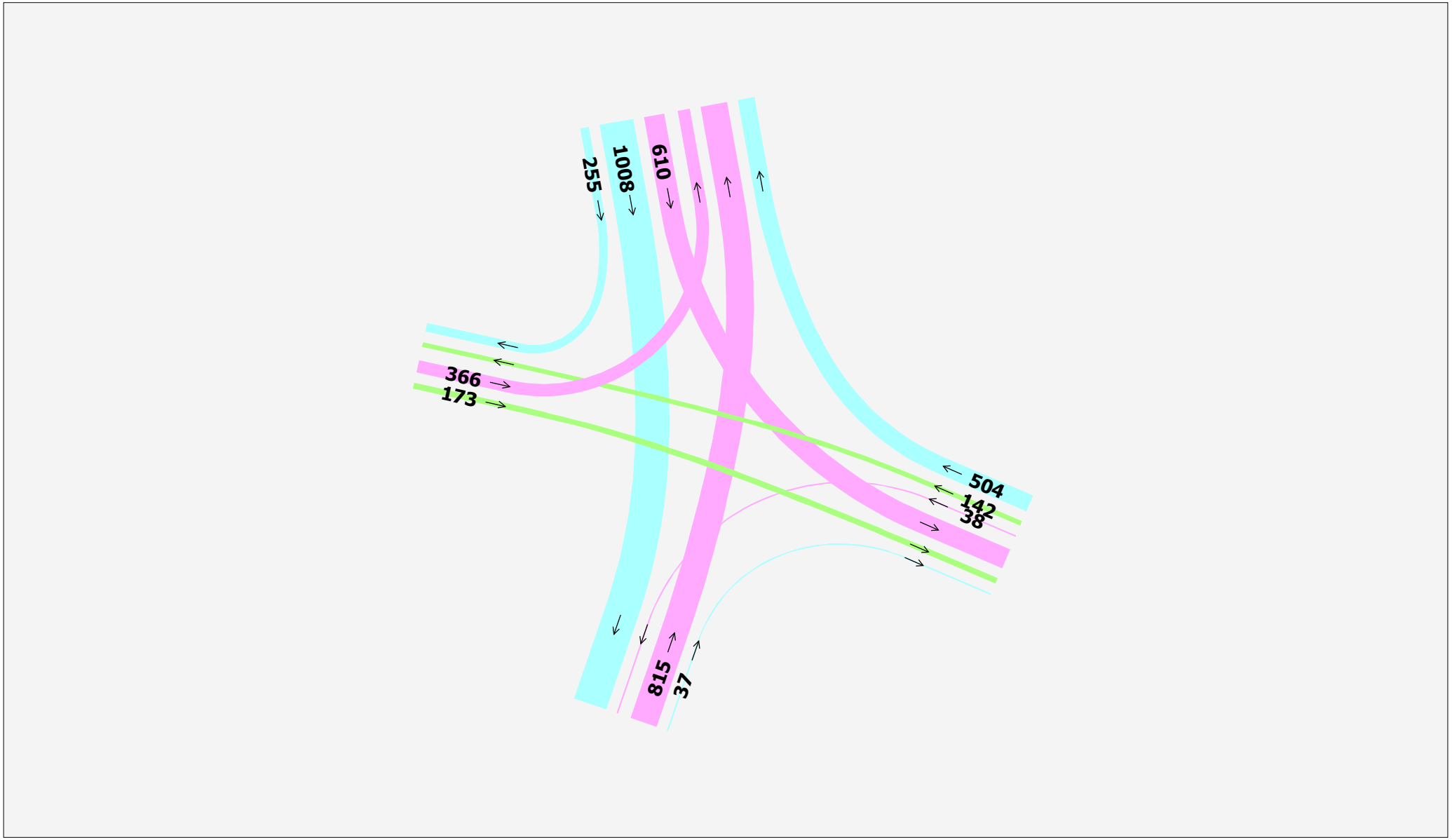
Beavercreek 16:00

2015



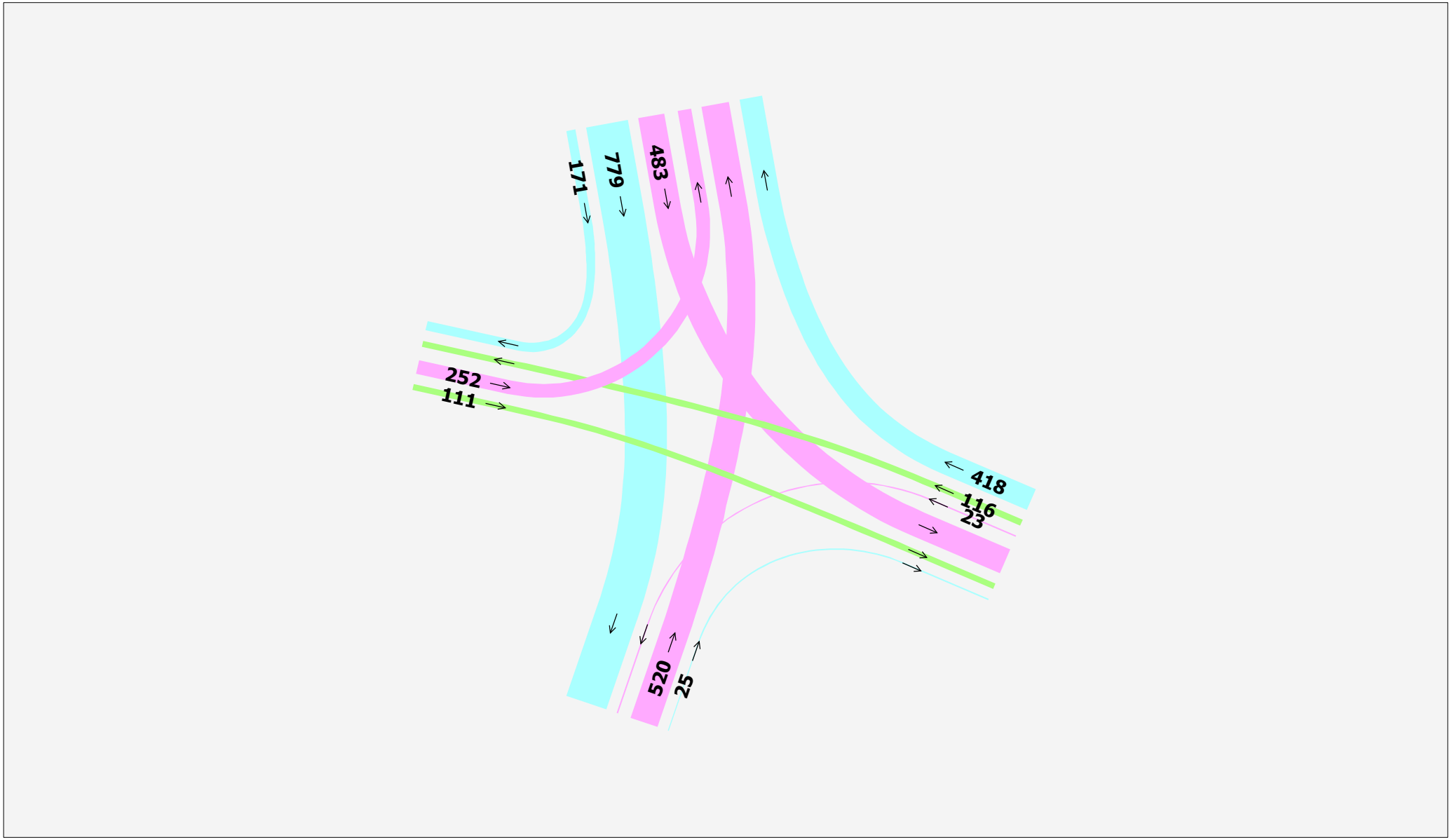
Beavercreek 17:00

2015



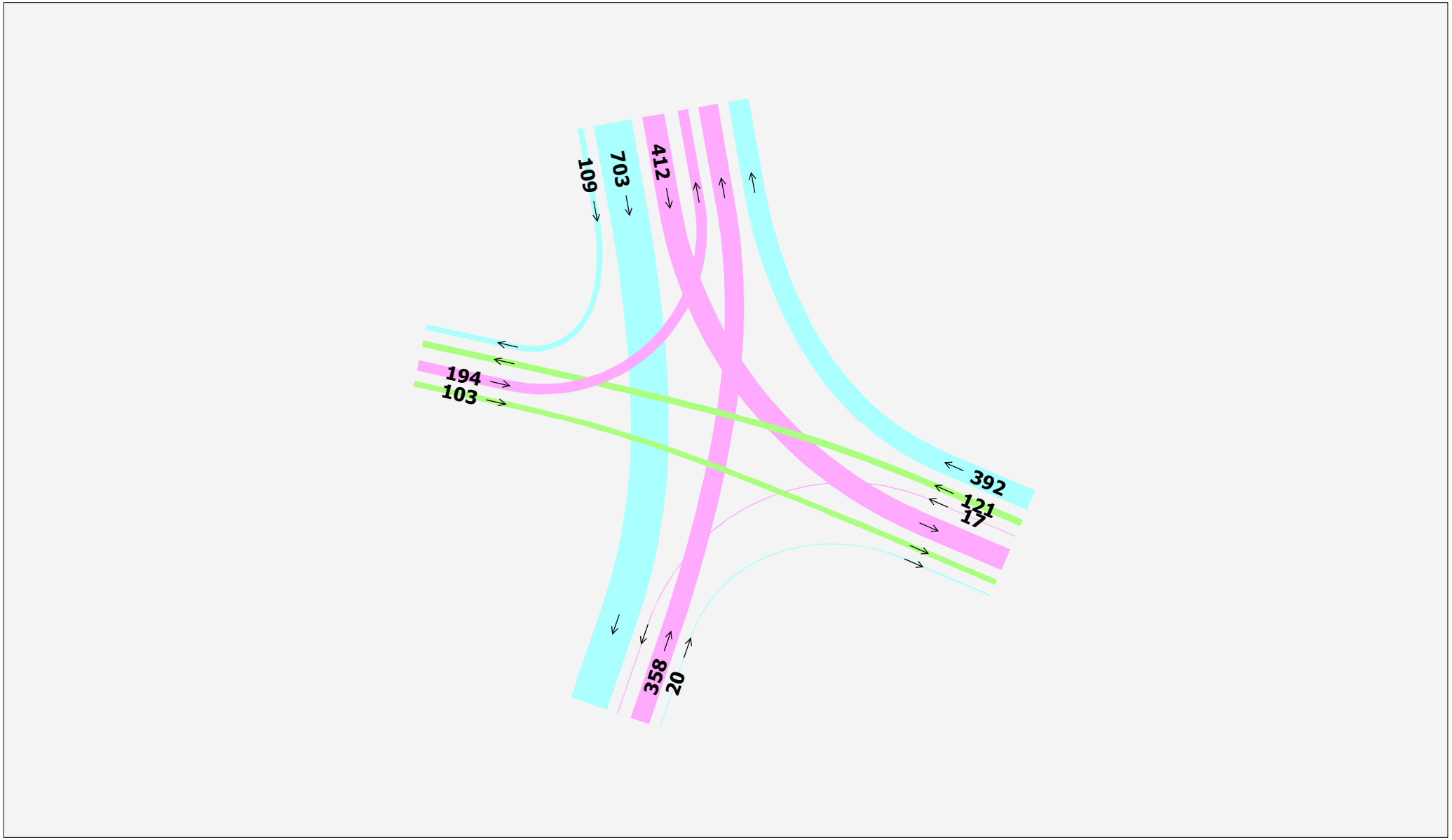
Beavercreek 18:00

2015



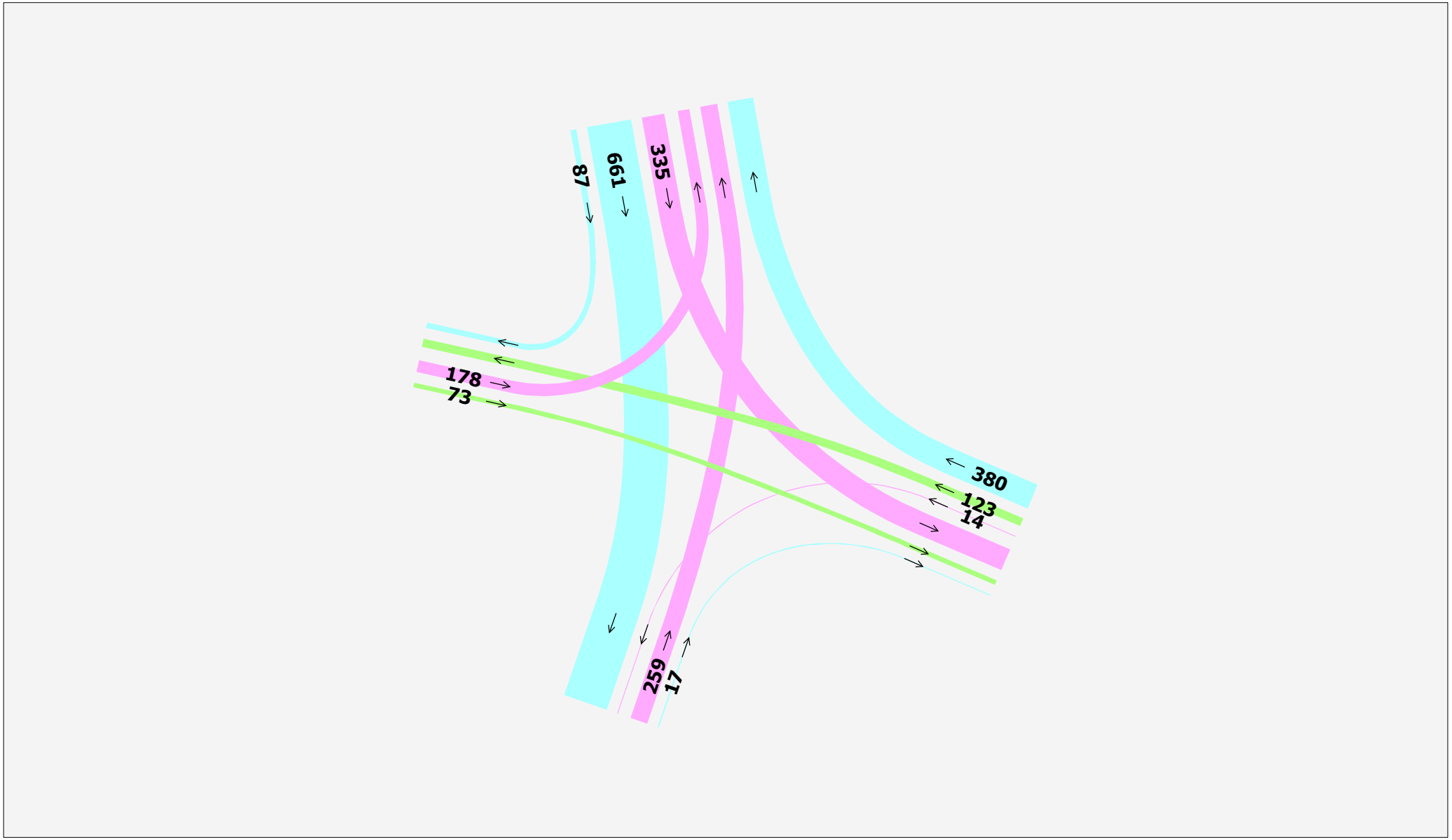
Beavercreek 19:00

2015



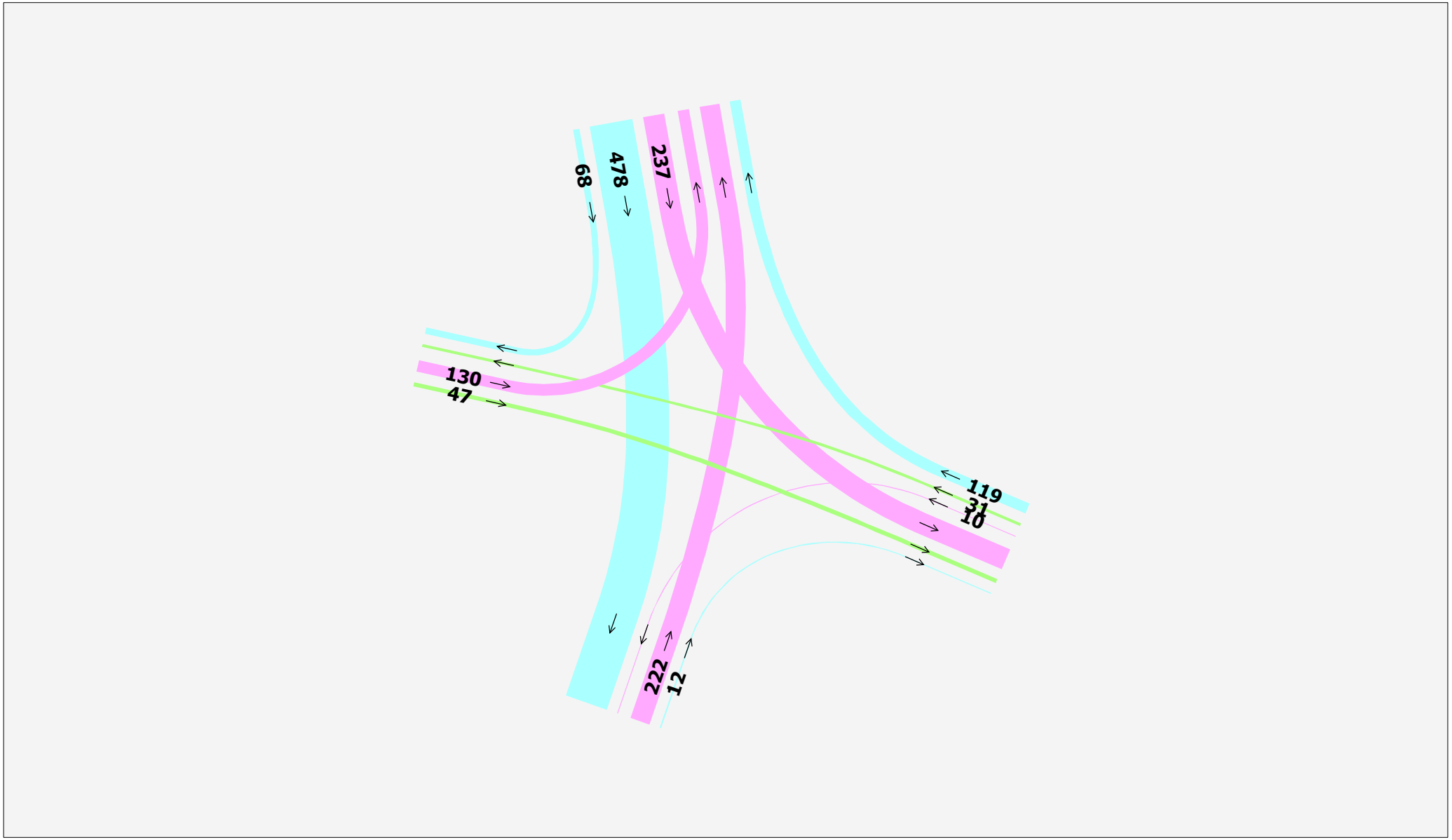
Beavercreek 20:00

2015



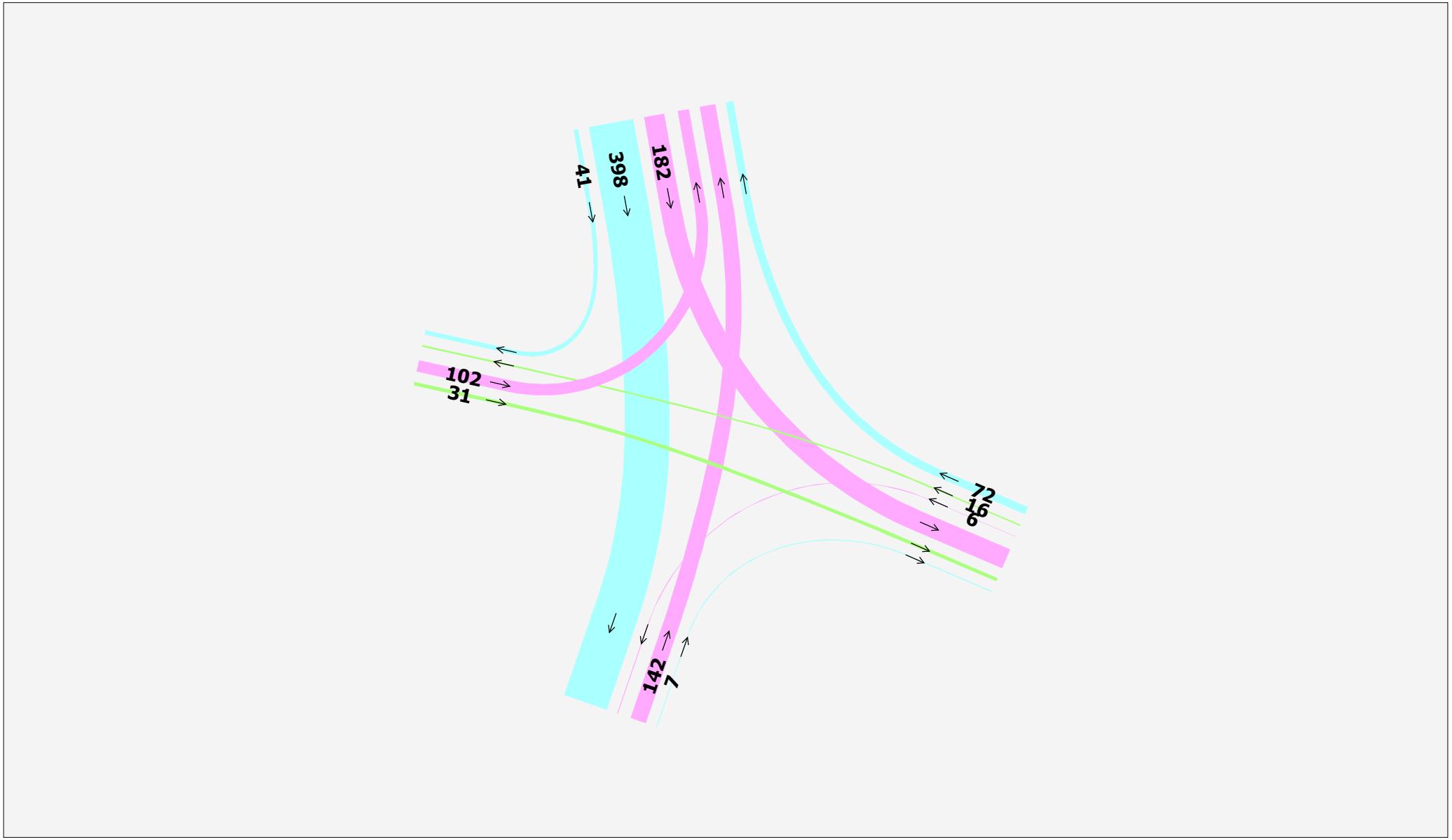
Beavercreek 21:00

2015



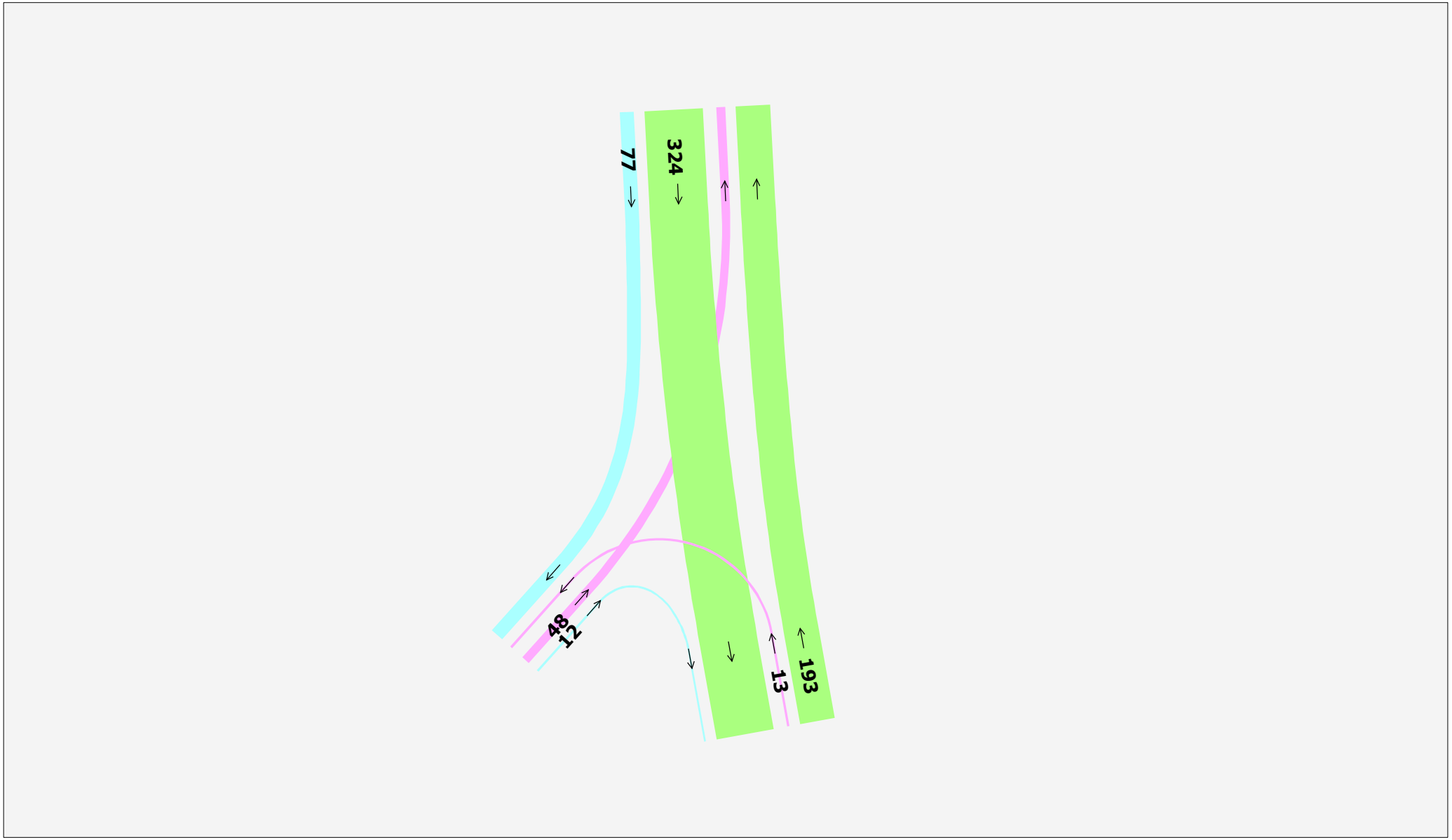
Beavercreek 22:00

2015



Beavercreek 23:00

2015

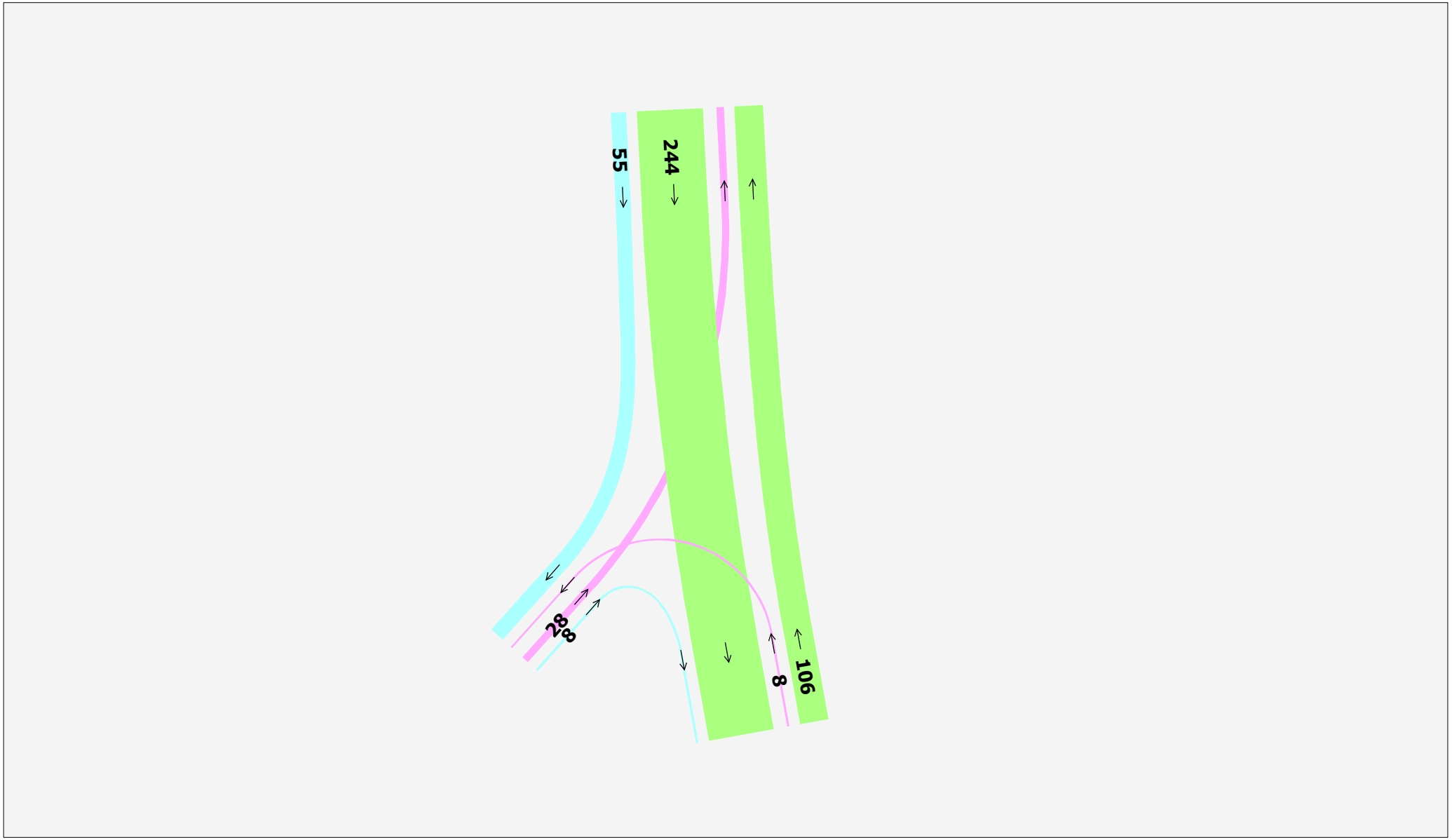


Redland 0:00

2015

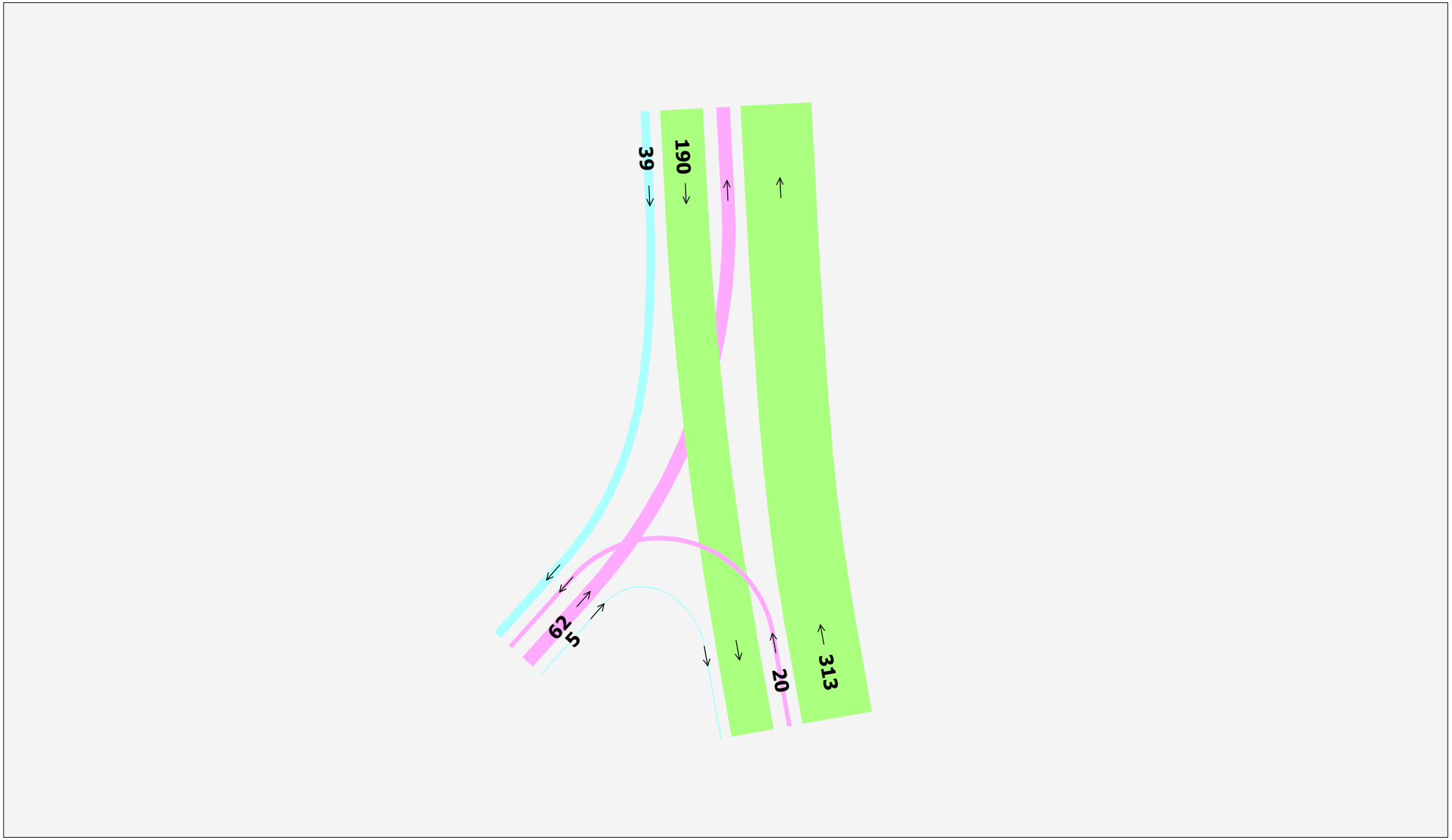
Redland 1:00

2015



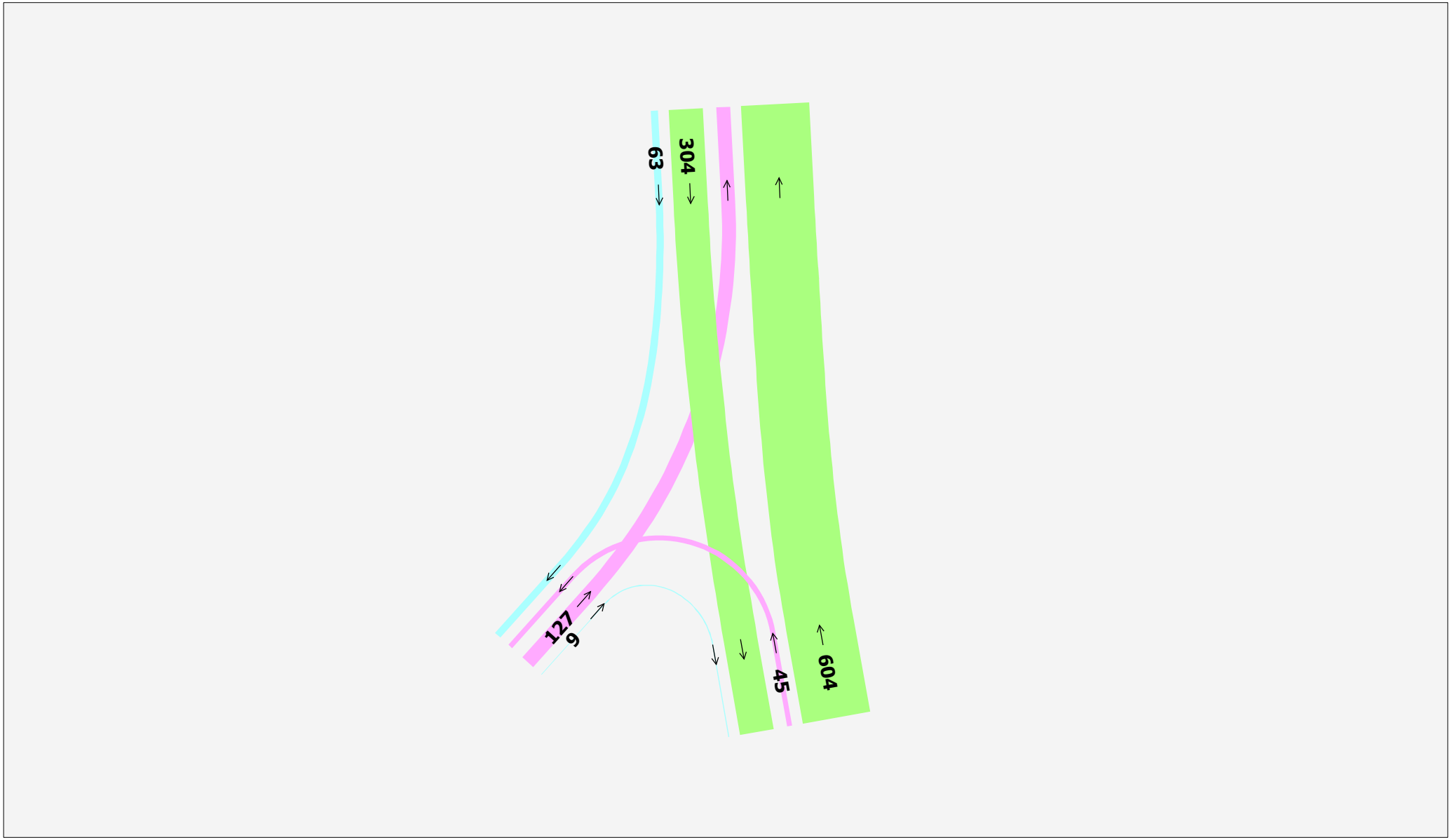
Redland 2:00

2015



Redland 3:00

2015



Redland 4:00

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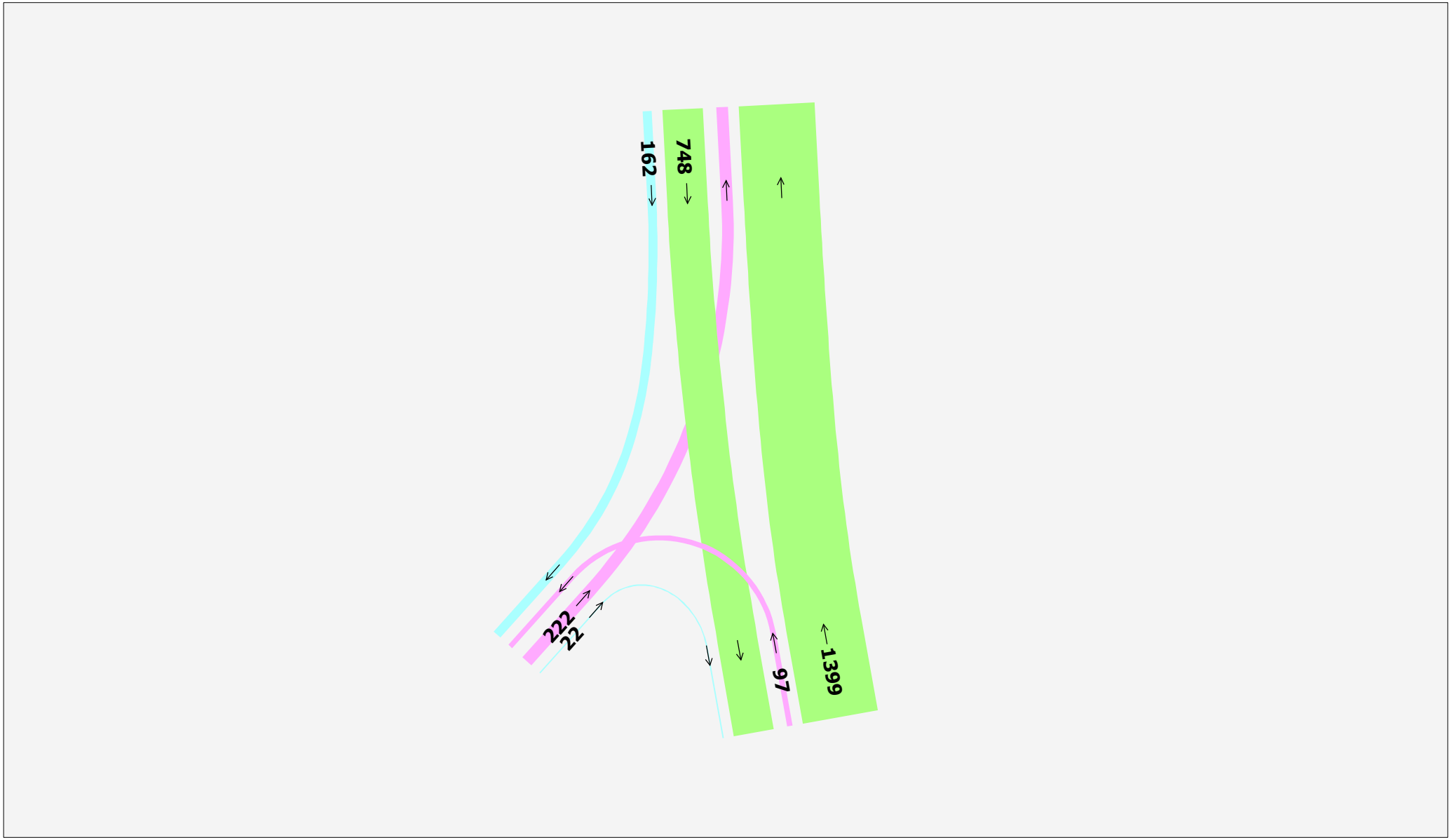
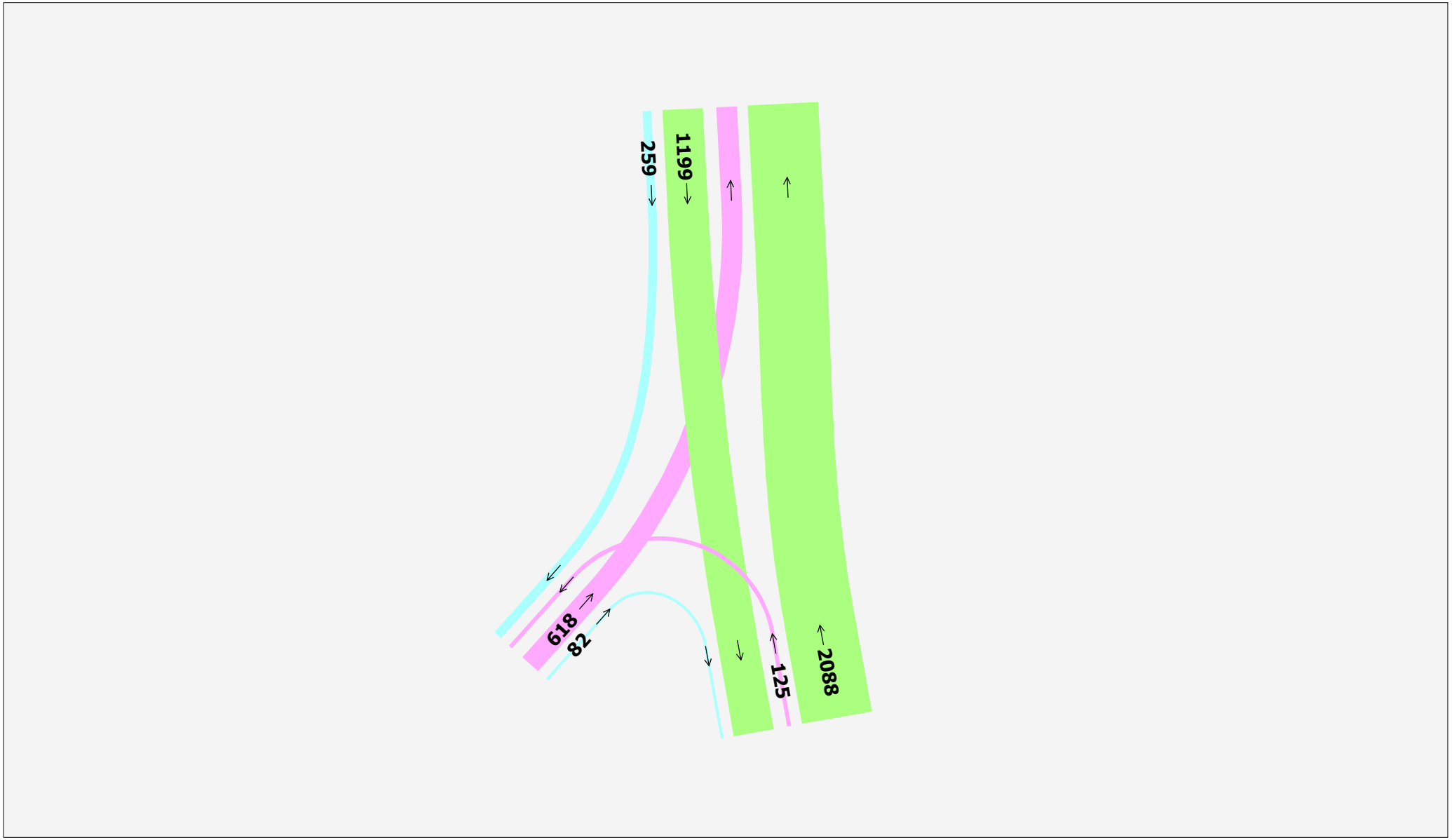


Redland 5:00

2015



Redland 6:00

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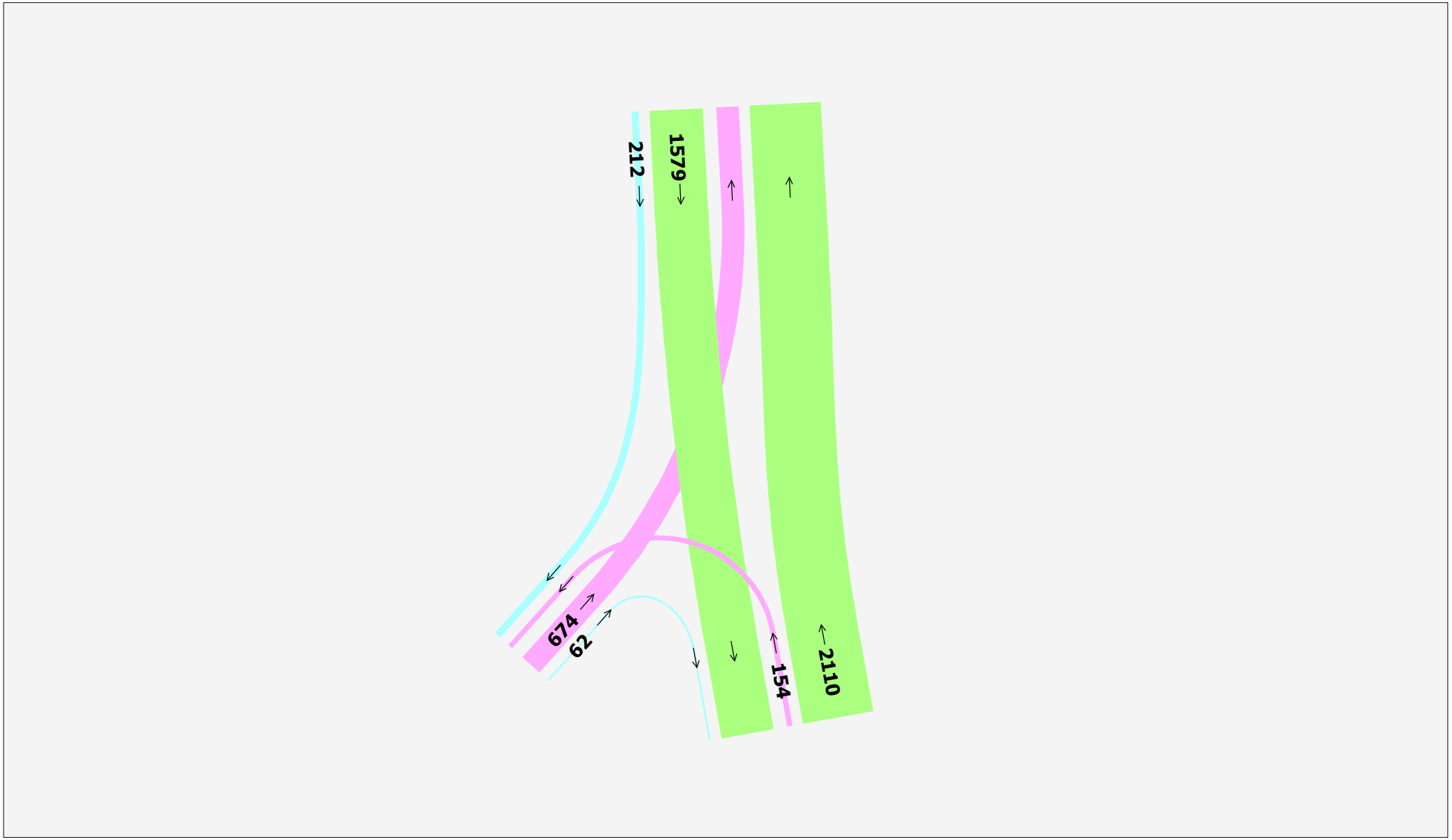

Redland 7:00

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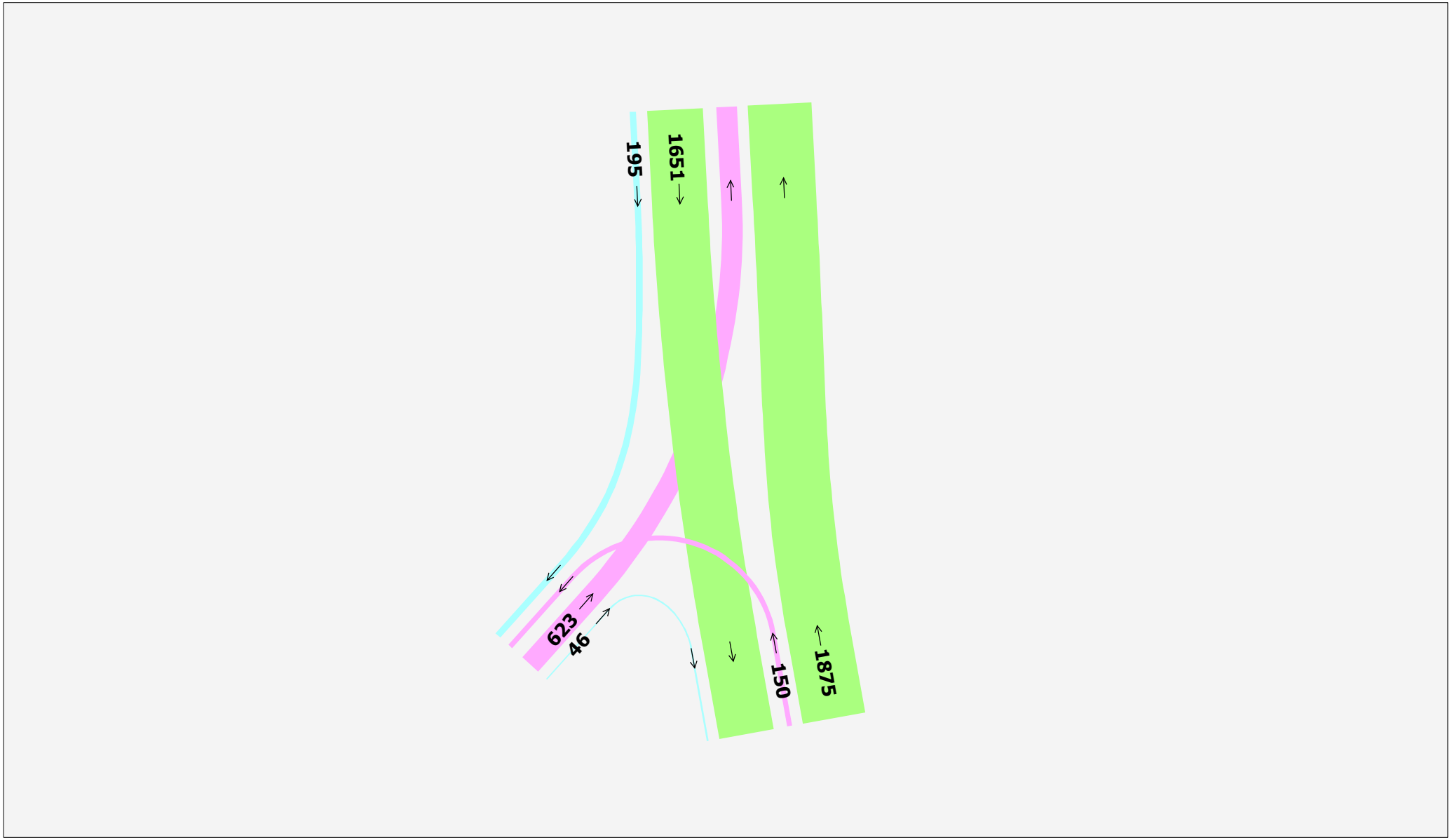

Redland 8:00

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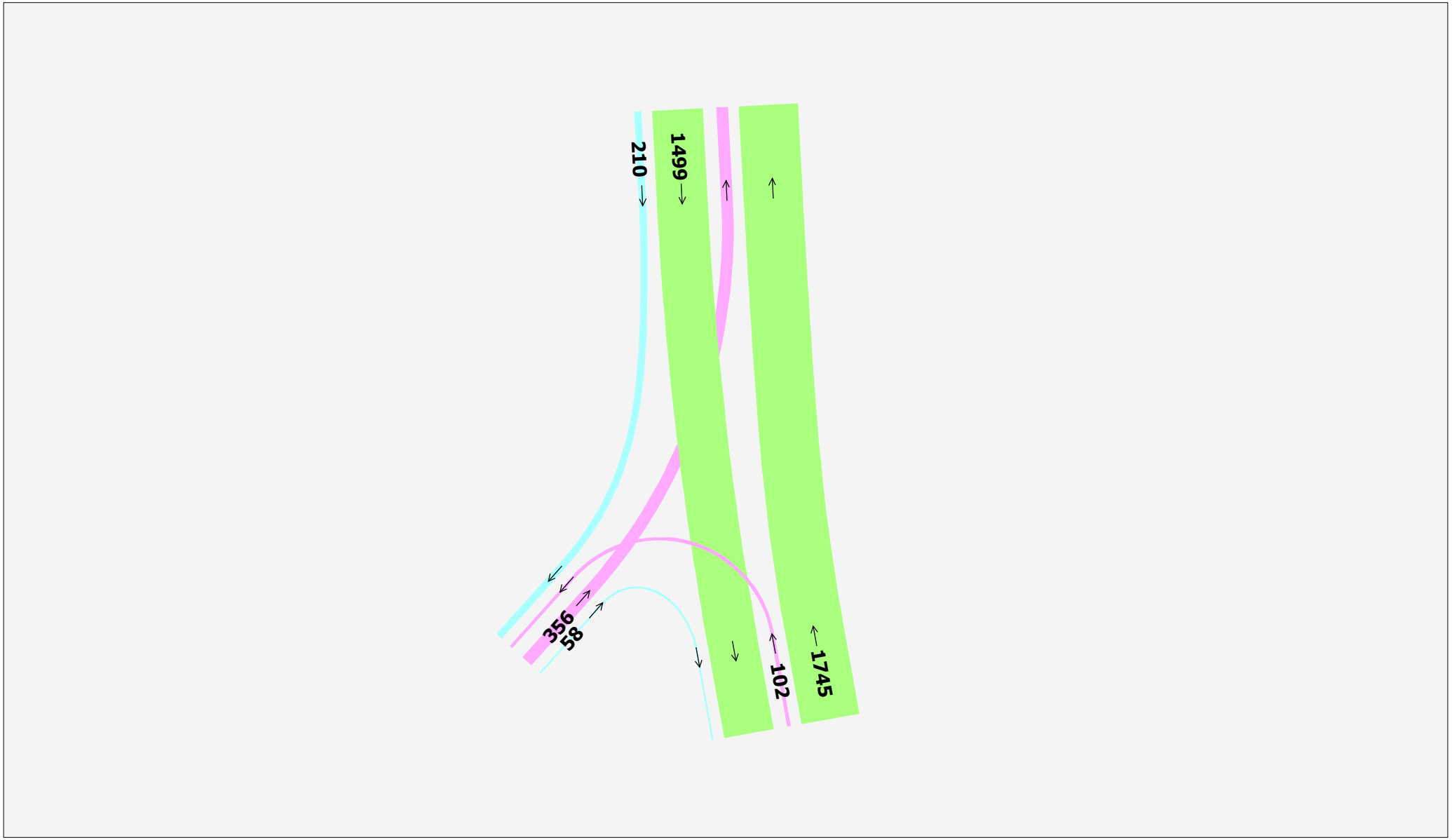

Redland 9:00

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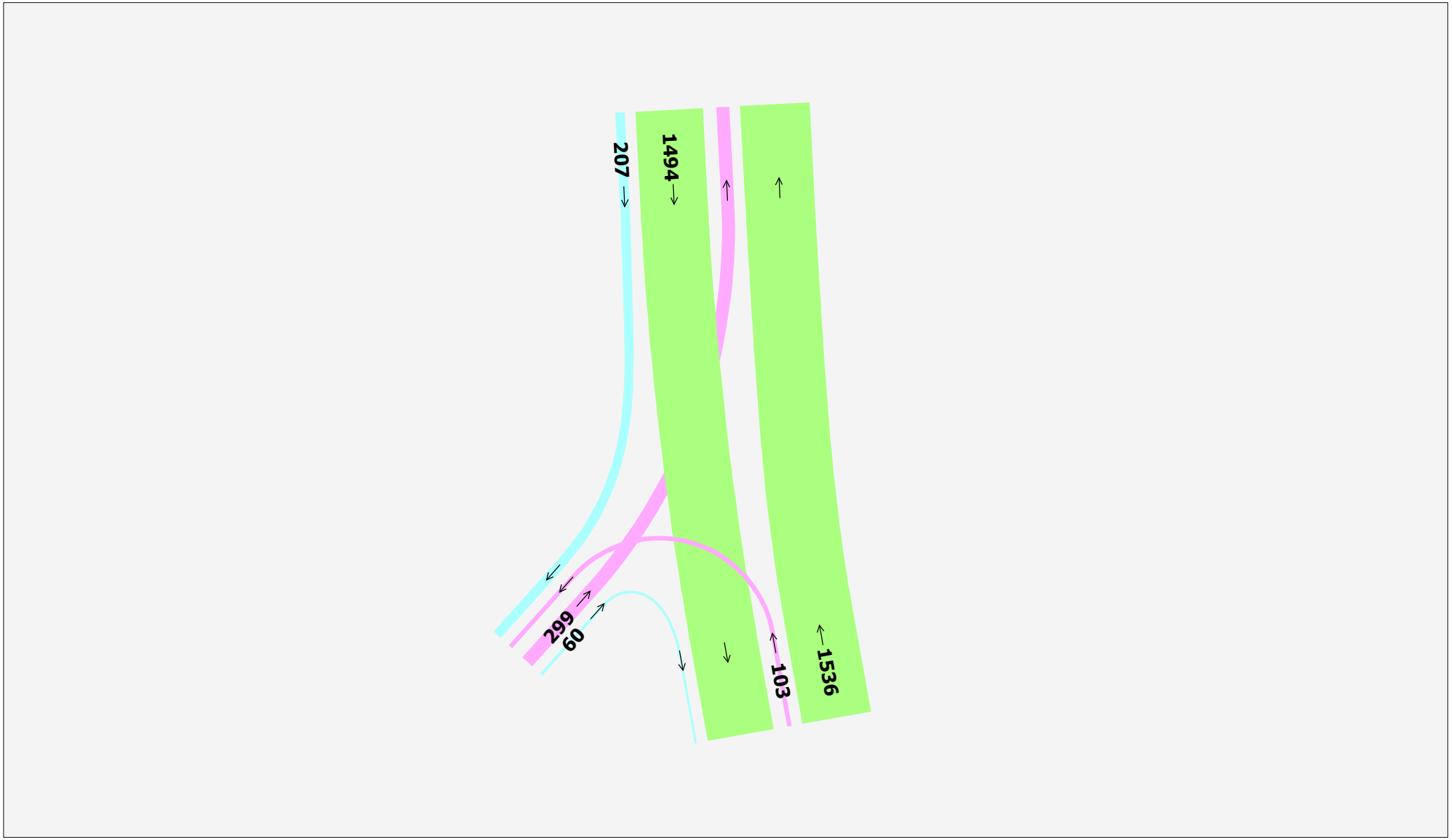

Redland 10:00

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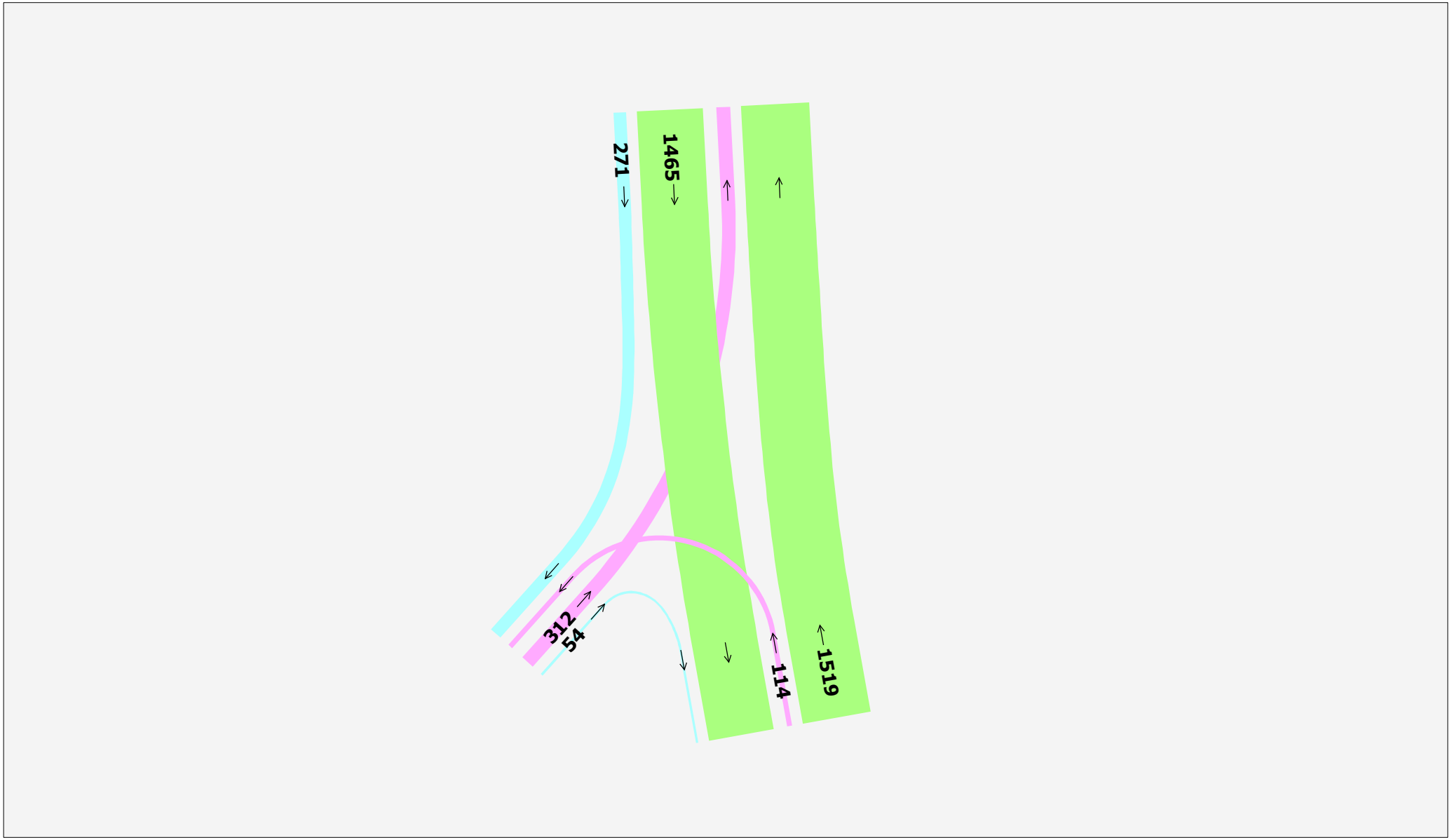

Redland 11:00

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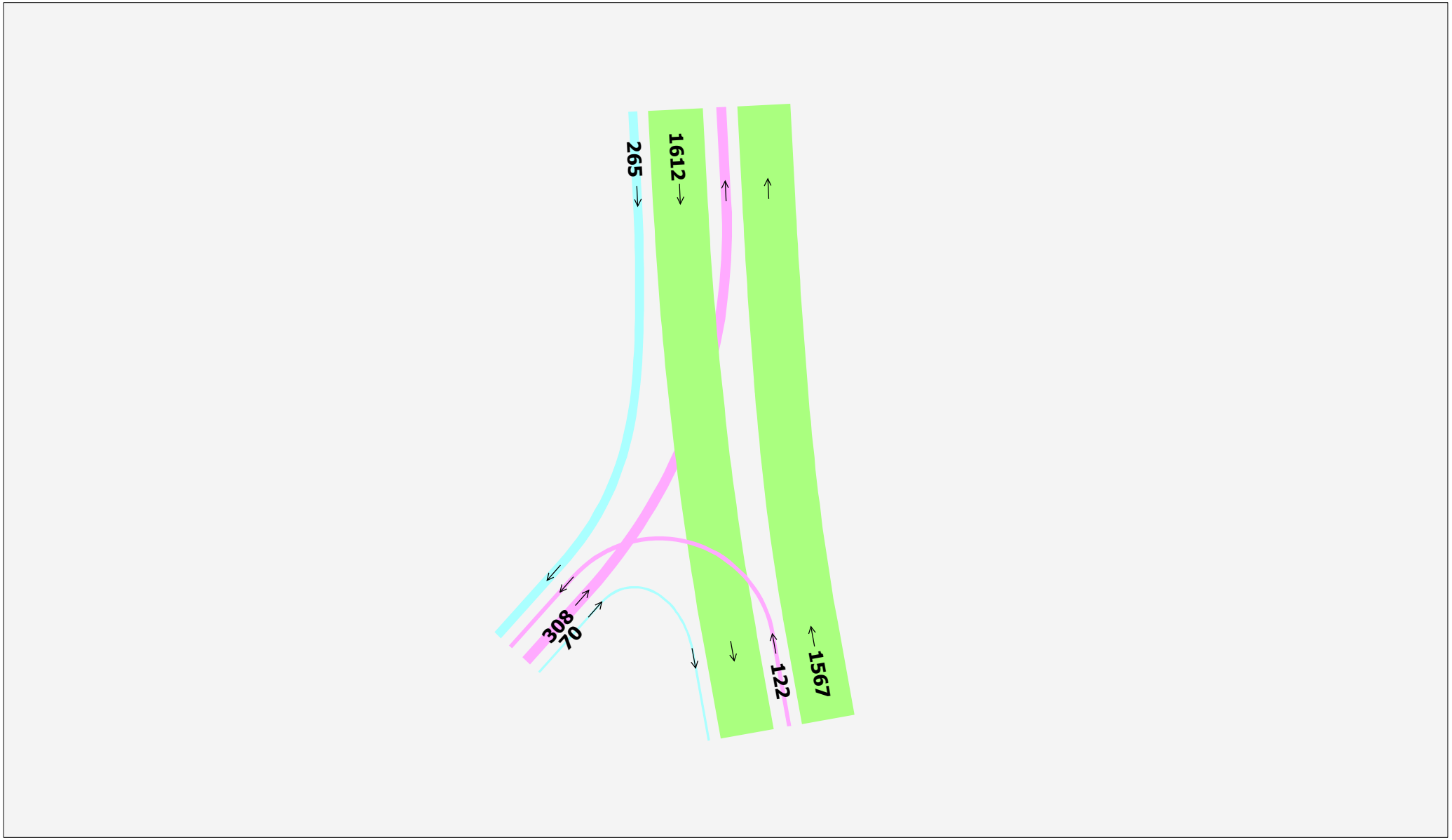

Redland 12:00

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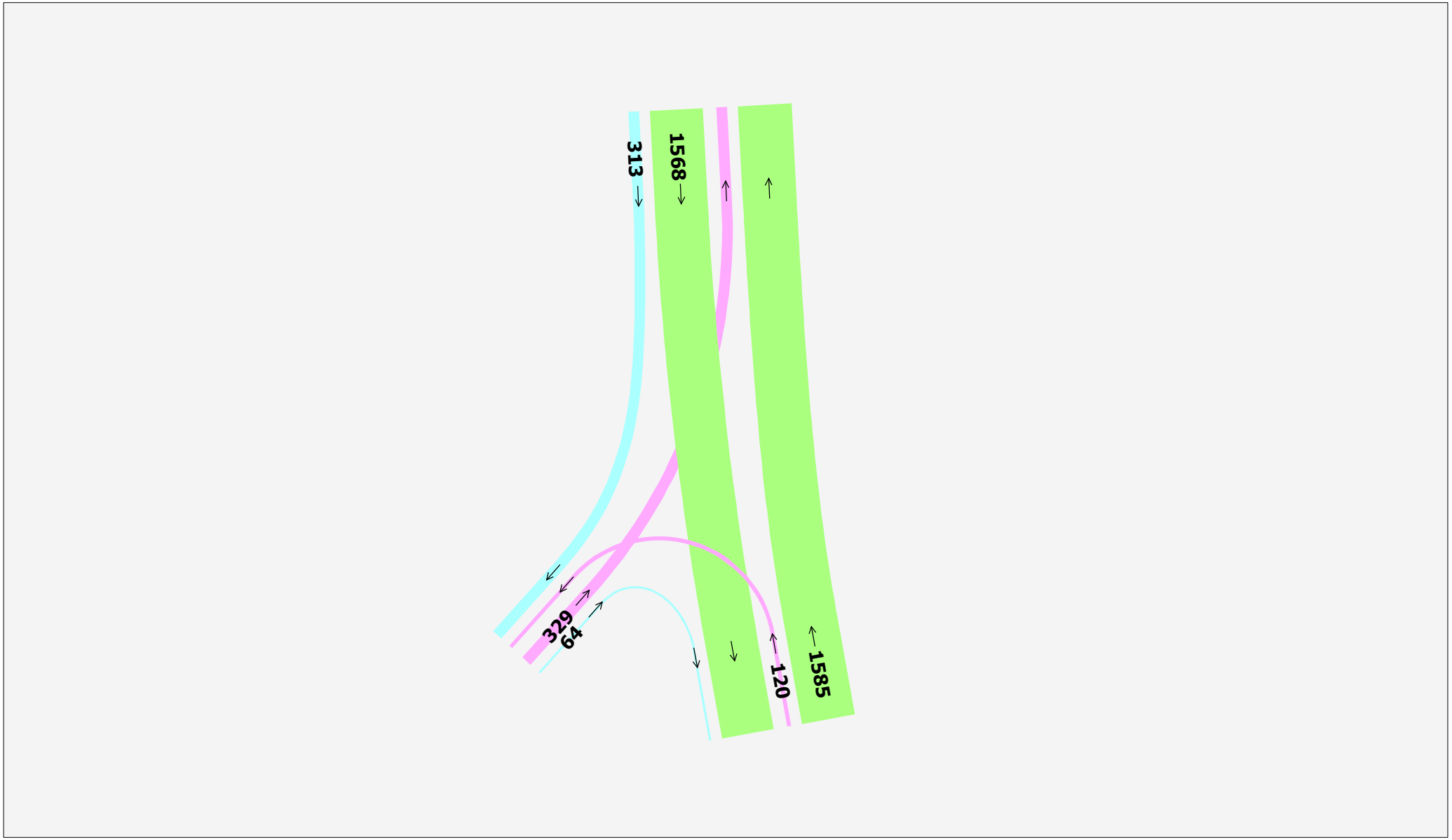
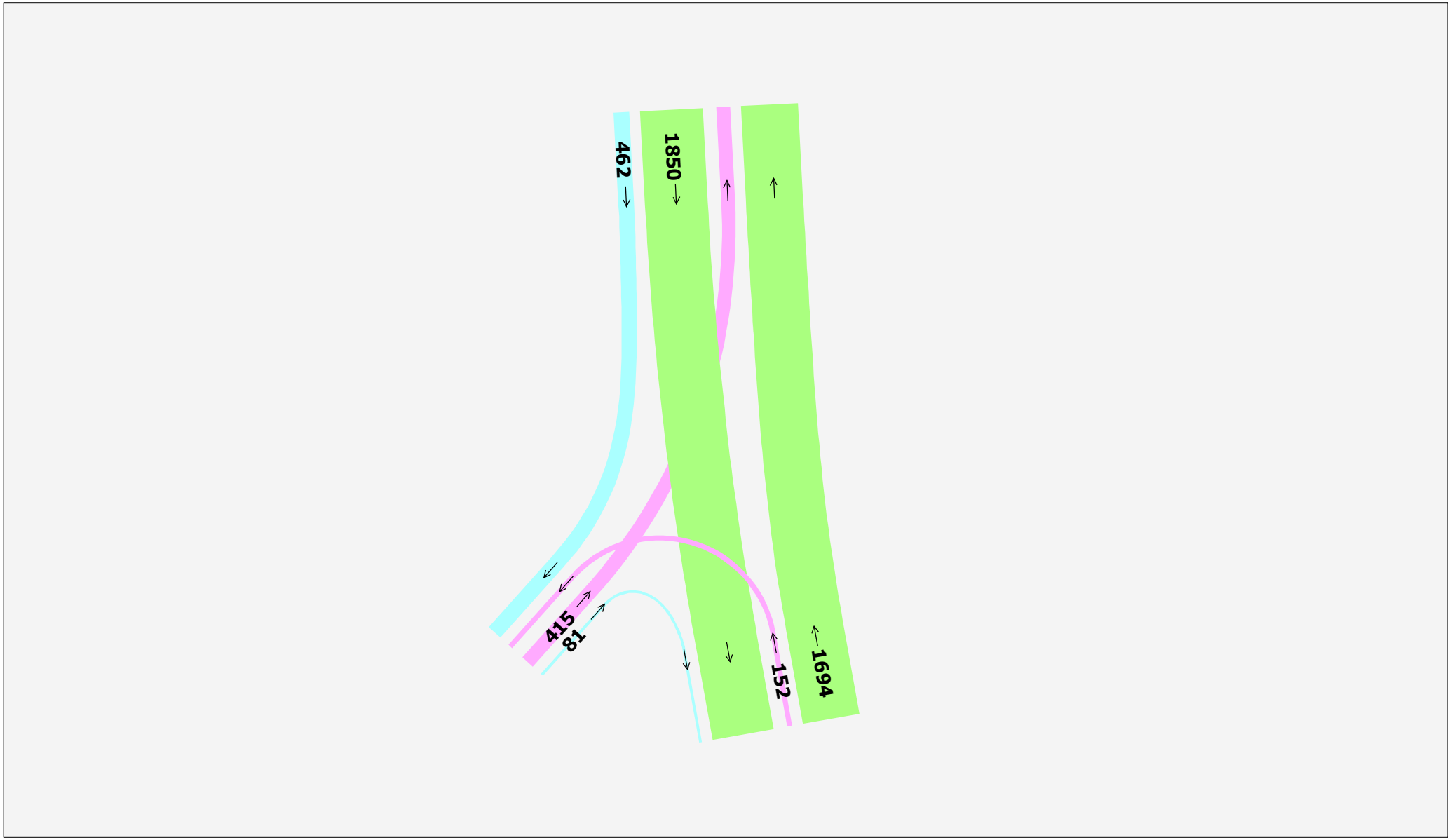


Redland 13:00

2015

Redland 14:00

2015



Redland 15:00

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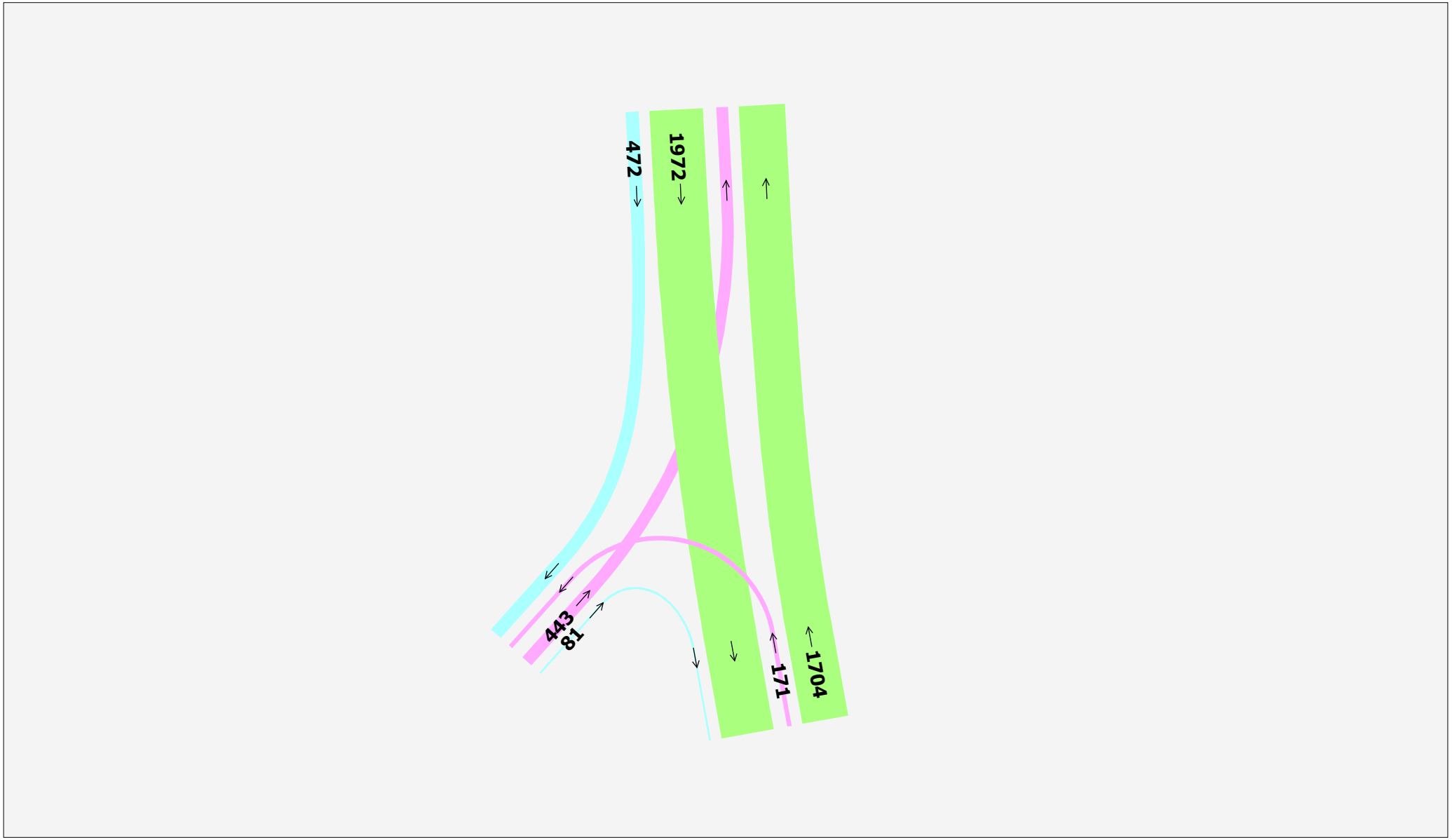

Redland 16:00

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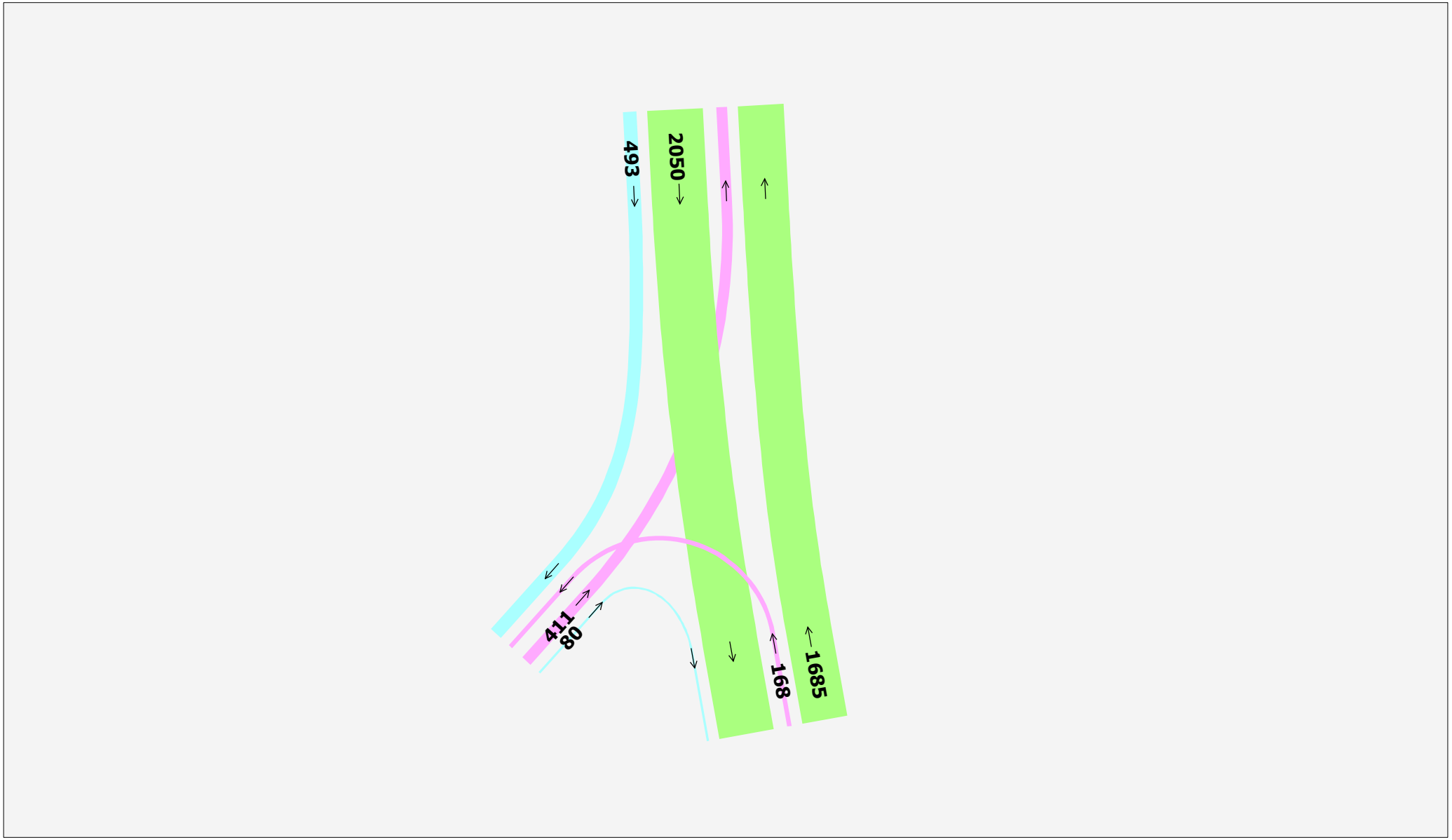

Redland 17:00

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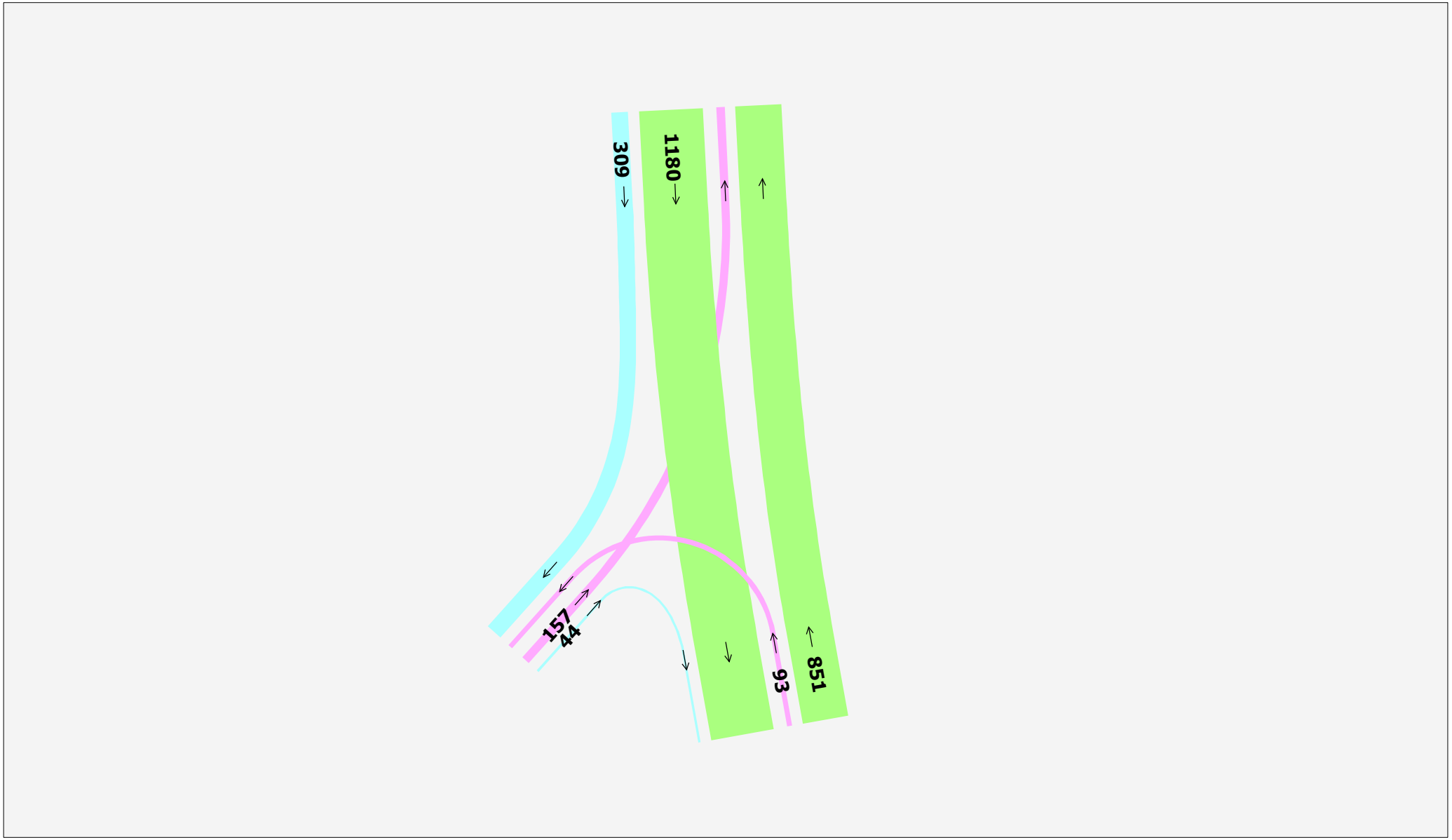
Redland 18:00

2015

Redland 19:00

2015



Redland 20:00

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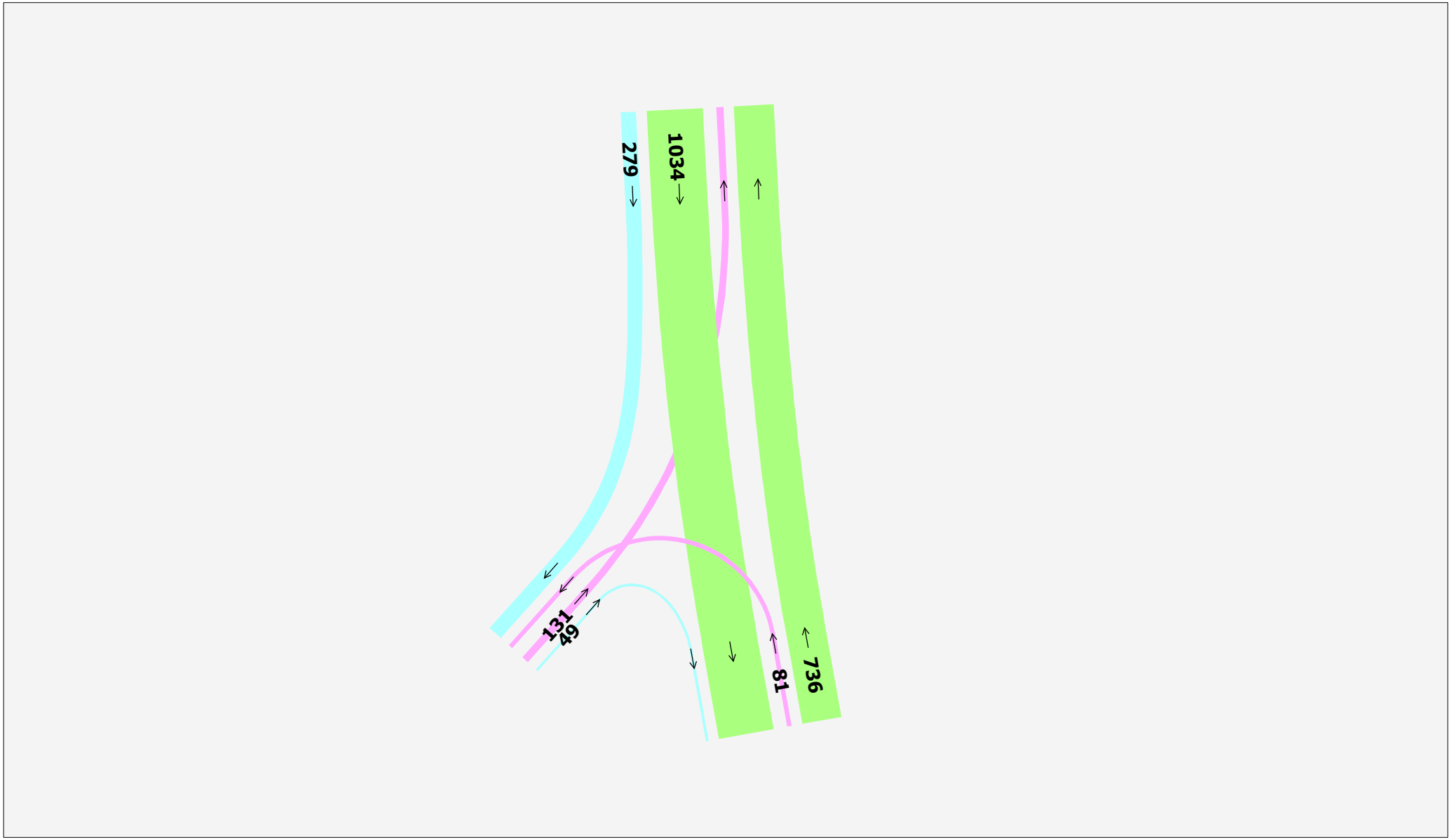

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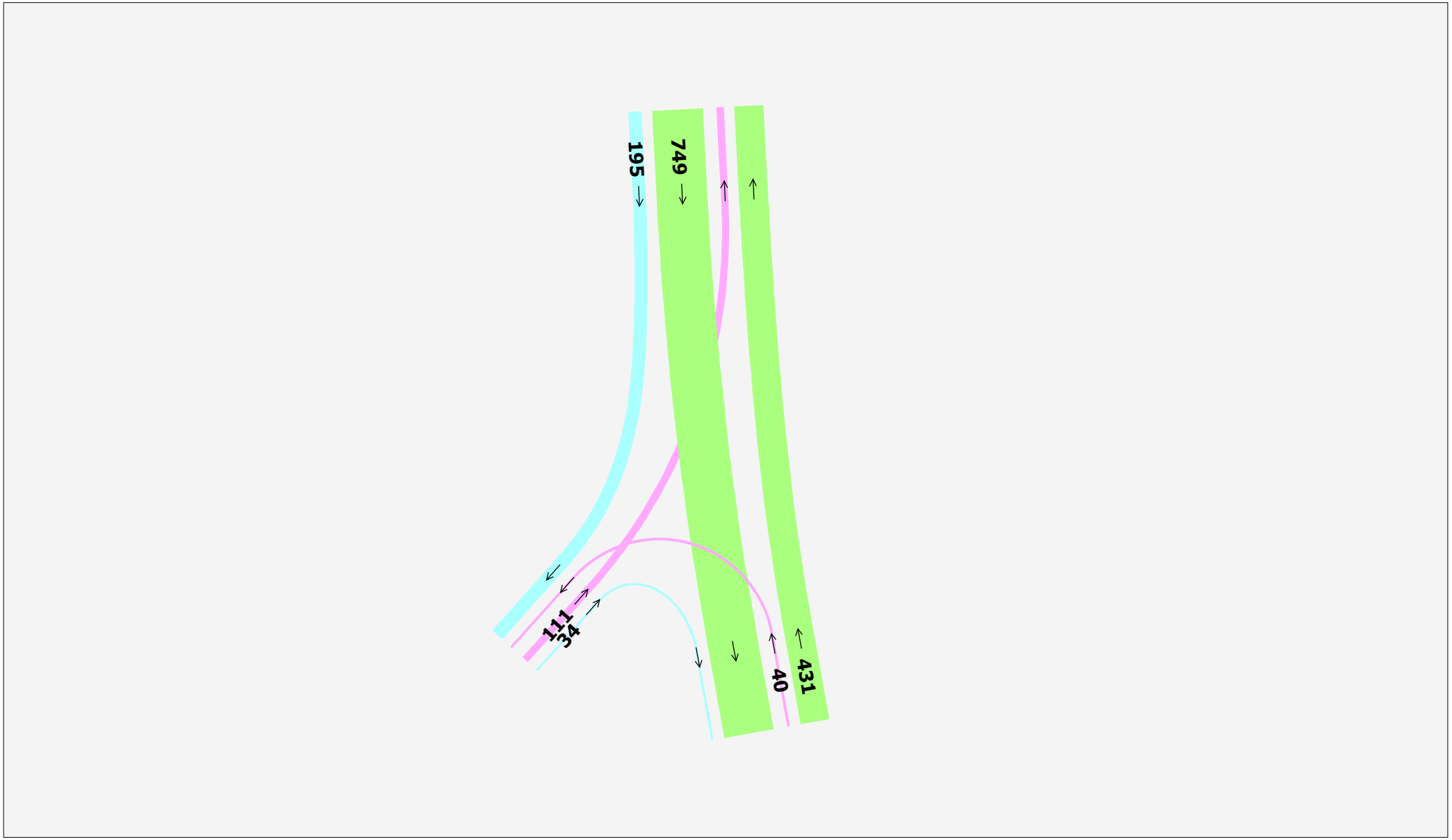

Redland 22:00

2015

Redland 23:00

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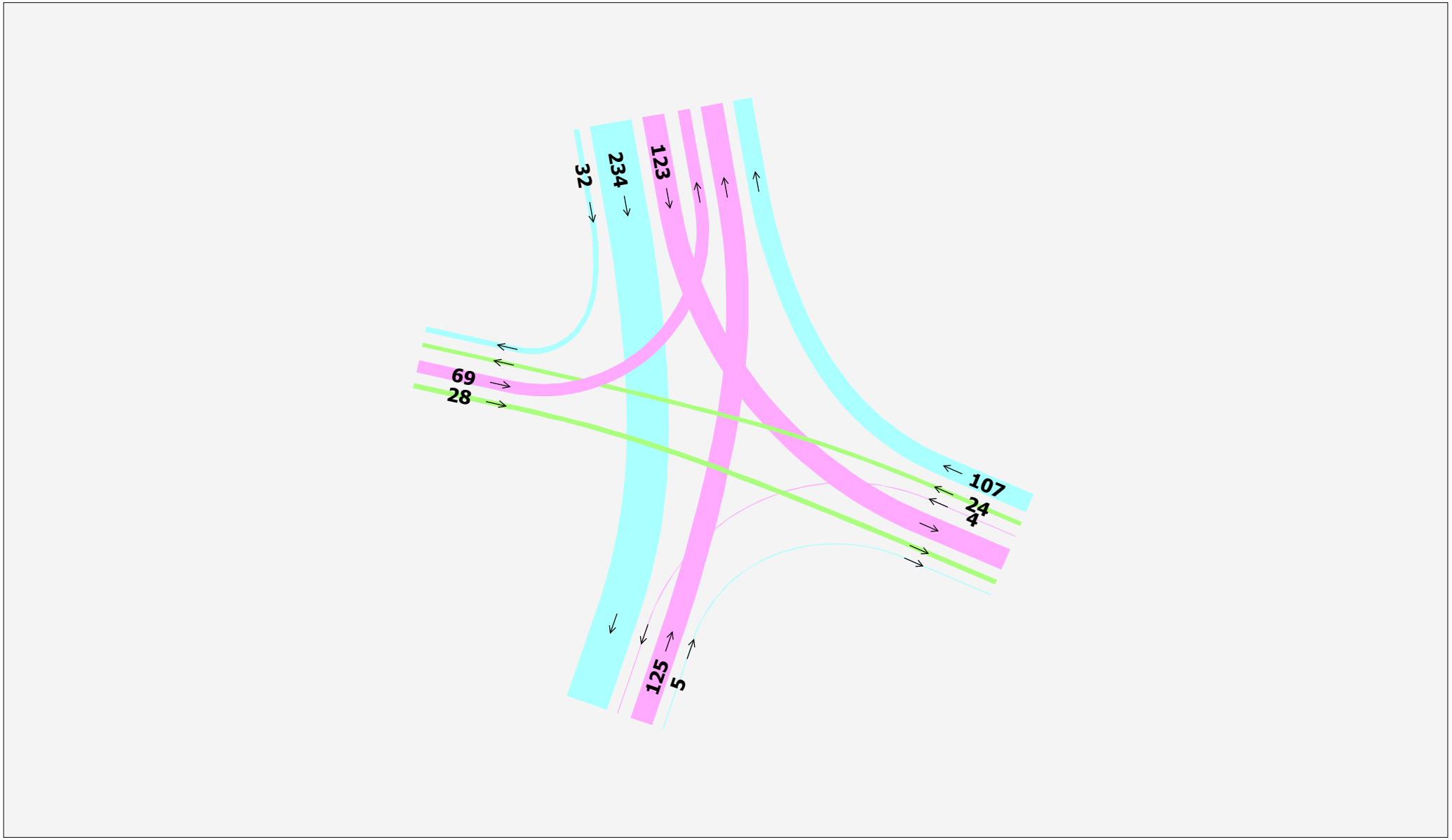

Beavercreek 0:00

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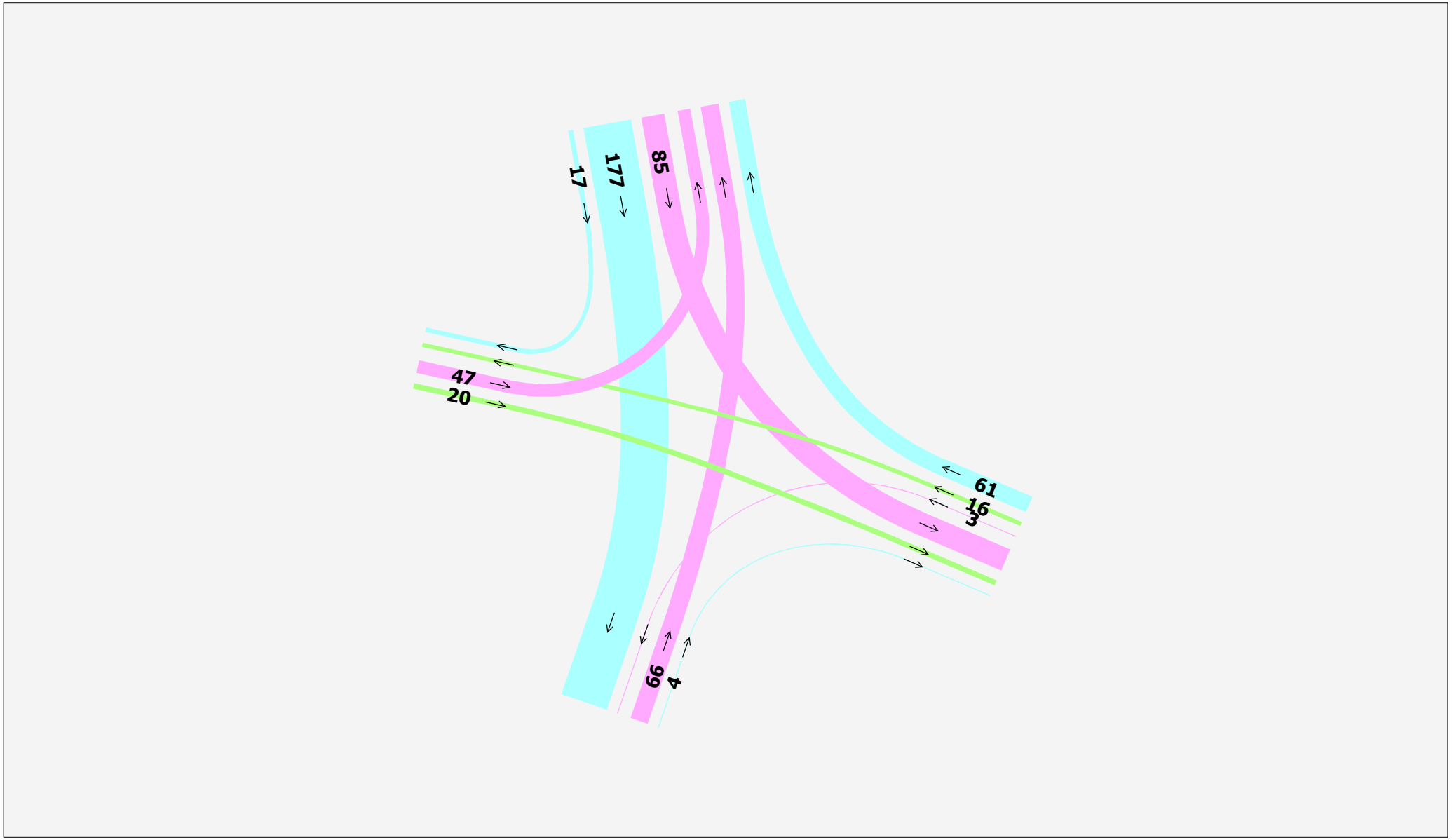

Beavercreek 1:00

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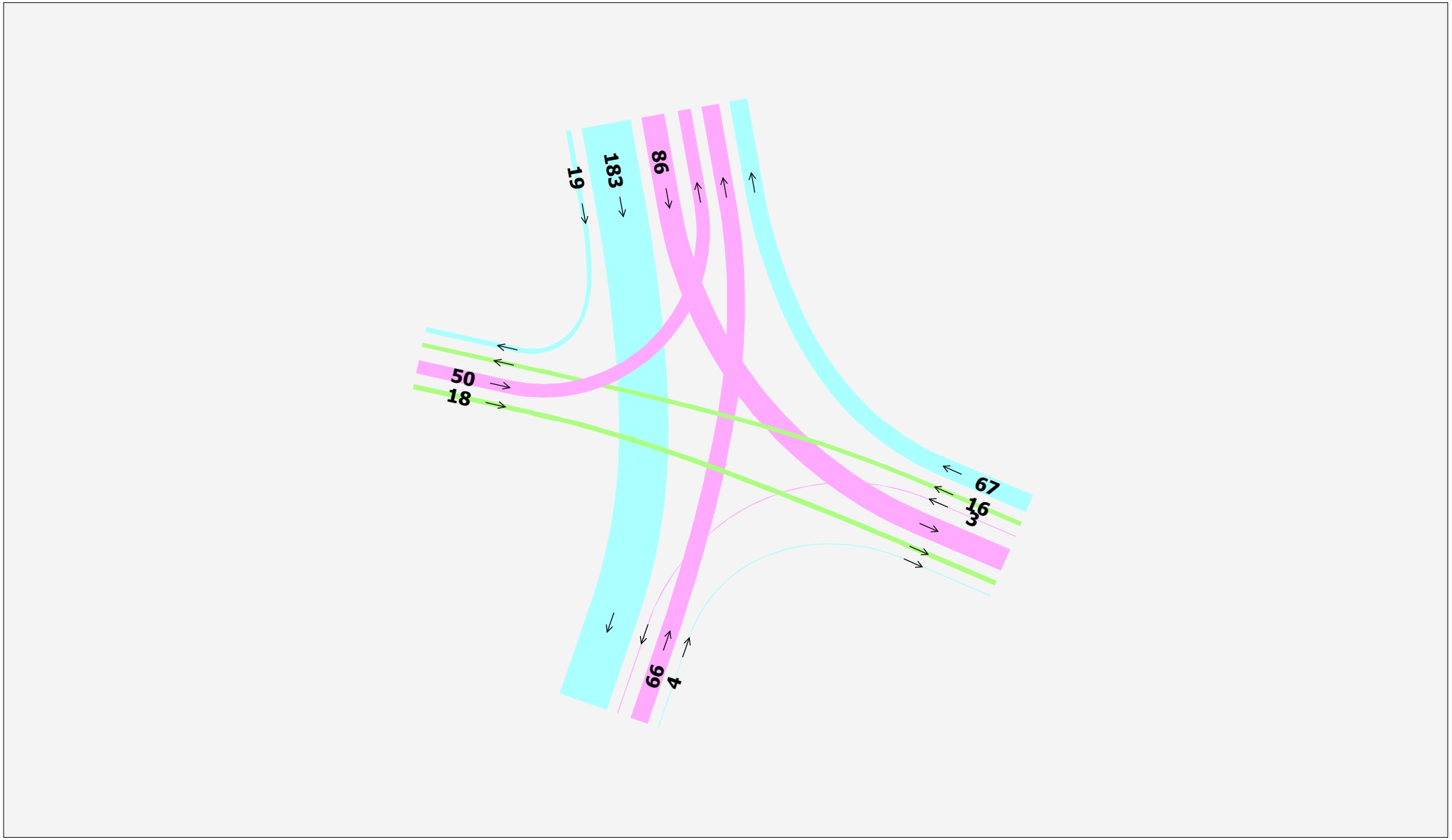

Beavercreek 2:00

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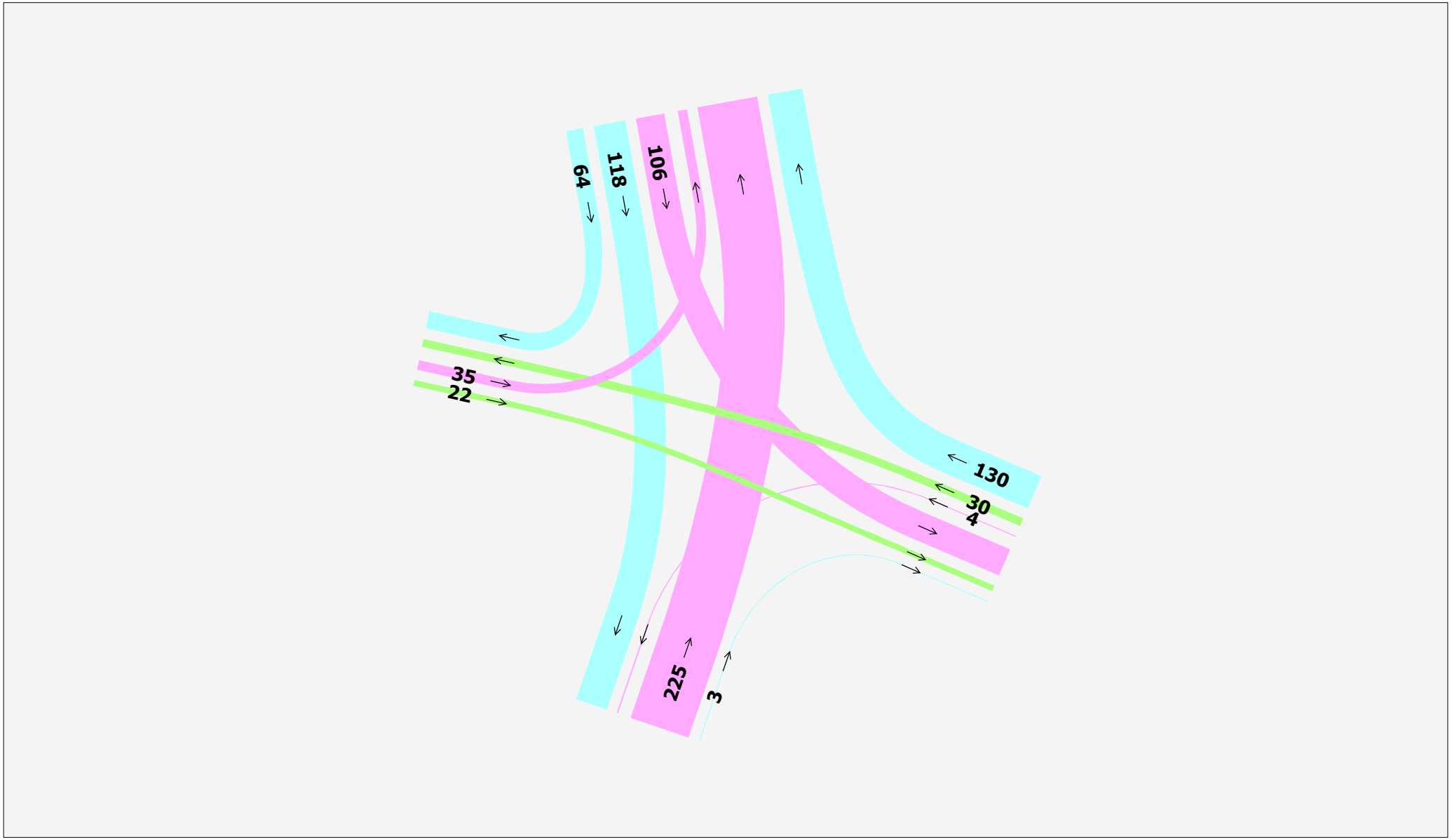

Beavercreek 3:00

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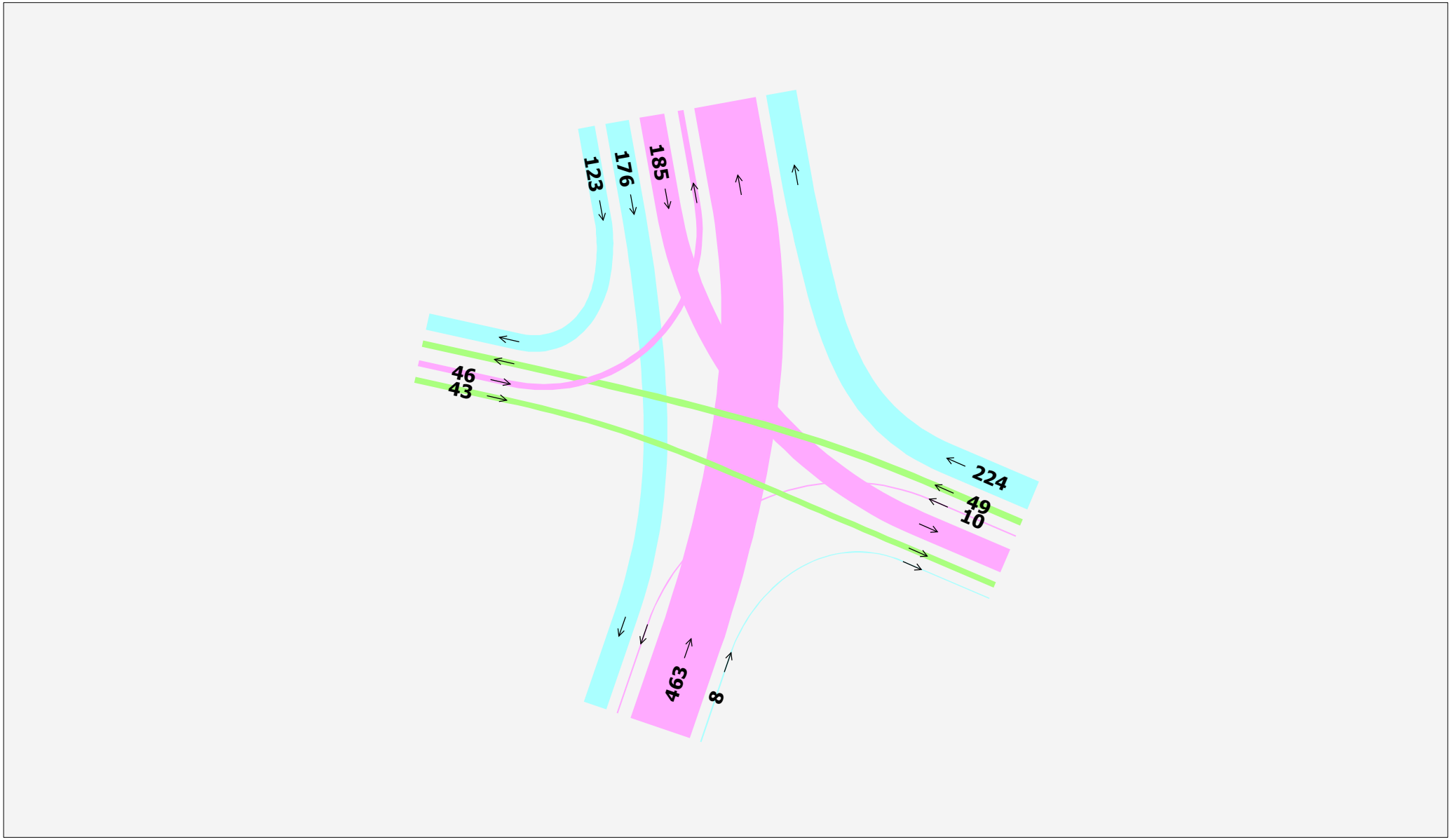

Beavercreek 4:00

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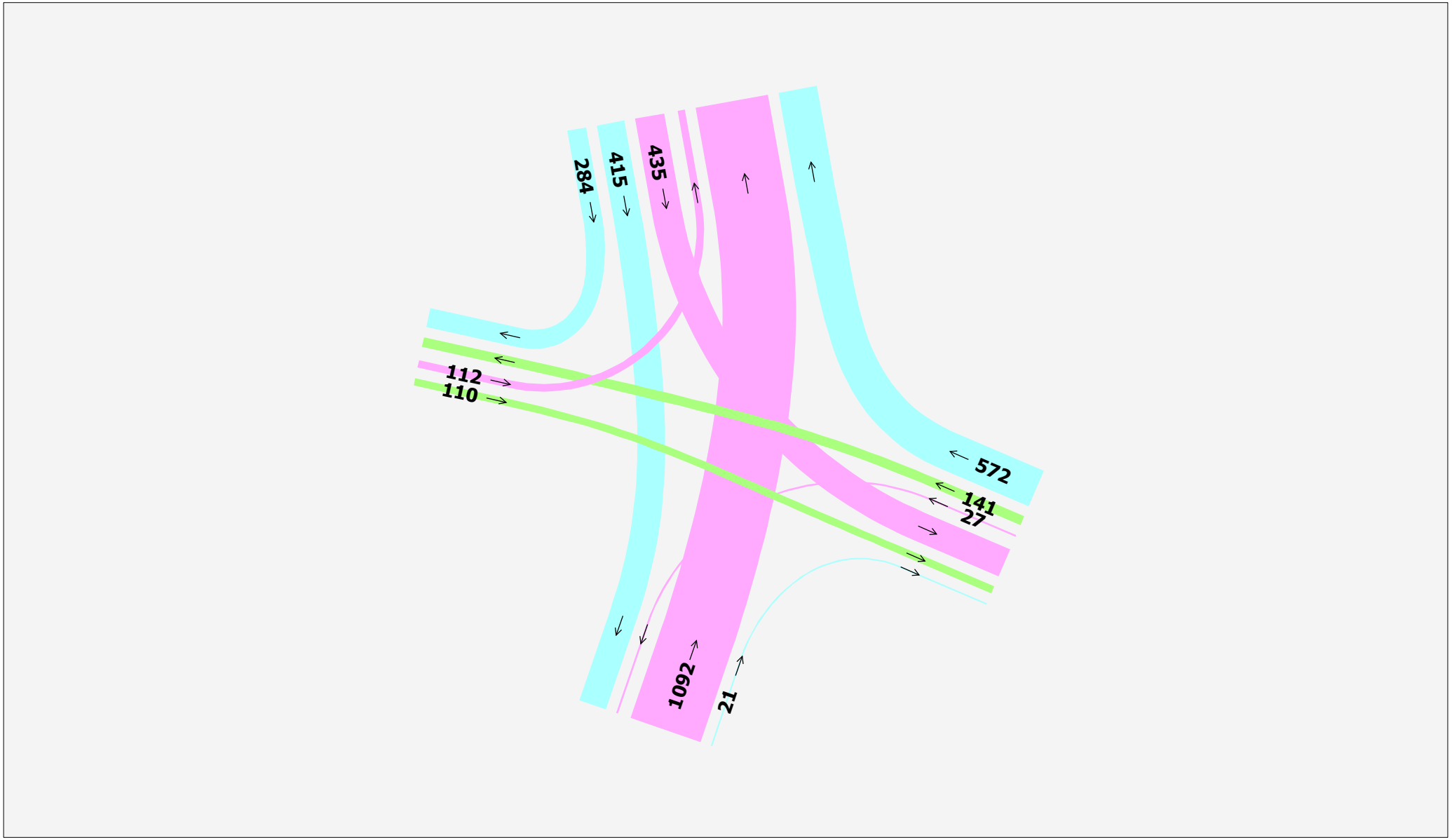

Beavercreek 5:00

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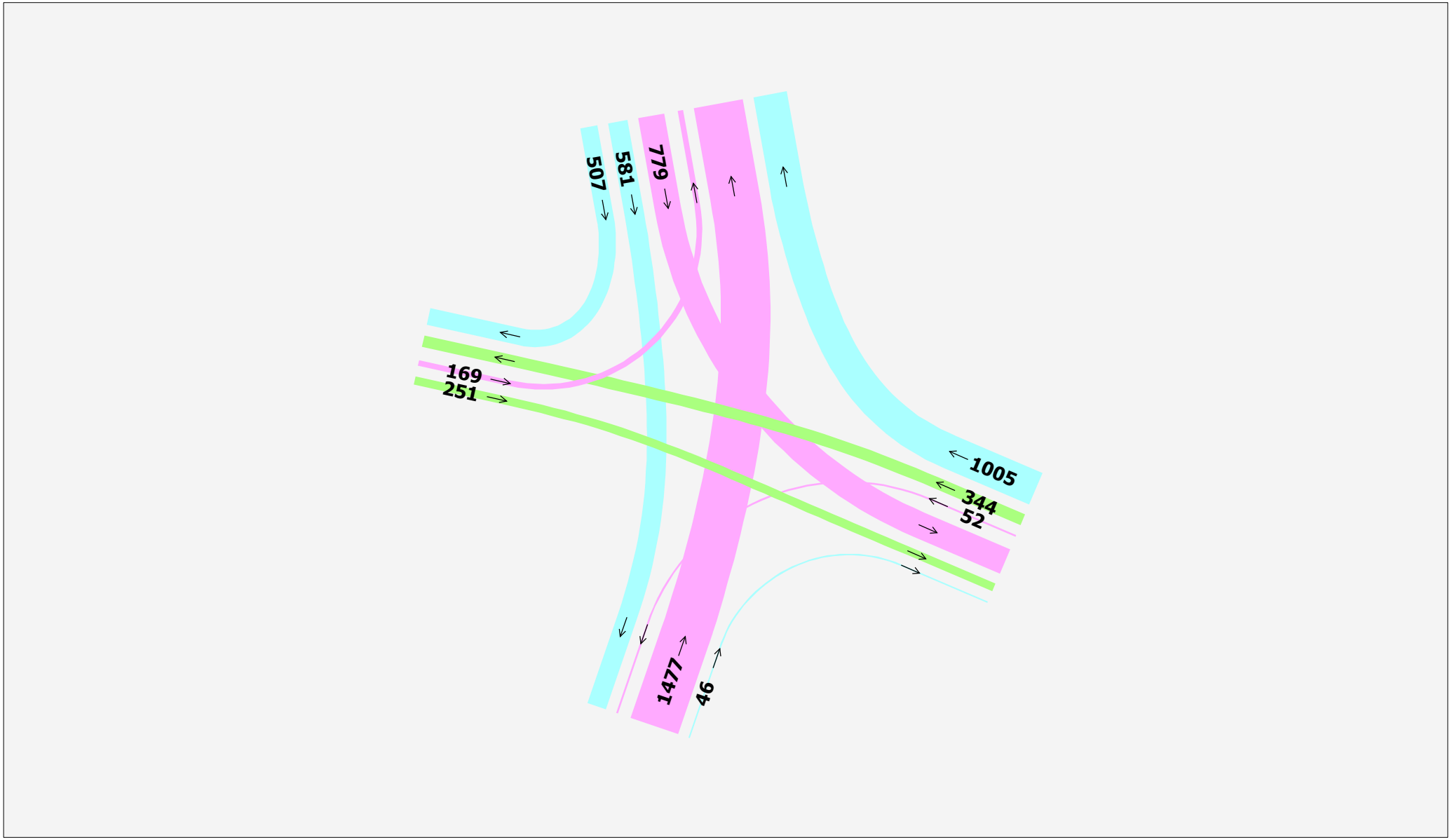

Beavercreek 6:00

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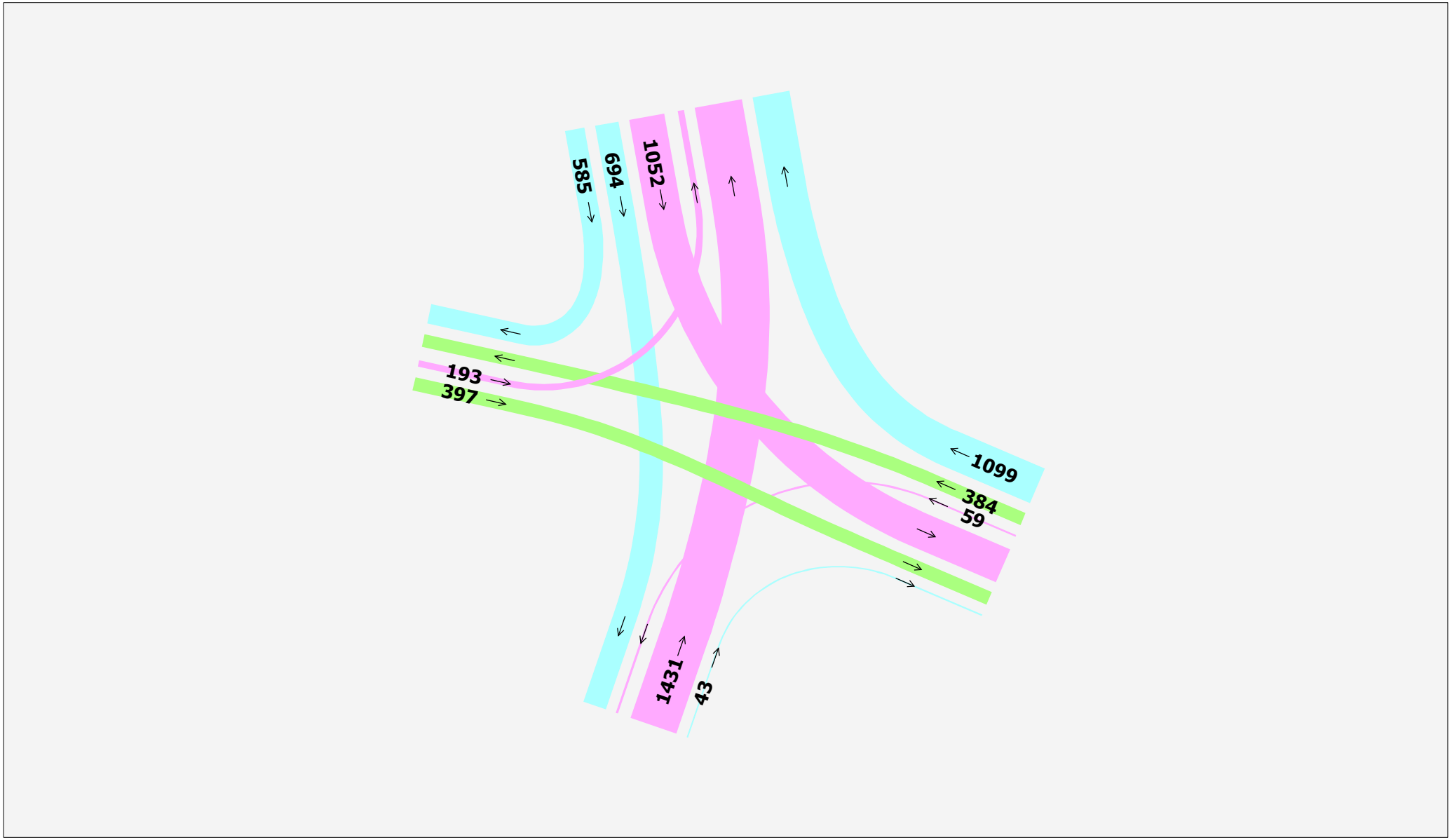

Beavercreek 7:00

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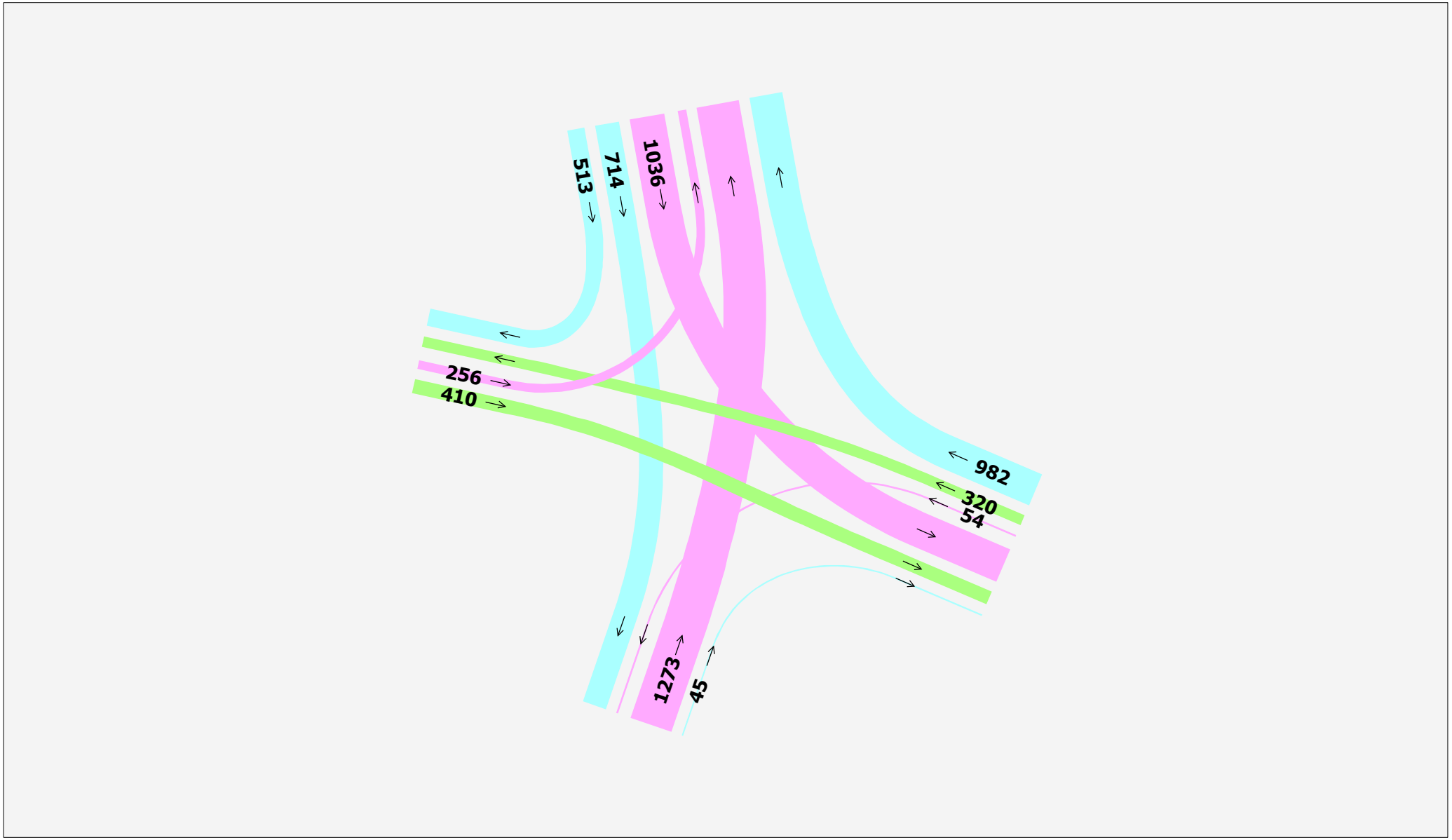

Beavercreek 8:00

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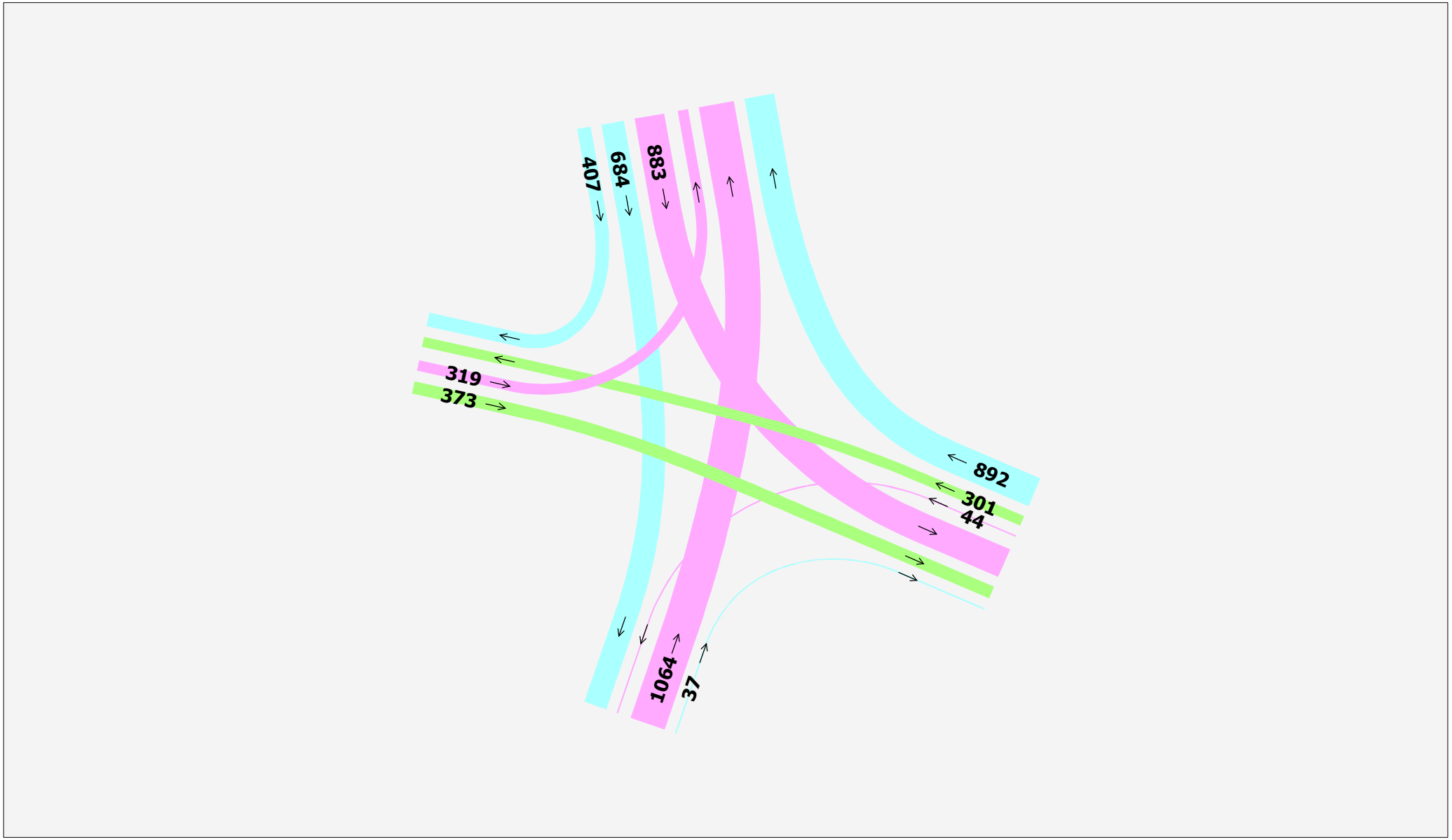

Beavercreek 9:00

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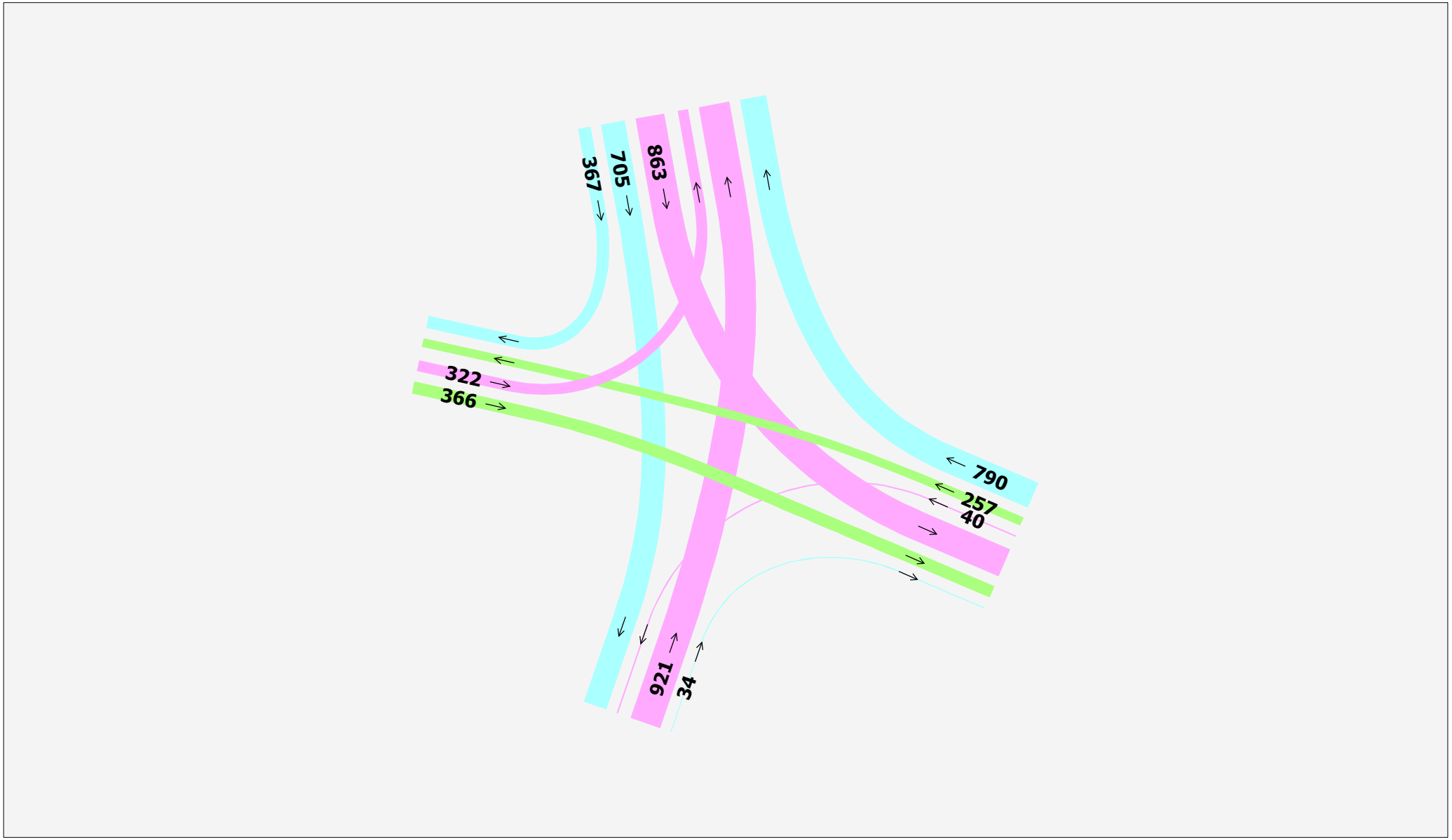

Beavercreek 10:00

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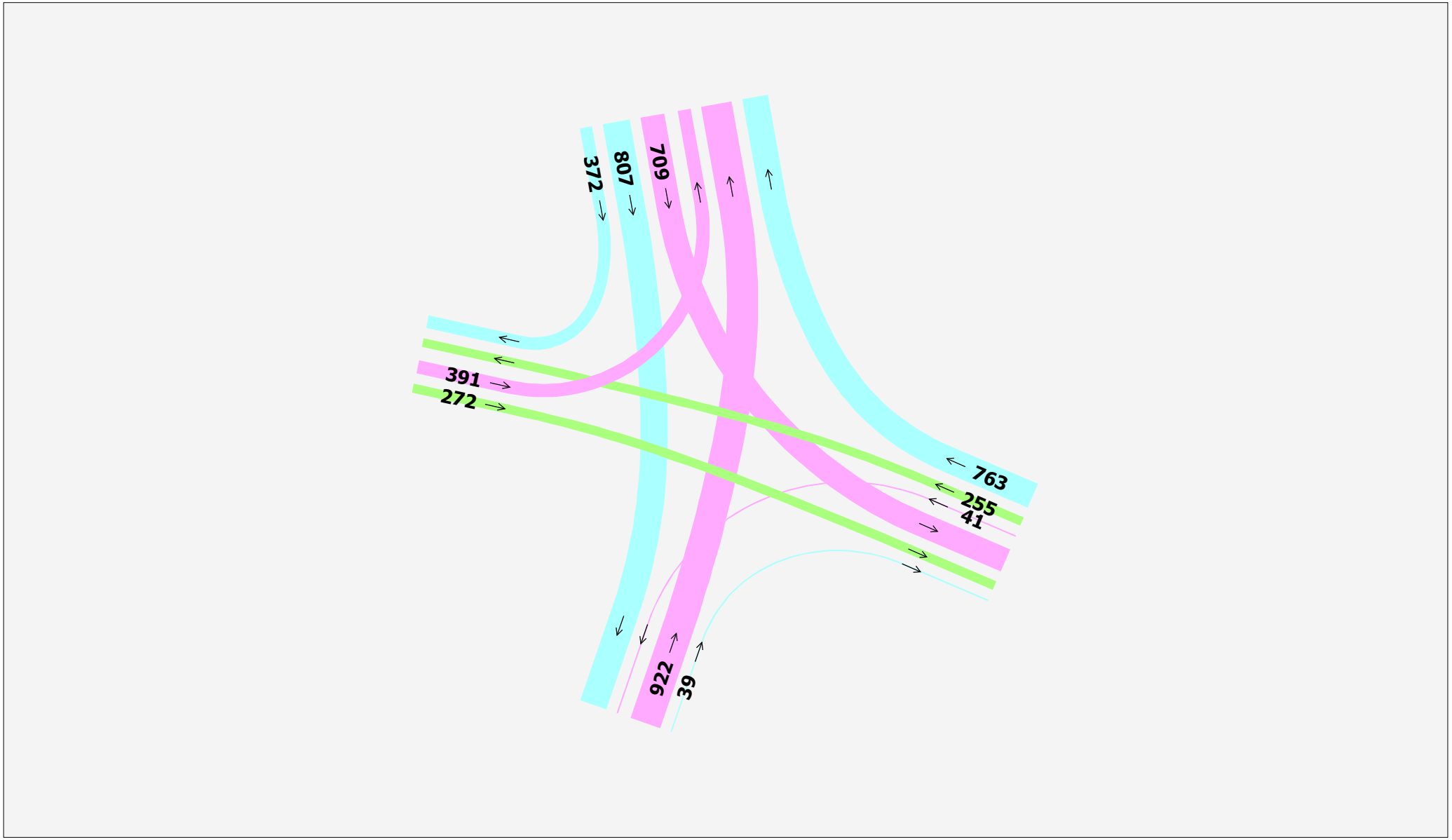

Beavercreek 11:00

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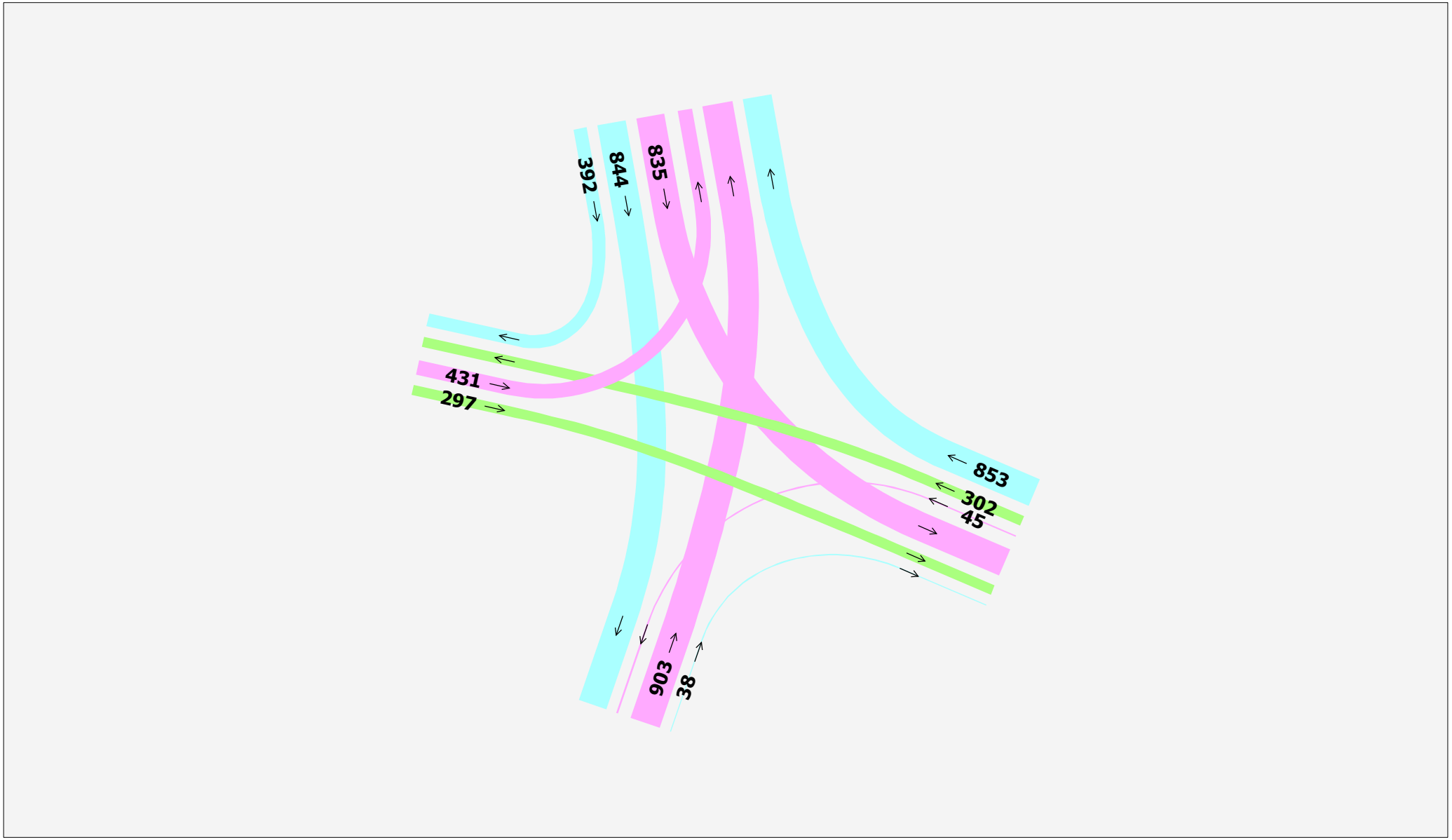

Beavercreek 12:00

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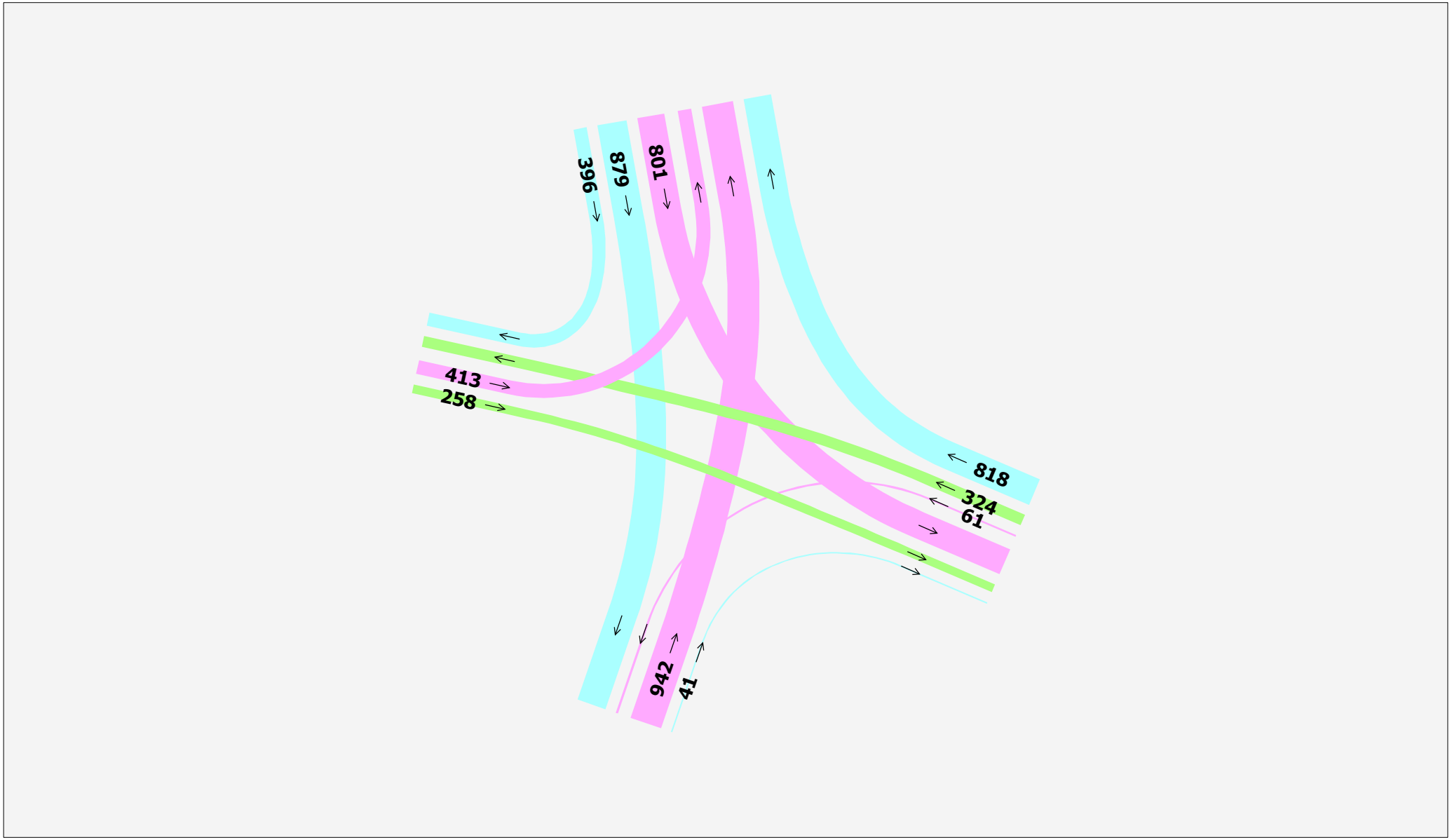

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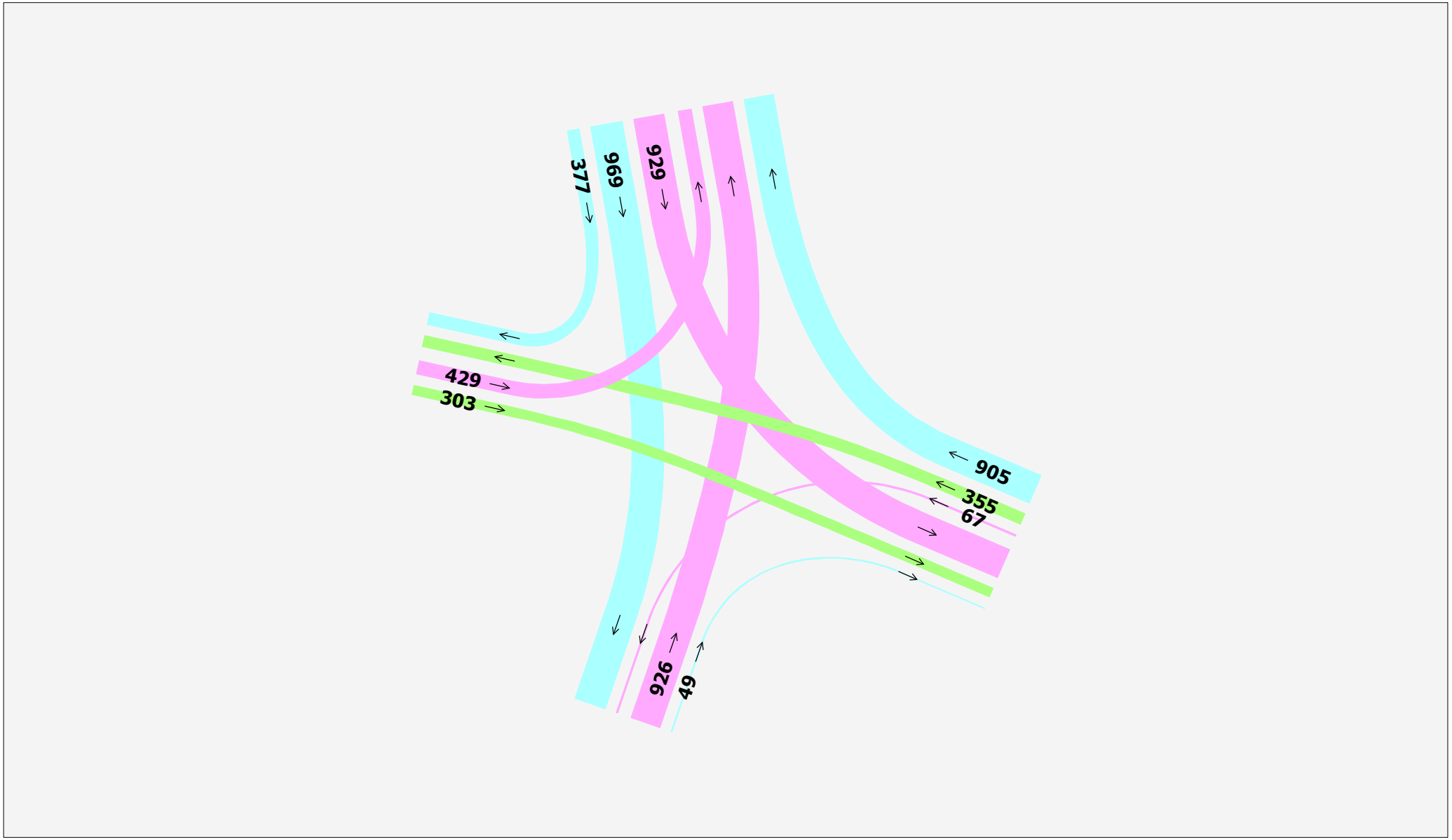

Beavercreek 14:00

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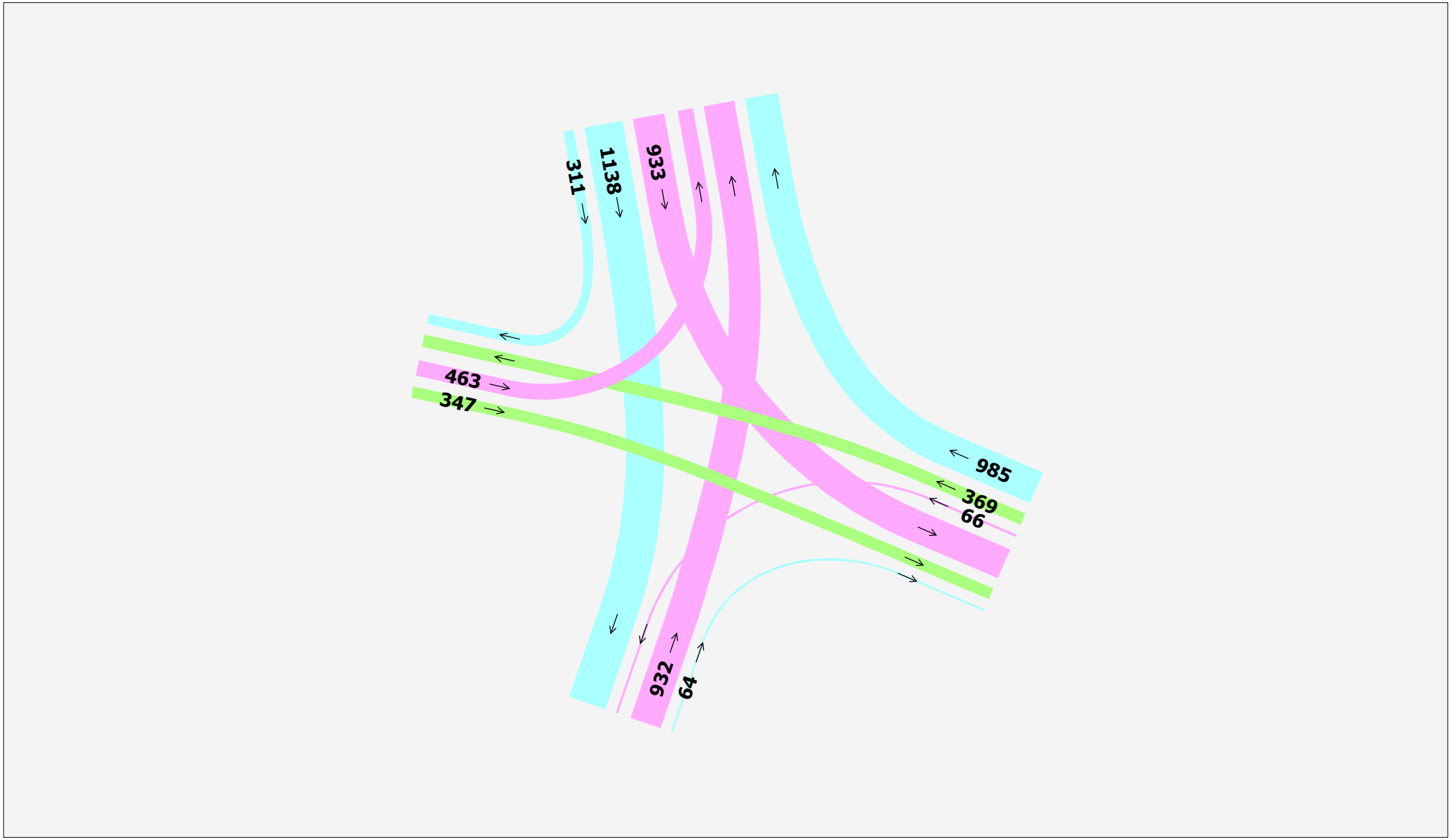

Beavercreek 15:00

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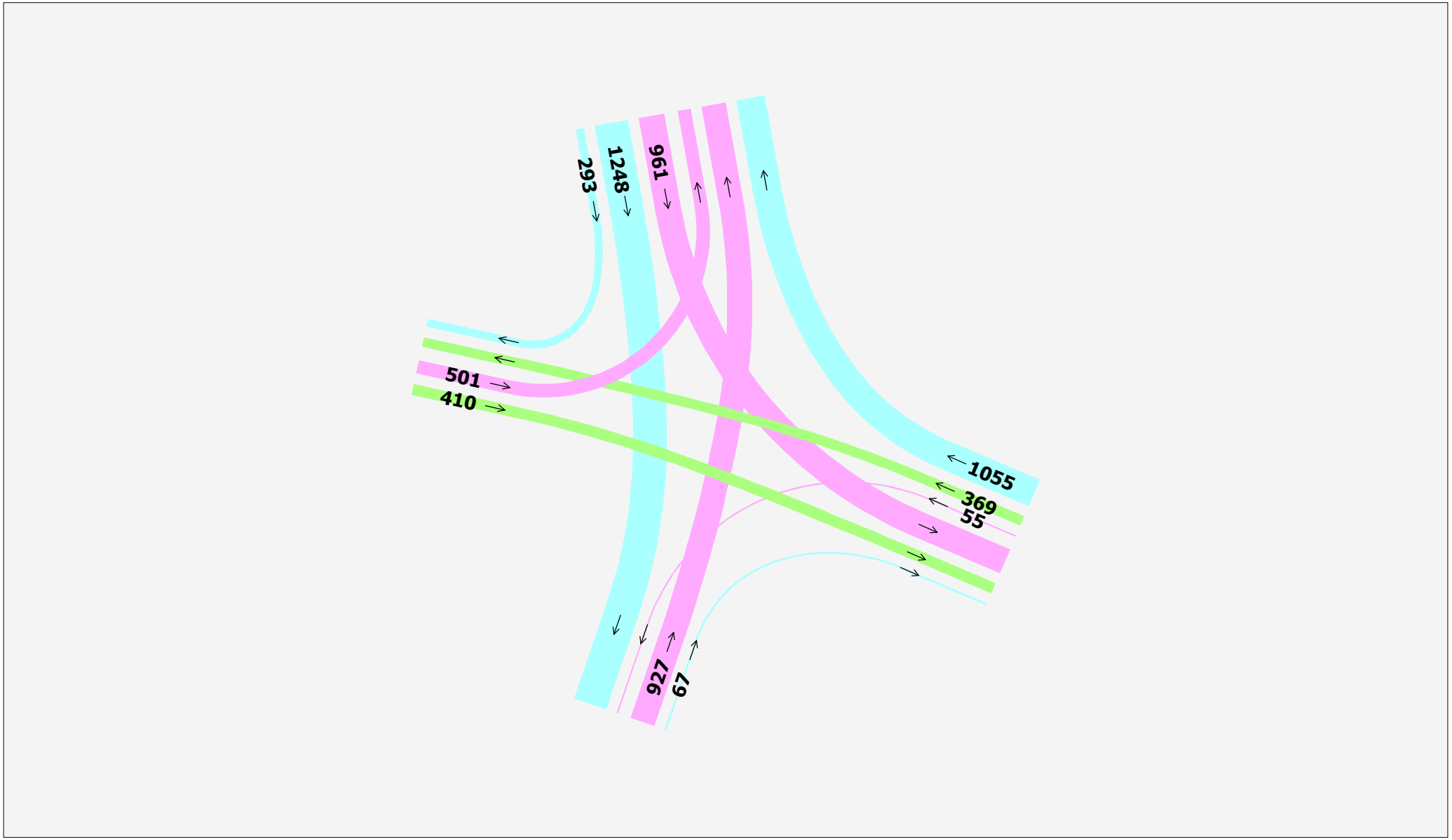

Beavercreek 16:00

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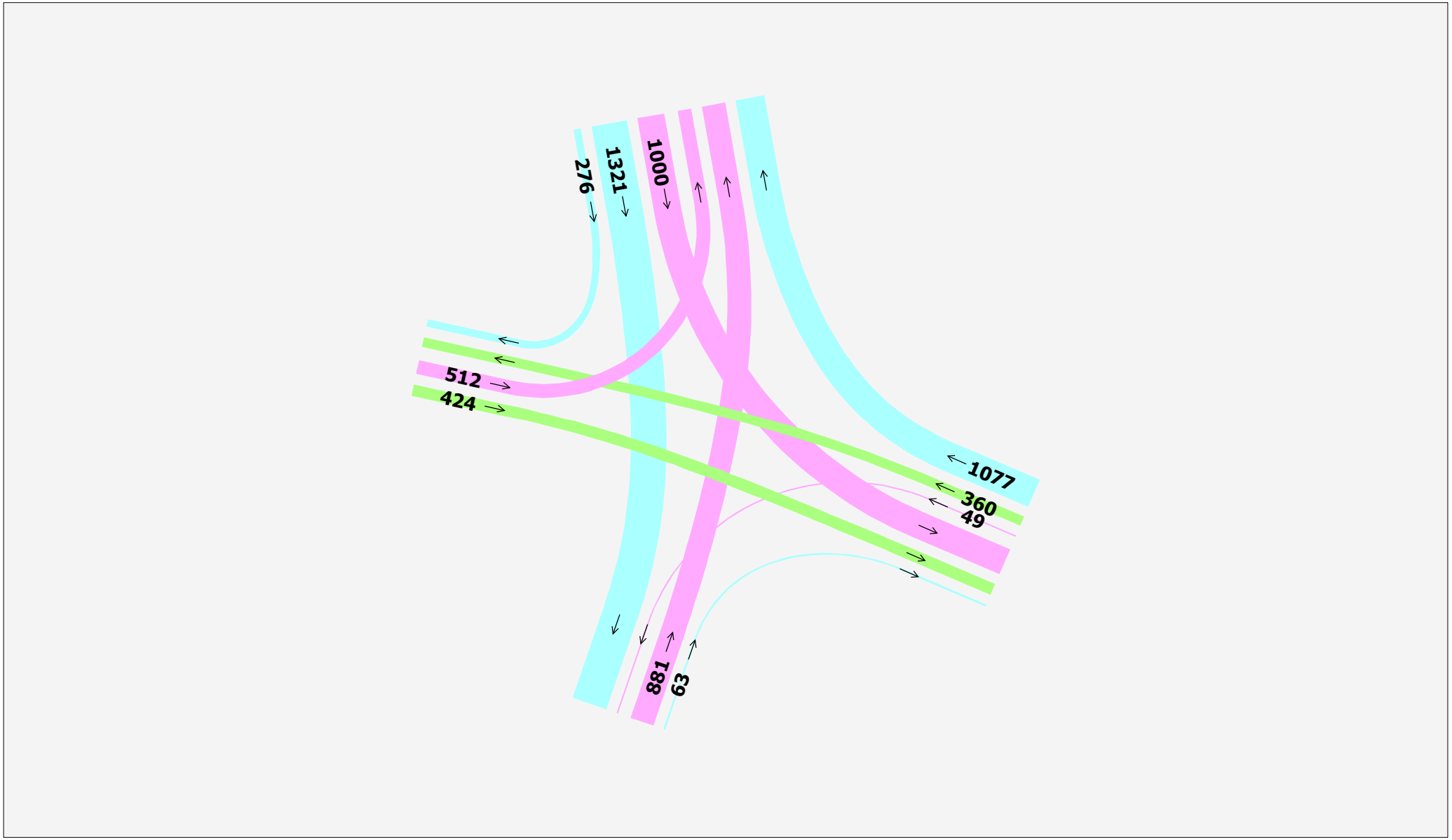

Beavercreek 17:00

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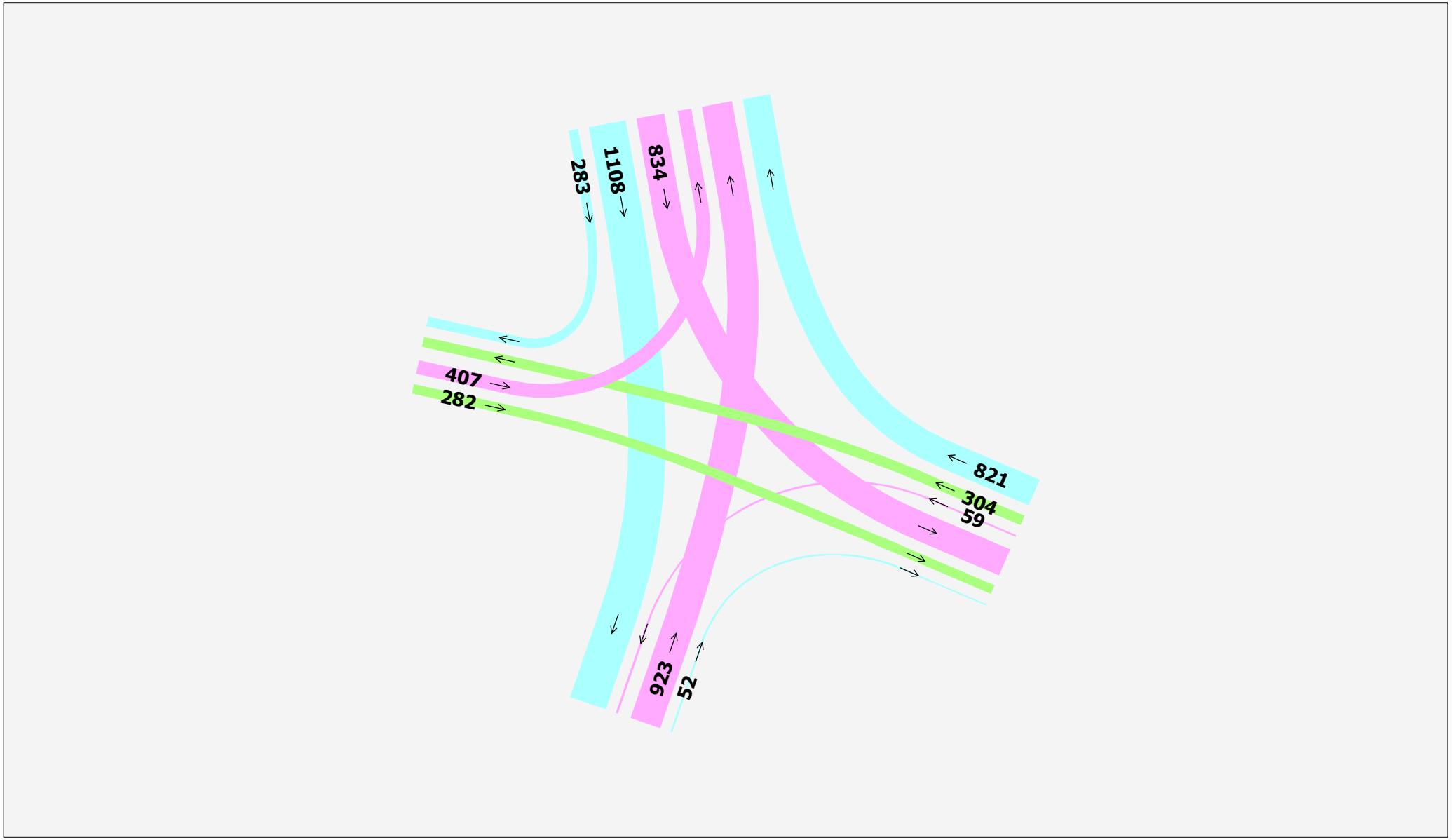

Beavercreek 18:00

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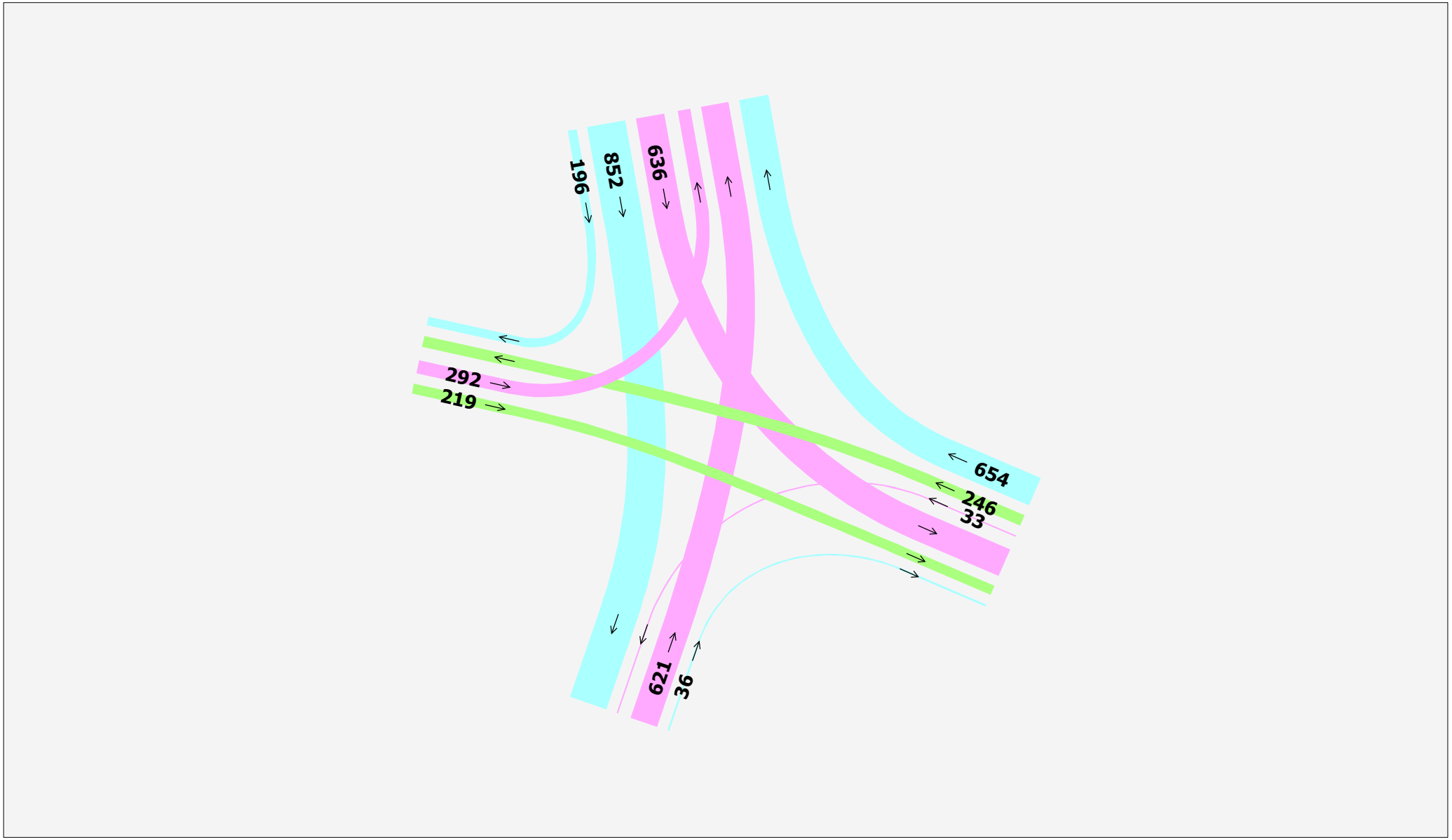

Beavercreek 19:00

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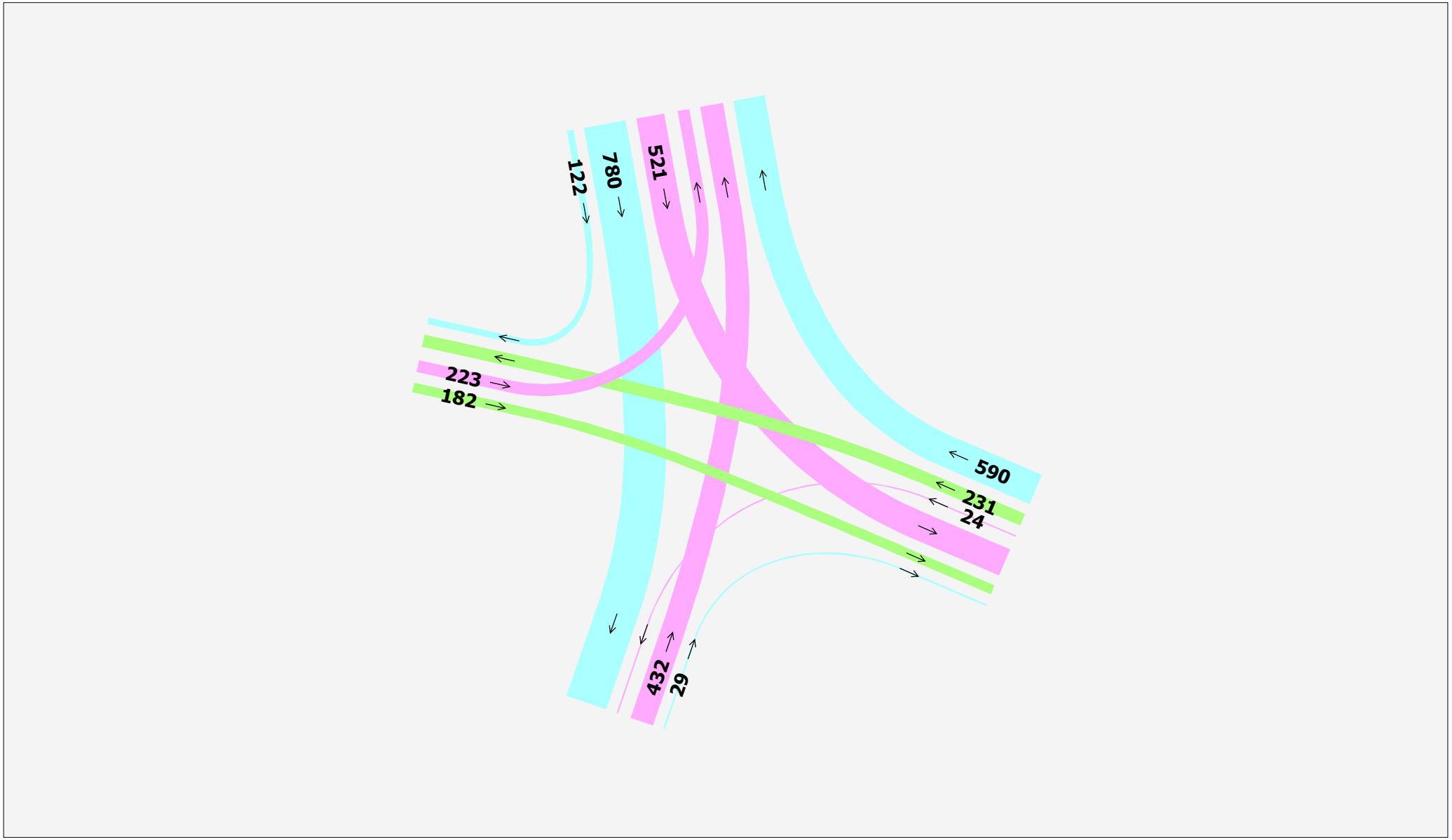

Beavercreek 20:00

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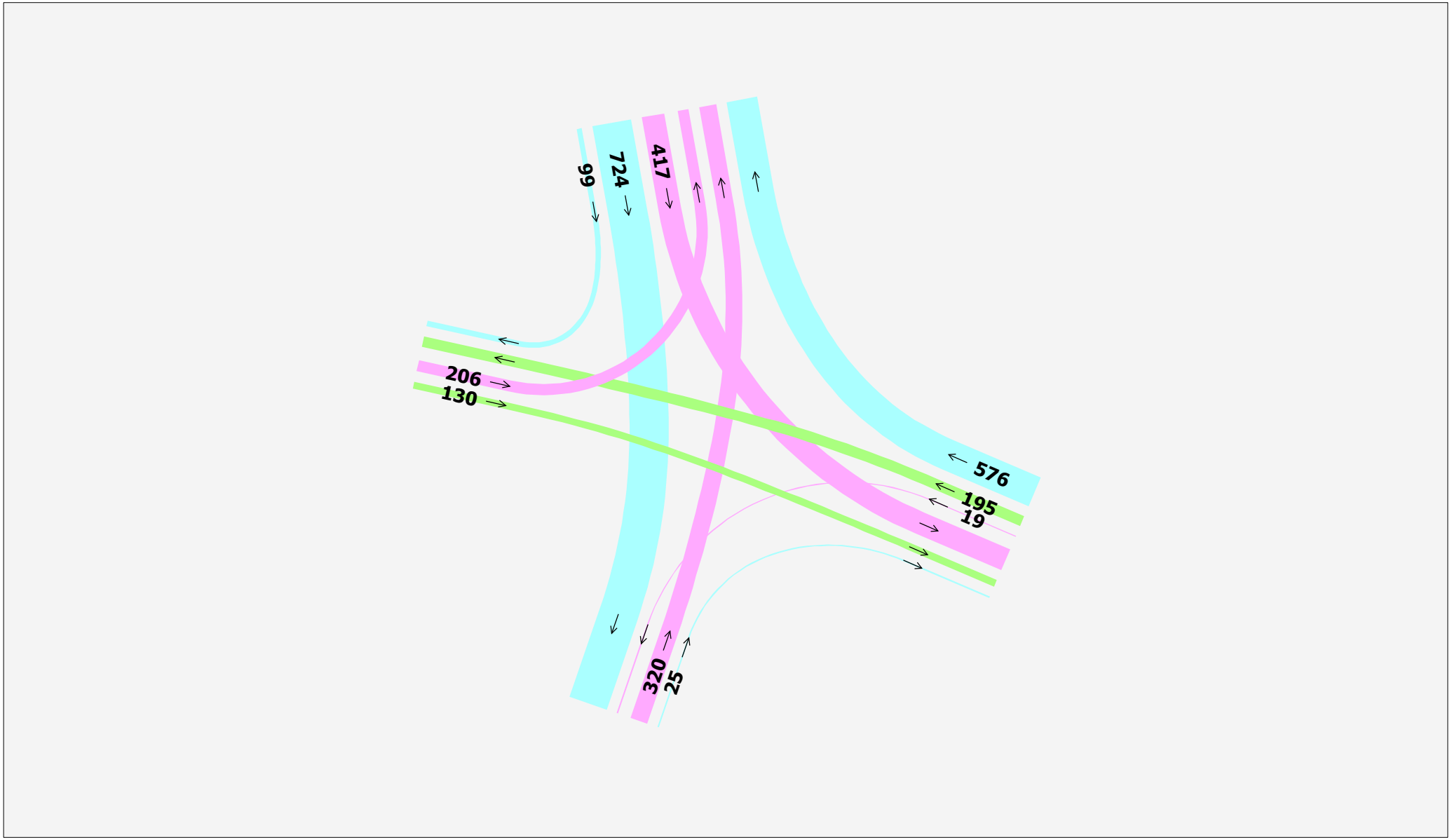

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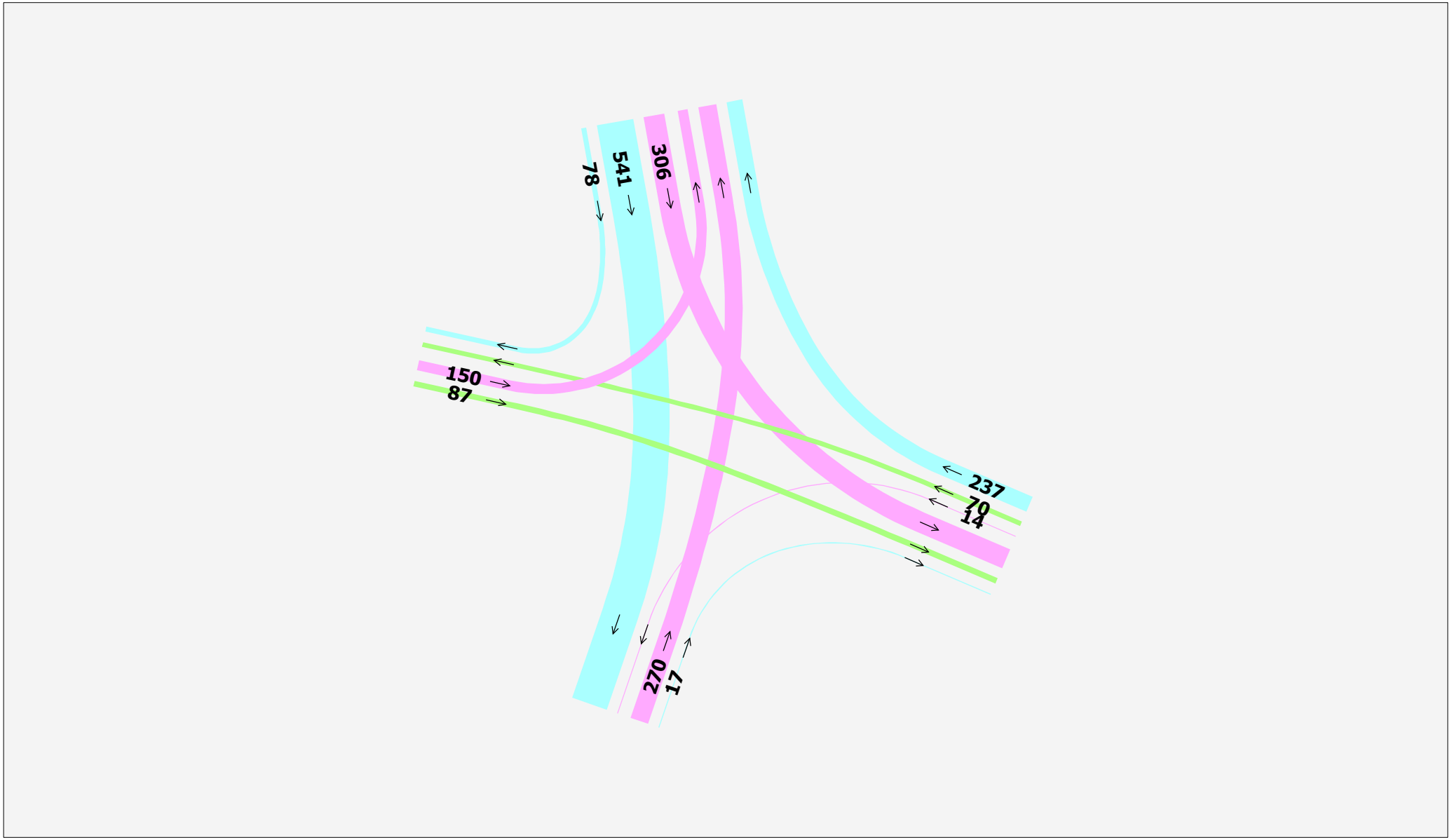

Beavercreek 22:00

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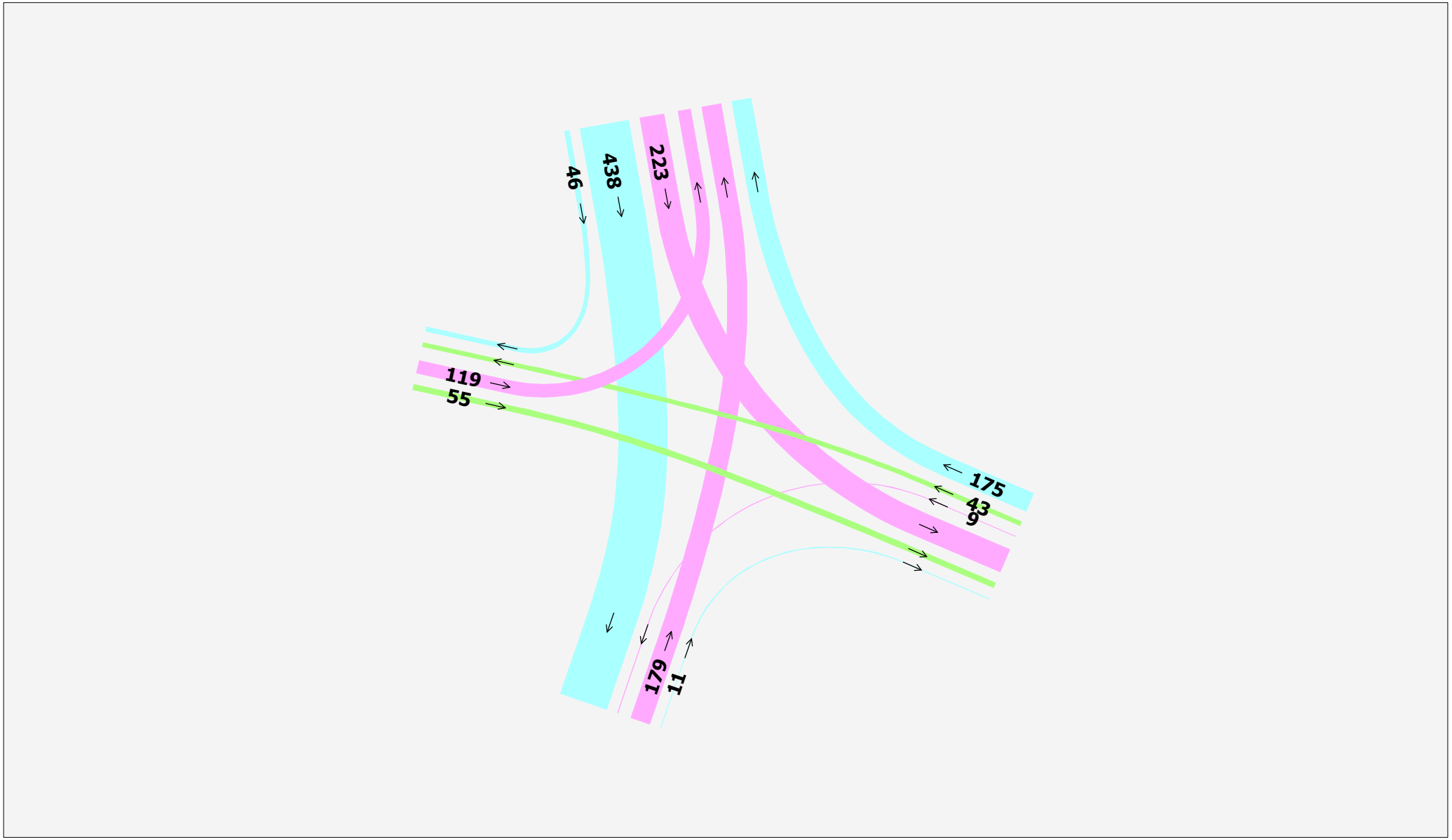

Beavercreek 23:00

2040

Redland 0:00

2040

Redland 1:00


66
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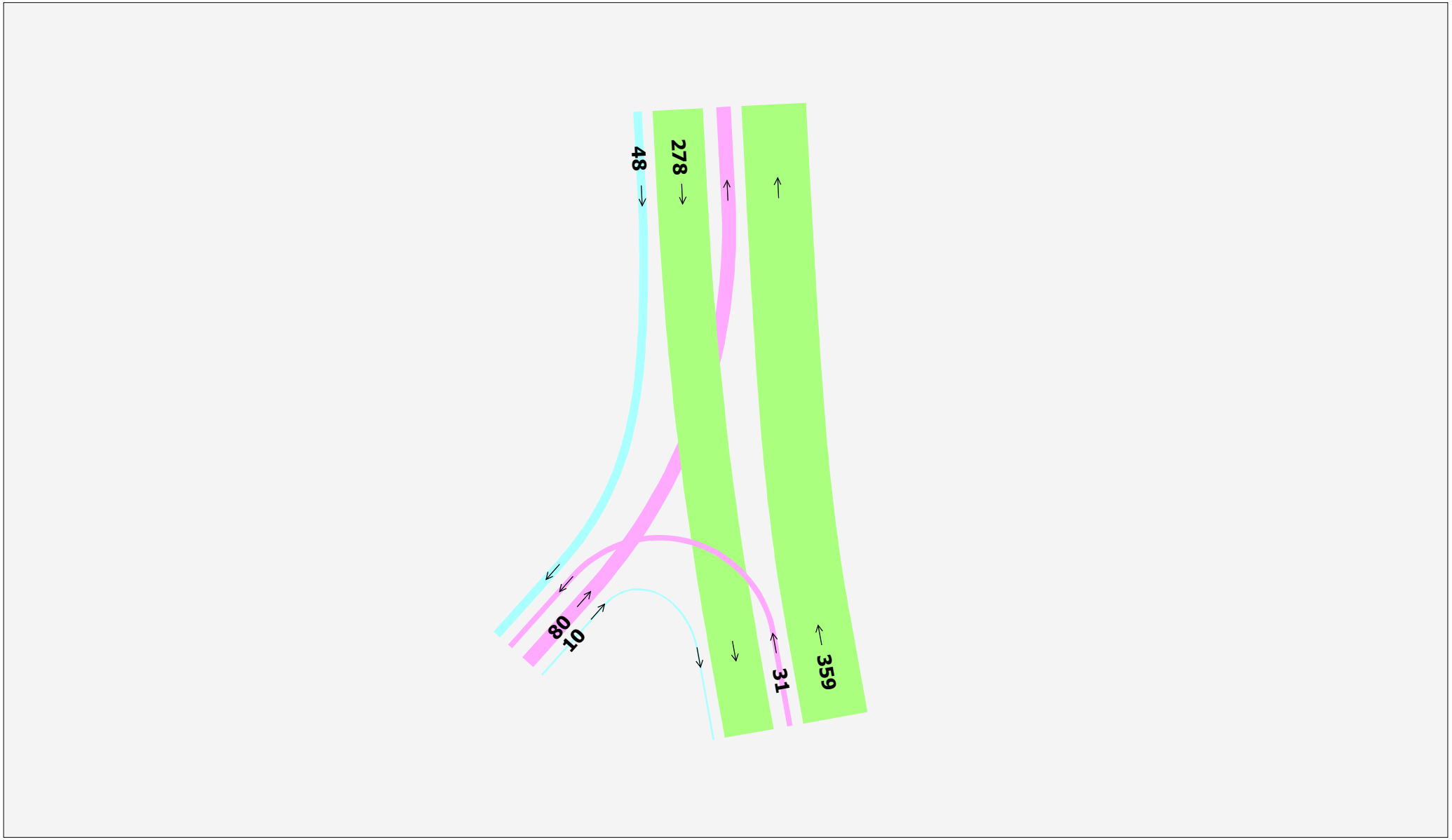
41
14
1

2040



Redland 3:00

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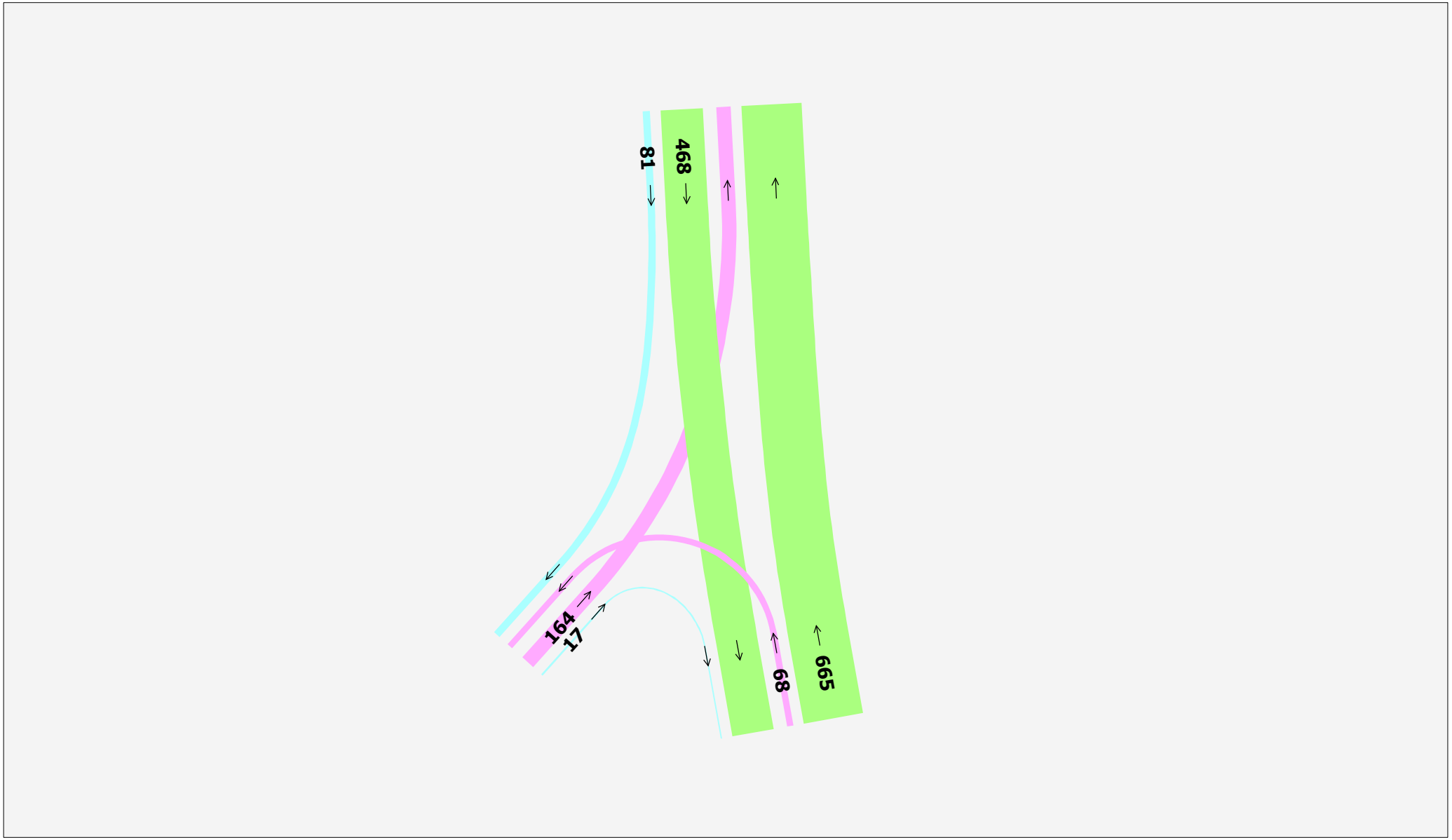
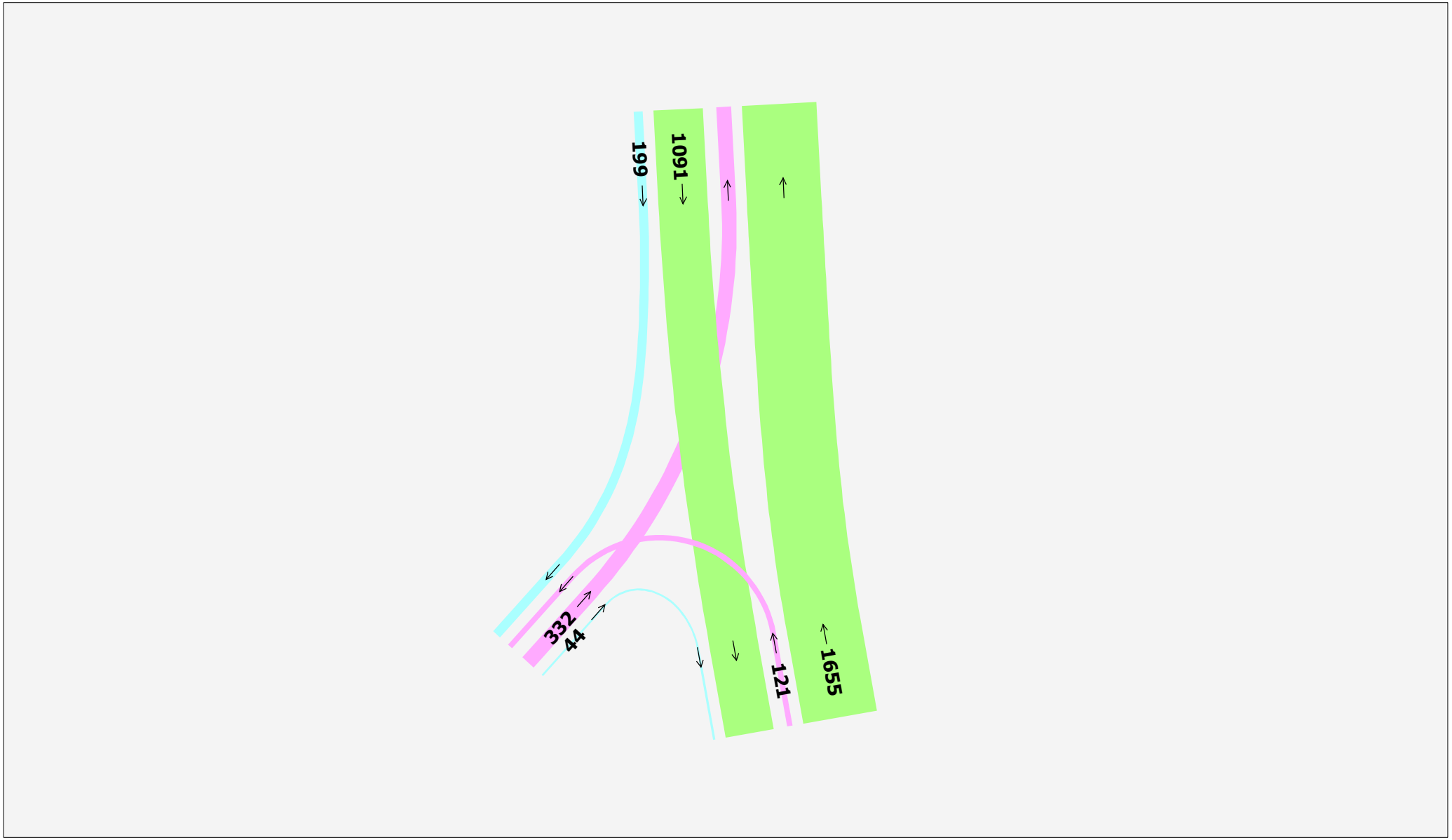


Redland 4:00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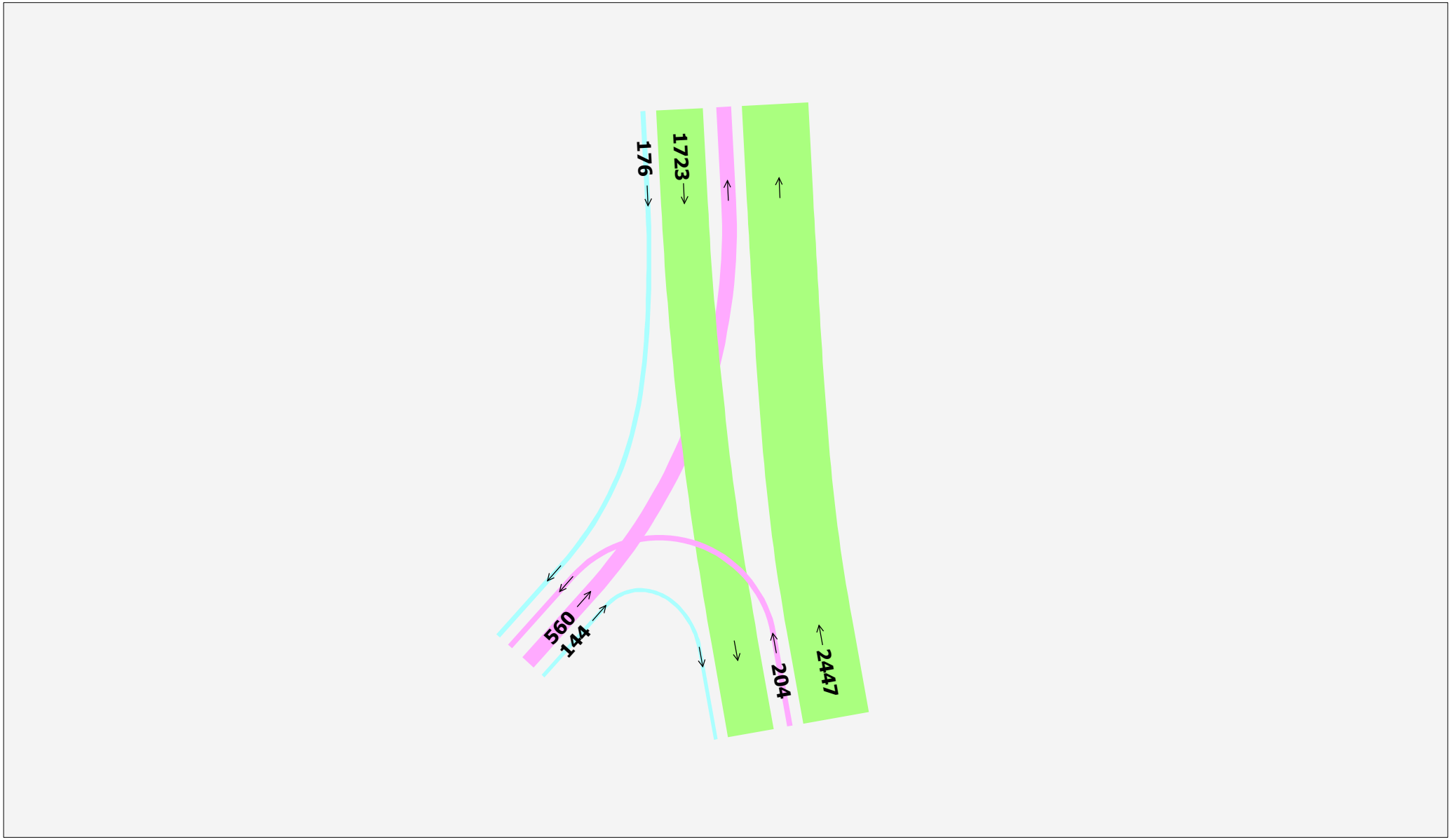

Redland 6:00

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Redland 7:00


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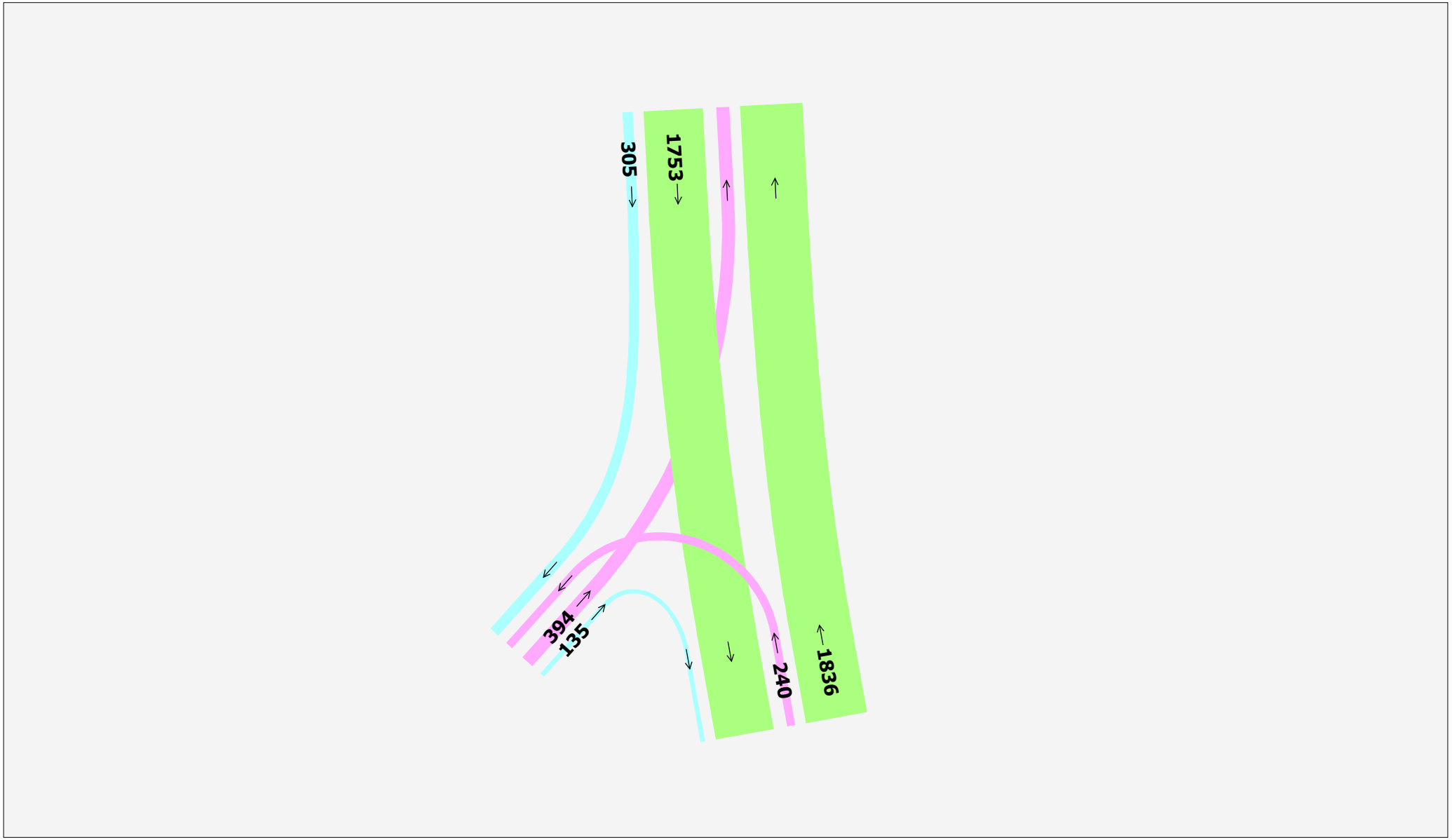
2232

2040

Redland 9:00

2040

Redland 10:00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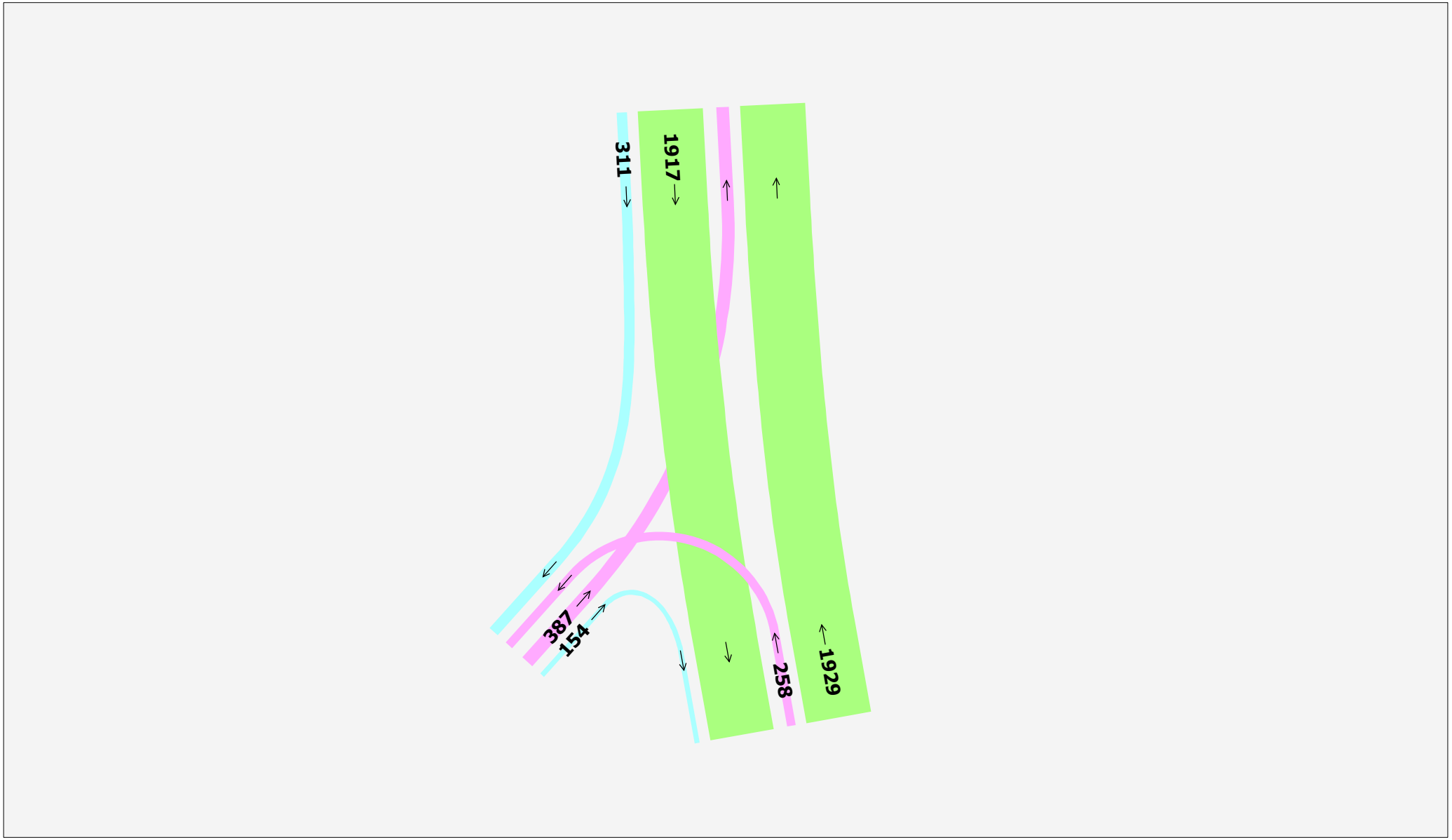

Redland 12:00

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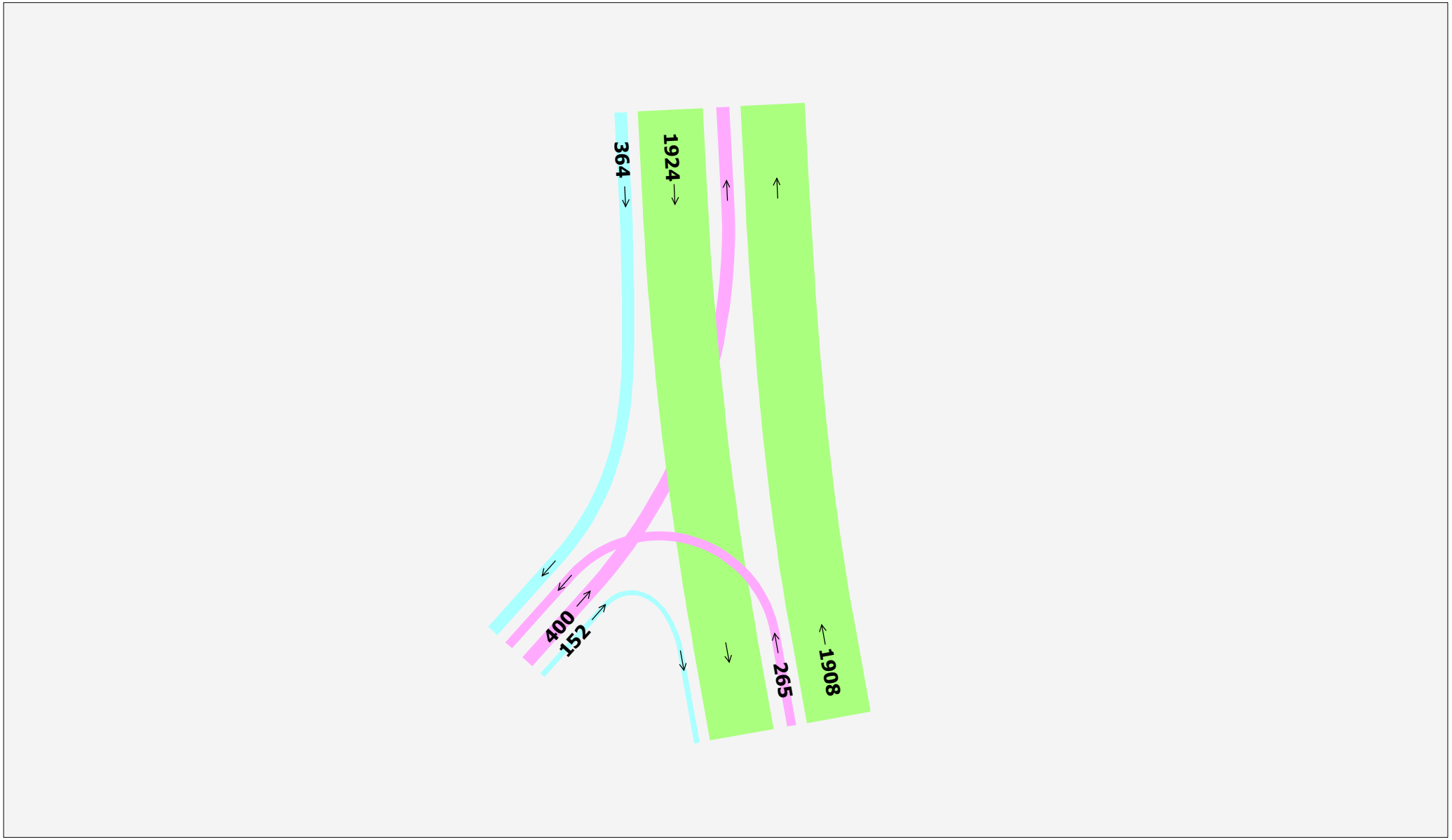

Redland 13:00

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Redland 14:00


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2121

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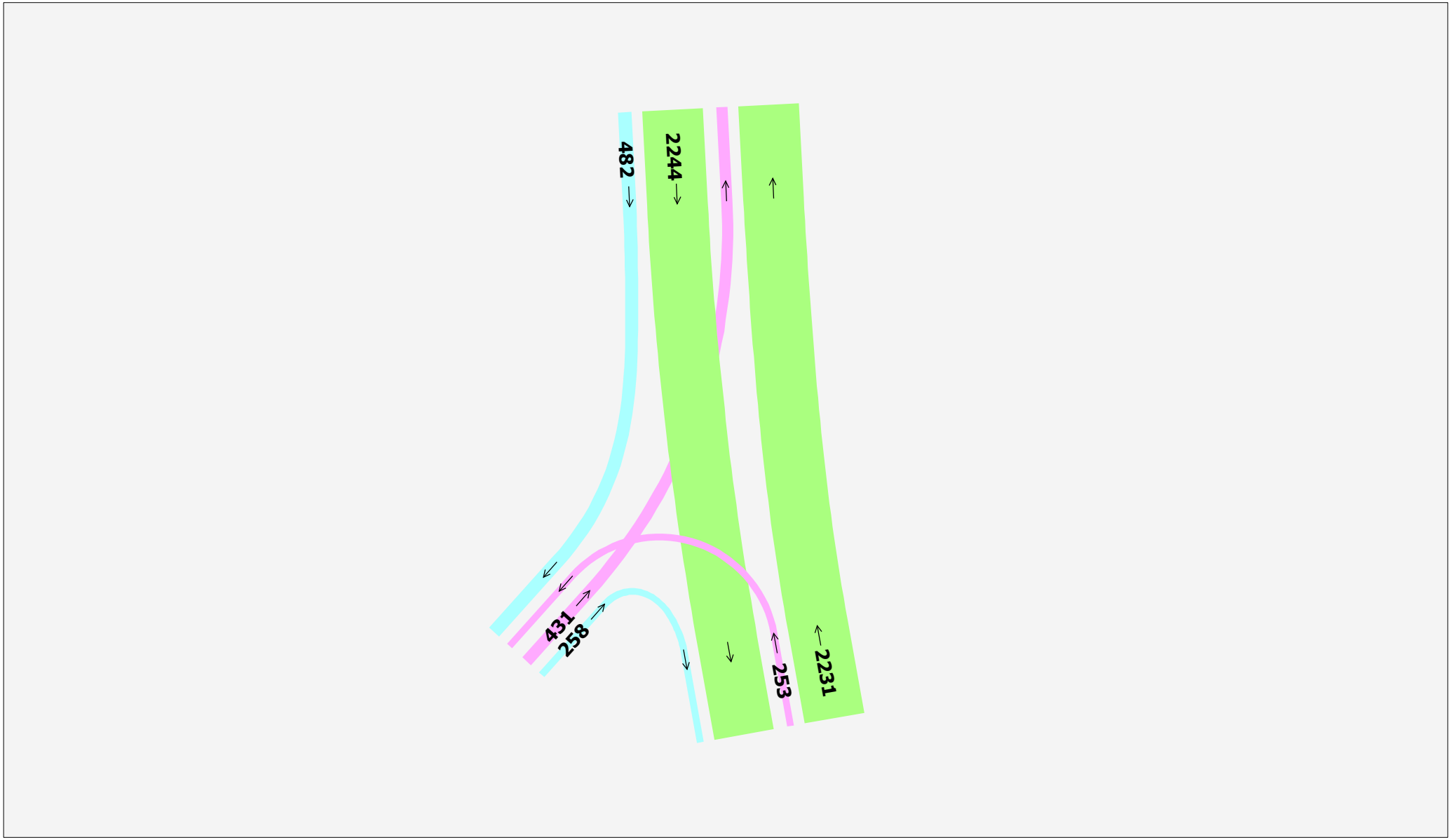

Redland 16:00


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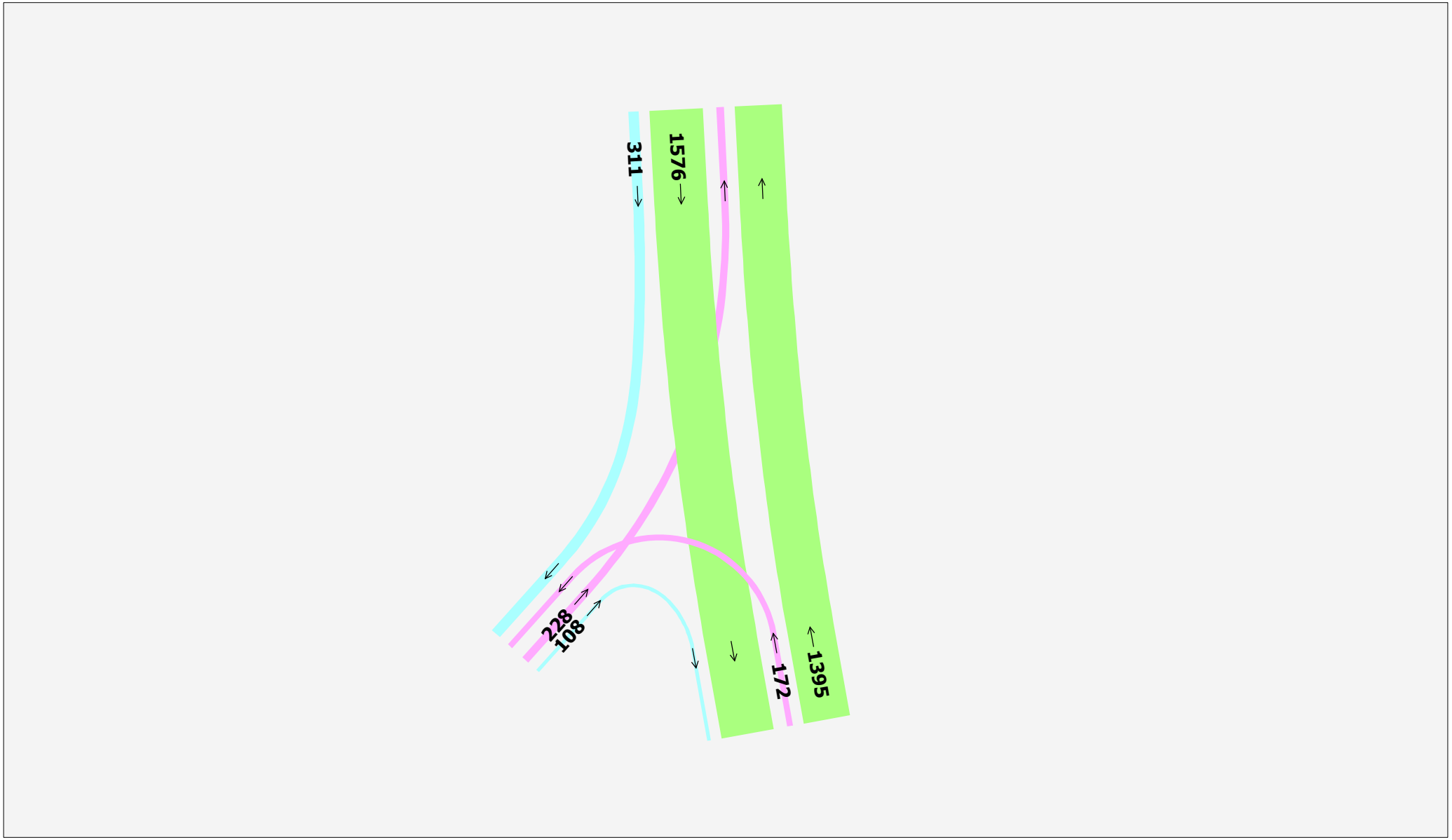

Redland 19:00

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Redland 20:00

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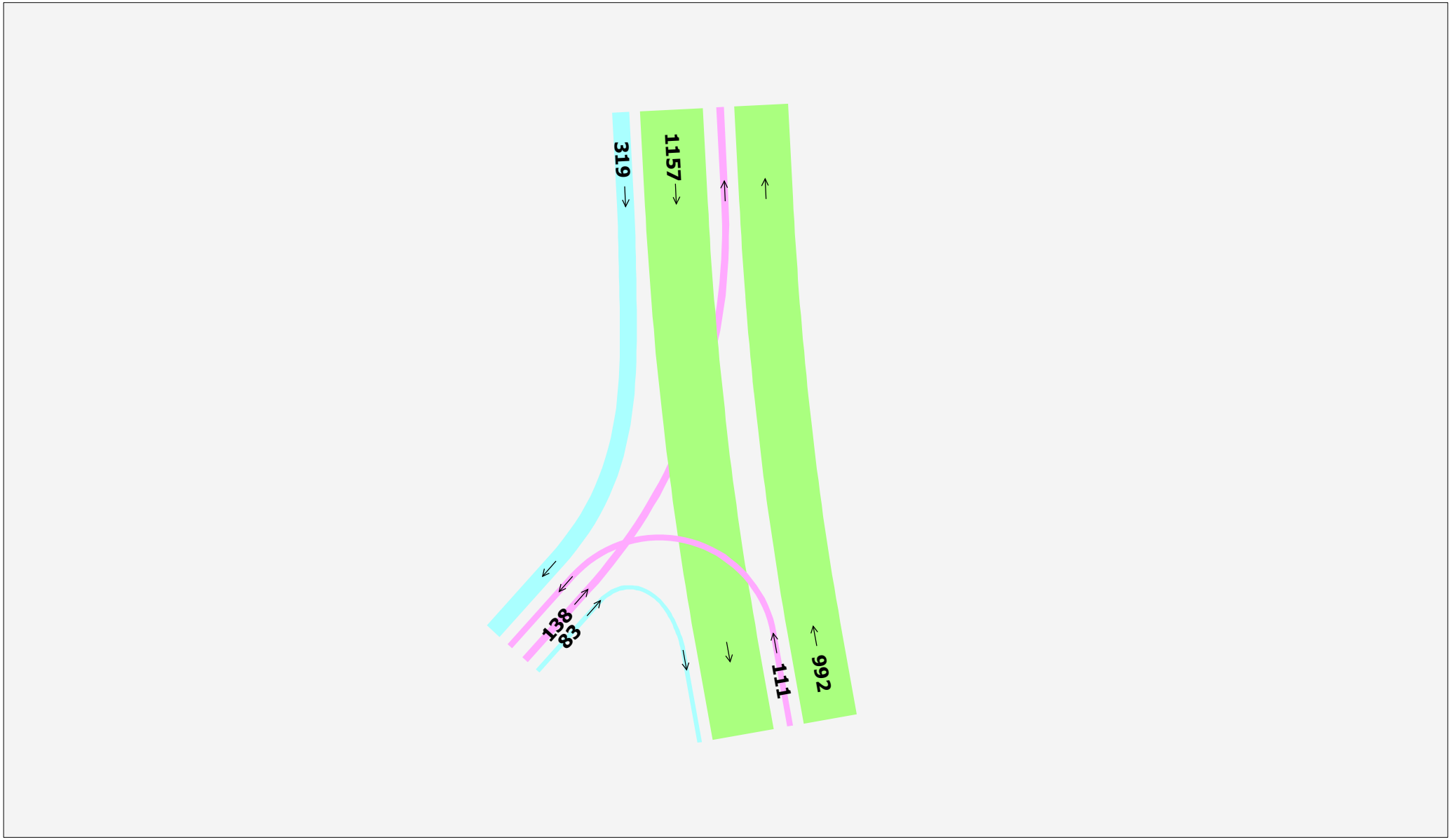

Redland 21:00

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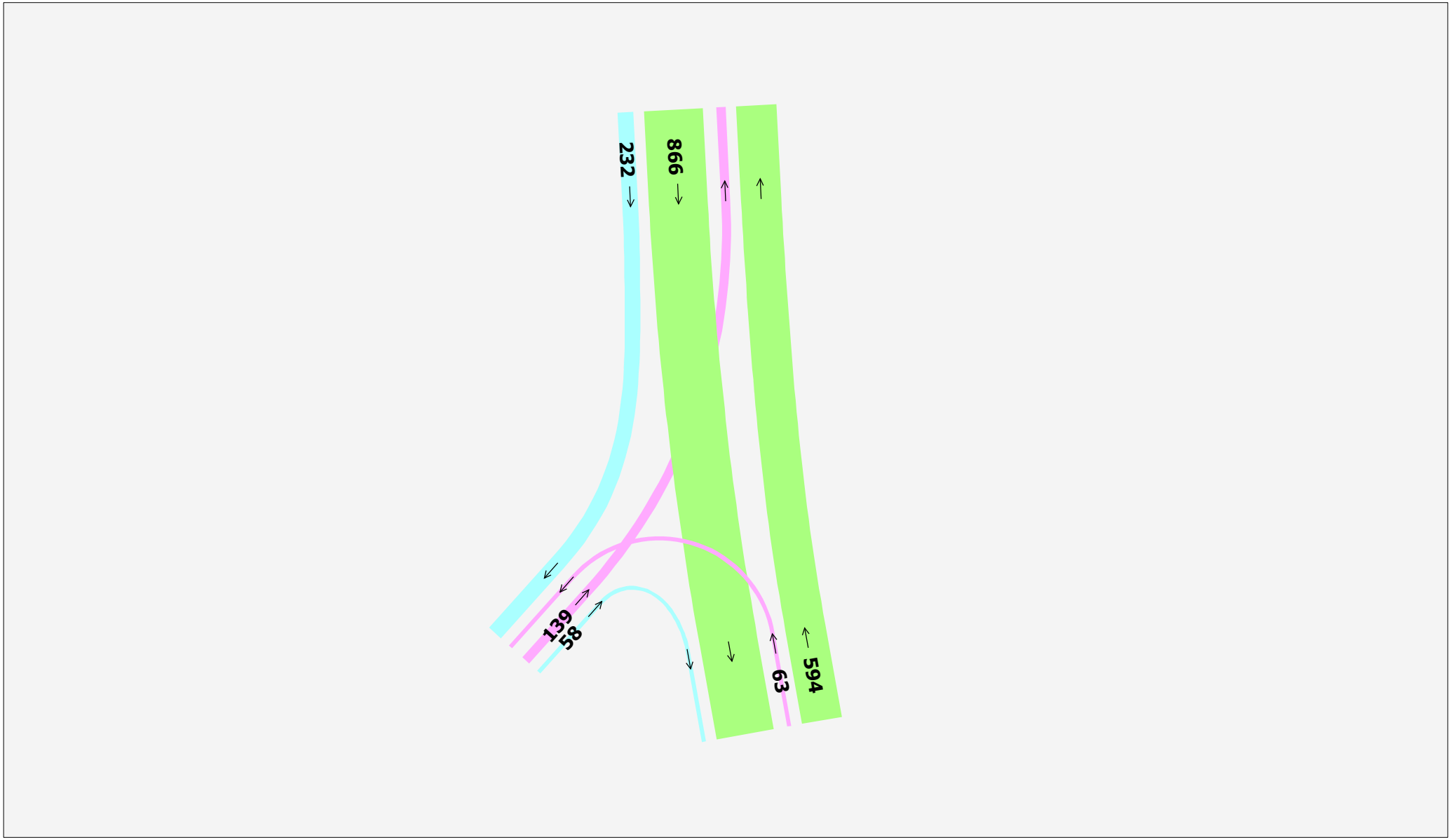

Redland 22:00

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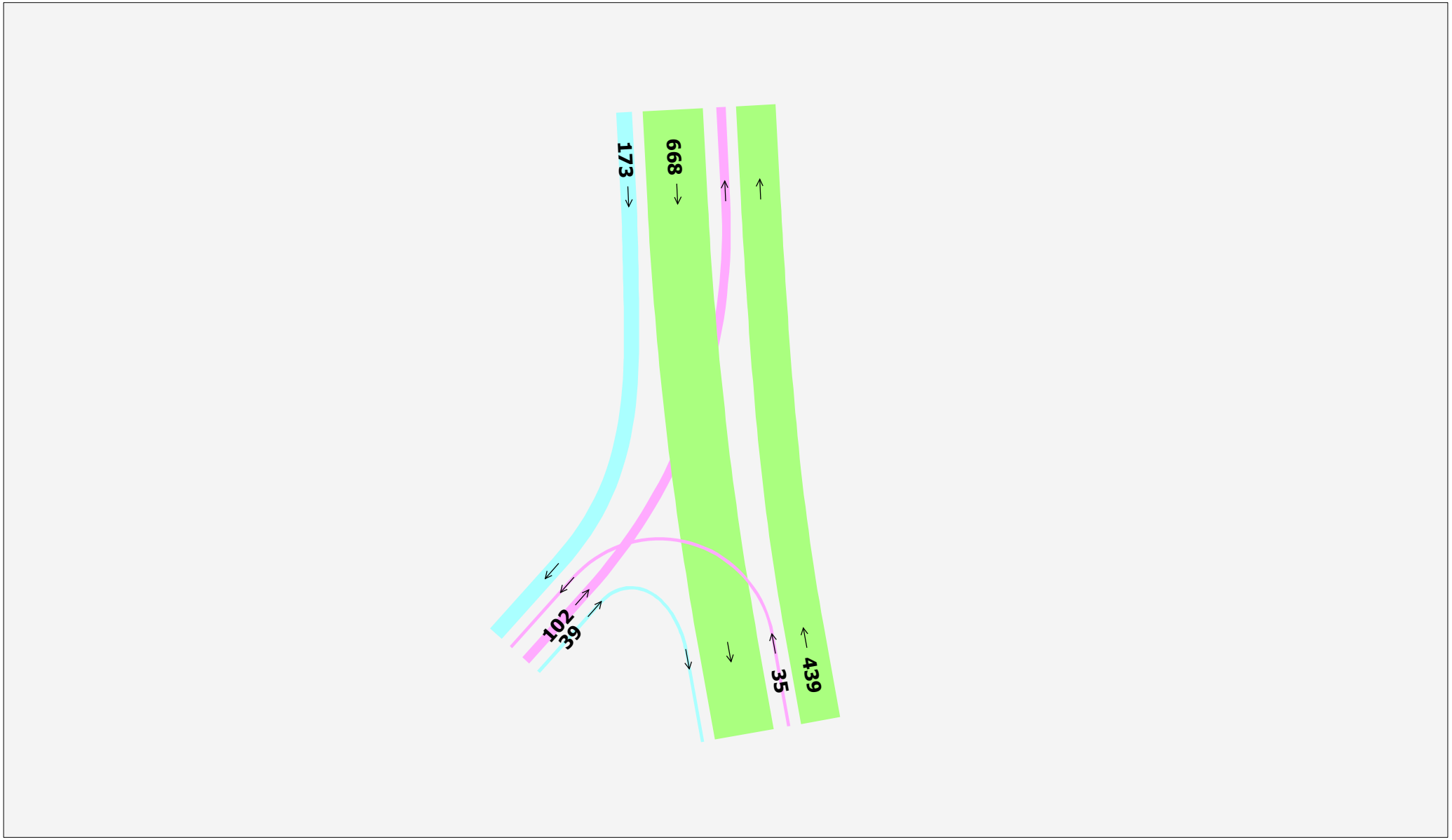


Redland 23:00

Type of peak hour being reported: Intersection Peak

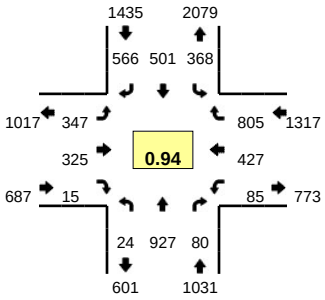
Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- S Beavercreek Rd

CITY/STATE: Oregon City, OR

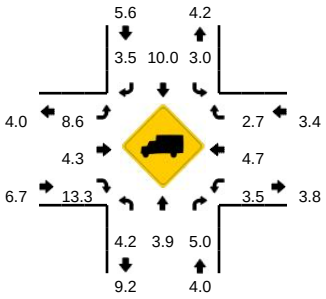
QC JOB #: 14414701

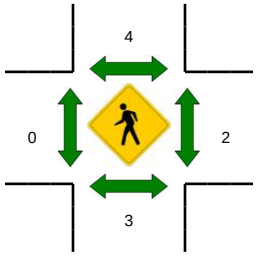
DATE: Tue, May 16 2017

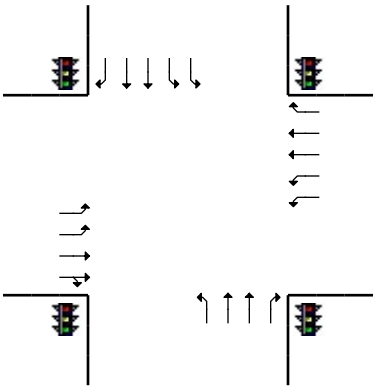


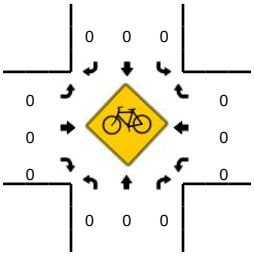
Peak-Hour: 7:00 AM -- 8:00 AM

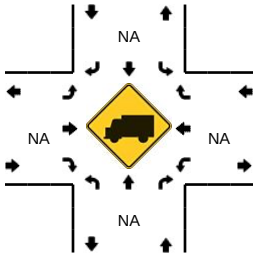
Peak 15-Min: 7:45 AM -- 8:00 AM

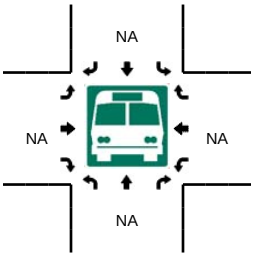












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				S Beavercreek Rd (Eastbound)				S Beavercreek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	75	7	0	25	28	42	0	29	19	2	0	4	27	67	0	325	
7:05 AM	0	82	3	0	23	39	47	0	32	21	1	0	9	30	71	0	358	
7:10 AM	2	86	10	0	19	30	41	0	21	28	4	0	2	22	77	0	342	
7:15 AM	0	81	6	0	38	36	38	0	29	37	0	0	7	38	73	0	383	
7:20 AM	5	85	11	0	29	31	45	0	26	44	3	0	8	36	69	0	392	
7:25 AM	3	84	3	0	42	42	41	0	43	46	0	0	5	35	65	0	409	
7:30 AM	2	74	11	0	32	34	41	0	34	33	1	0	9	39	49	0	359	
7:35 AM	1	74	7	0	37	45	53	0	34	19	1	0	4	33	73	0	381	
7:40 AM	3	55	4	0	24	48	39	0	26	22	1	0	8	34	70	0	334	
7:45 AM	3	65	7	0	41	48	50	0	32	22	0	0	15	45	66	0	394	
7:50 AM	3	82	4	0	31	34	68	0	21	21	1	0	10	50	68	0	393	
7:55 AM	2	84	7	0	27	86	61	0	20	13	1	0	4	38	57	0	400	4470
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4145
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3787
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3445
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3062
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2670
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2261
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1902
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1521
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1187
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	793
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	924	72	0	396	672	716	0	292	224	8	0	116	532	764	0	4748
Heavy Trucks	0	20	4		8	56	8		12	4	0		0	16	16		144
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/22/2017 3:28 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- S Beavercreek Rd

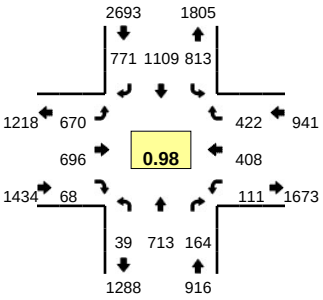
CITY/STATE: Oregon City, OR

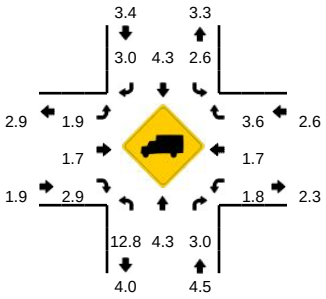
QC JOB #: 14414702

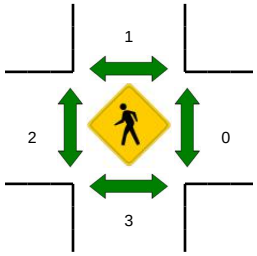
DATE: Tue, May 16 2017

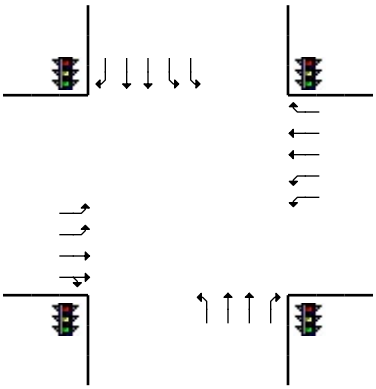
Peak-Hour: 4:30 PM -- 5:30 PM

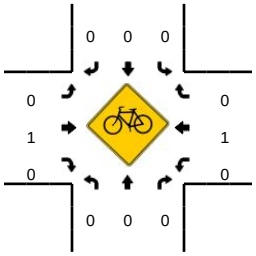
Peak 15-Min: 5:05 PM -- 5:20 PM

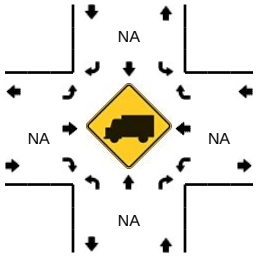


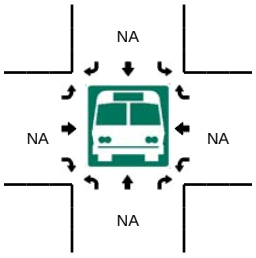












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				S Beavercreek Rd (Eastbound)				S Beavercreek Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	63	14	0	45	74	63	0	59	55	8	0	9	41	33	0	467	5599
4:05 PM	3	45	12	0	63	83	76	0	54	63	10	0	6	32	34	0	481	5635
4:10 PM	3	70	11	0	46	104	66	0	52	52	8	1	4	33	40	0	490	5692
4:15 PM	1	58	10	0	58	86	56	1	61	53	3	0	21	26	29	0	463	5702
4:20 PM	2	44	12	0	57	87	65	0	44	56	7	0	17	51	36	0	478	5719
4:25 PM	4	46	14	0	71	78	68	0	44	72	7	0	16	27	36	0	483	5724
4:30 PM	5	62	19	0	65	79	63	0	49	62	4	0	7	32	25	0	472	5735
4:35 PM	2	58	11	0	66	118	60	0	49	55	7	0	7	32	41	0	506	5801
4:40 PM	6	54	17	0	63	70	64	0	61	64	4	0	15	35	35	0	488	5761
4:45 PM	3	59	14	0	68	102	69	0	68	61	7	0	12	26	46	0	535	5842
4:50 PM	4	51	16	0	59	97	58	0	55	58	6	0	10	45	31	0	490	5856
4:55 PM	5	67	9	0	56	112	63	0	47	56	10	0	14	33	24	0	496	5849
5:00 PM	5	52	13	0	88	81	62	0	48	65	8	0	6	35	27	0	490	5872
5:05 PM	0	67	17	0	55	59	78	0	78	61	4	0	7	34	29	0	489	5880
5:10 PM	2	57	8	0	76	102	67	0	62	63	6	0	9	30	50	0	532	5922
5:15 PM	4	56	18	0	74	91	48	0	57	61	3	0	10	41	48	0	511	5970
5:20 PM	3	64	12	0	68	95	68	0	45	51	7	0	4	33	36	0	486	5978
5:25 PM	0	66	10	0	75	103	71	0	51	39	2	0	10	32	30	0	489	5984
5:30 PM	3	48	12	0	70	84	44	0	50	54	10	0	6	30	33	0	444	5956
5:35 PM	1	70	8	0	64	102	72	0	56	49	8	0	11	29	32	0	502	5952
5:40 PM	6	36	14	0	76	73	55	0	62	70	2	0	11	40	44	0	489	5953
5:45 PM	3	59	20	0	66	97	53	0	52	65	2	0	15	33	19	0	484	5902
5:50 PM	4	71	15	0	56	93	57	0	35	53	5	0	6	28	27	0	450	5862
5:55 PM	6	45	11	0	61	70	51	0	47	54	5	0	11	30	24	0	415	5781

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	720	172	0	820	1008	772	0	788	740	52	0	104	420	508	0	6128
Heavy Trucks	0	36	4		24	60	20		0	8	0		4	12	12		180
Pedestrians		8				0				4				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/22/2017 3:28 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

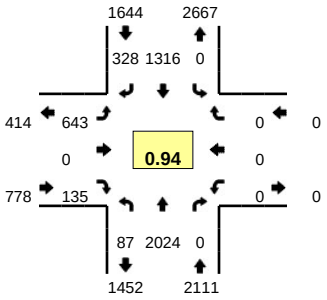
Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- Redland Rd

CITY/STATE: Oregon City, OR

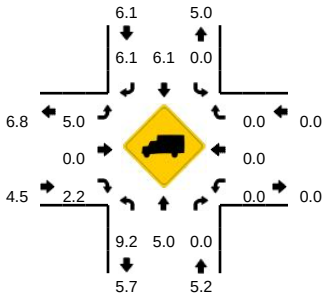
QC JOB #: 14414703

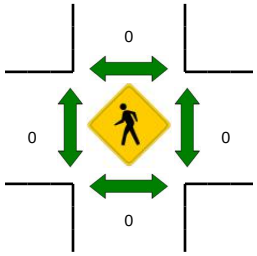
DATE: Tue, May 16 2017

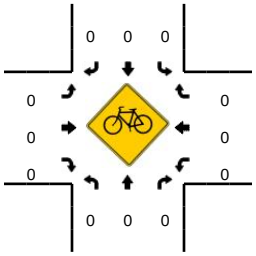


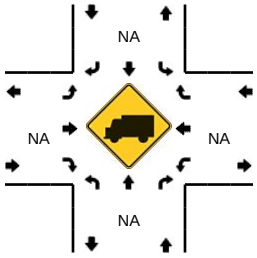
Peak-Hour: 7:00 AM -- 8:00 AM

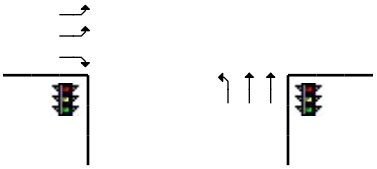
Peak 15-Min: 7:20 AM -- 7:35 AM

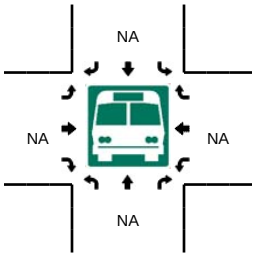












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Redland Rd (Eastbound)				Redland Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	163	0	0	0	77	32	0	52	0	8	0	0	0	0	0	337	
7:05 AM	0	162	0	0	0	86	18	0	64	0	11	0	0	0	0	0	341	
7:10 AM	10	197	0	0	0	103	25	0	50	0	8	0	0	0	0	0	393	
7:15 AM	9	182	0	0	0	90	33	0	39	0	8	0	0	0	0	0	361	
7:20 AM	8	160	0	0	0	104	29	0	70	0	22	0	0	0	0	0	393	
7:25 AM	4	192	0	1	0	110	29	0	57	0	12	0	0	0	0	0	405	
7:30 AM	12	176	0	0	0	113	27	0	62	0	12	0	0	0	0	0	402	
7:35 AM	1	168	0	0	0	112	26	0	47	0	13	0	0	0	0	0	367	
7:40 AM	12	156	0	0	0	108	21	0	59	0	8	0	0	0	0	0	364	
7:45 AM	5	151	0	0	0	100	27	0	57	0	6	0	0	0	0	0	346	
7:50 AM	5	169	0	0	0	144	25	0	47	0	14	0	0	0	0	0	404	
7:55 AM	15	148	0	0	0	169	36	0	39	0	13	0	0	0	0	0	420	4533
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4196
8:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3855
8:10 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3462
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3101
8:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2708
8:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2303
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1901
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1534
8:40 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1170
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	824
8:50 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	420
8:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	2112	0	4	0	1308	340	0	756	0	184	0	0	0	0	0	4800
Heavy Trucks	0	104	0		0	80	16		56	0	0		0	0	0		256
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/22/2017 3:28 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

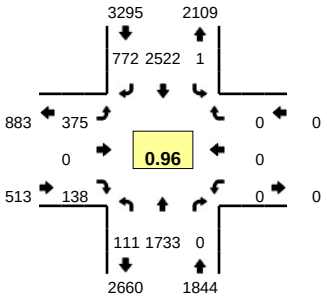
Method for determining peak hour: Total Entering Volume

LOCATION: Cascade Hwy -- Redland Rd

QC JOB #: 14414704

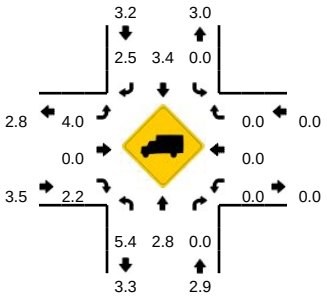
CITY/STATE: Oregon City, OR

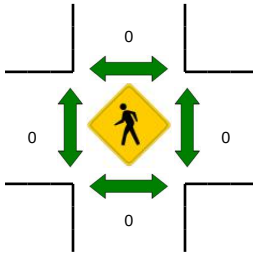
DATE: Tue, May 16 2017

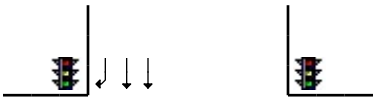


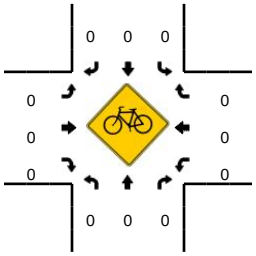
Peak-Hour: 4:35 PM -- 5:35 PM

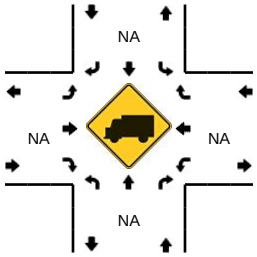
Peak 15-Min: 5:10 PM -- 5:25 PM

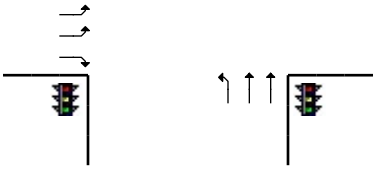


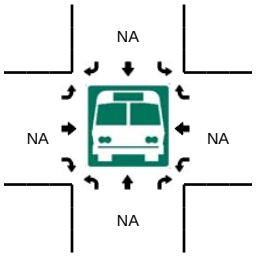












5-Min Count Period Beginning At	Cascade Hwy (Northbound)				Cascade Hwy (Southbound)				Redland Rd (Eastbound)				Redland Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	118	0	0	0	177	64	0	41	0	13	0	0	0	0	0	425	5212
4:05 PM	20	137	0	0	0	200	51	0	29	0	11	0	0	0	0	0	448	5260
4:10 PM	10	135	0	0	0	207	73	0	30	0	19	0	0	0	0	0	474	5307
4:15 PM	5	150	0	0	0	217	53	0	34	0	10	0	0	0	0	0	469	5378
4:20 PM	11	143	0	0	0	187	52	0	34	0	11	0	0	0	0	0	438	5412
4:25 PM	9	109	0	0	0	199	67	0	28	0	19	0	0	0	0	0	431	5377
4:30 PM	9	126	0	0	0	203	51	0	30	0	6	0	0	0	0	0	425	5415
4:35 PM	15	123	0	0	0	175	71	0	45	0	18	0	0	0	0	0	447	5360
4:40 PM	11	153	0	0	0	232	80	0	30	0	10	0	0	0	0	0	516	5431
4:45 PM	9	160	0	0	0	223	55	0	27	0	11	0	0	0	0	0	485	5444
4:50 PM	15	114	0	0	0	191	58	0	32	0	12	0	0	0	0	0	422	5406
4:55 PM	12	144	0	0	0	214	65	0	29	0	10	0	0	0	0	0	474	5454
5:00 PM	6	130	0	0	0	227	61	0	26	0	13	0	0	0	0	0	463	5492
5:05 PM	6	123	0	0	0	198	49	0	42	0	11	0	0	0	0	0	429	5473
5:10 PM	8	181	0	0	0	208	62	0	27	0	14	0	0	0	0	0	500	5499
5:15 PM	8	172	0	0	0	219	62	0	26	0	9	0	0	0	0	0	496	5526
5:20 PM	3	136	0	0	0	213	68	1	36	0	20	0	0	0	0	0	477	5565
5:25 PM	11	151	0	0	0	204	69	0	29	0	2	0	0	0	0	0	466	5600
5:30 PM	7	146	0	0	0	218	72	0	26	0	8	0	0	0	0	0	477	5652
5:35 PM	5	119	0	1	0	215	50	0	27	0	9	0	0	0	0	0	426	5631
5:40 PM	16	153	0	0	0	175	56	0	39	0	15	0	0	0	0	0	454	5569
5:45 PM	13	132	0	0	0	210	79	0	29	0	11	0	0	0	0	0	474	5558
5:50 PM	12	100	0	0	0	200	58	0	26	0	19	0	0	0	0	0	415	5551
5:55 PM	18	119	0	0	0	170	41	0	41	0	12	0	0	0	0	0	401	5478

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	1956	0	0	0	2560	768	4	356	0	172	0	0	0	0	0	5892
Heavy Trucks	0	52	0		0	84	20		8	0	0		0	0	0		164
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/22/2017 3:28 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

ATR CHARACTERISTIC TABLE (Printed: 9/30/2016)										
2015 SEASONAL TRAFFIC TREND	AREA TYPE	# OF LANES	WEEKLY TRAFFIC TREND	2016 AADT	OHP CLASSIFICATION	2015 ATR	COUNTY	HIGHWAY ROUTE, NAME, & LOCATION	MP	STATE HWY NUMBER
COM	URBANIZED	4	WEEKDAY	112800	STATEWIDE HWY	34-010	WASHINGTON	US26, 0.73 MILE EAST OF 185TH AVENUE OVERCROSSING	65.02	47
COM	URBANIZED	4	WEEKDAY	46200	STATEWIDE HWY	09-009	DESCHUTES	US97, THE DALLES-CALIFORNIA HIGHWAY, 0.23 MILE SOUTH OF REVERE AVENUE	137.36	4
COM	URBANIZED	4	WEEKDAY	35600	STATEWIDE HWY	03-018	CLACKAMAS	OR224, CLACKAMAS HIGHWAY, 0.13 MILE WEST OF JOHNSON ROAD	3.60	171
COM	URBANIZED	4	WEEKDAY	34200	STATEWIDE HWY	03-017	CLACKAMAS	OR212, CLACKAMAS HIGHWAY, 0.14 MILE WEST OF S.E.130TH AVENUE	6.80	171
COM	URBANIZED	4	WEEKDAY	33900	STATEWIDE HWY	34-009	WASHINGTON	OR8, TUALATIN VALLEY HIGHWAY, 0.28 MILE WEST OF N.W. 334TH AVENUE	14.84	29
COM	URBANIZED	4	WEEKDAY	32100	STATEWIDE HWY	26-003	MULTNOMAH	US26, MT. HOOD HIGHWAY, 0.18 MILE SOUTHEAST OF S.E. POWELL VALLEY ROAD	14.36	26
COM	URBANIZED	4	WEEKDAY	27000	STATEWIDE HWY	20-028	LANE	OR569, BELTLINE HIGHWAY, 0.42 MILE SOUTH OF BARGER DRIVE INTERCHANGE	5.20	69
SUM	URBANIZED	4	WEEKDAY	24300	STATEWIDE HWY	09-003	DESCHUTES	US97, THE DALLES-CALIFORNIA HIGHWAY, 0.17 MILE SOUTH OF CHINA HAT ROAD	142.41	4
COM	URBANIZED	4	WEEKDAY	24100	STATEWIDE HWY	30-008	UMATILLA	US395, PENDLETON-JOHN DAY HIGHWAY, 0.09 MILE SOUTH OF OLD OREGON TRAIL	1.77	28

03-017

	2015	2014	2013	2012	2011		
Jan	93	95	91	92	94	93	0.97
Feb	97	91	96	96	96	96	1.00
March	99	99	98	96	98	98	1.02
April	101	103	100	100	101	101	1.05
May	102	103	100	101	100	101	1.05
June	108	105	108	104	106	106	1.11
July	105	107	109	108	107	107	1.12
Aug	106	108	107	109	110	108	1.13
Sept	101	103	101	105	102	102	1.06
Oct	99	99	101	99	98	99	1.03
Nov	93	92	95	94	93	93	0.97
Dec	96	95	95	96	96	96	1.00

03-018

	2015	2014	2013	2012	2011			Avg	
Jan	97	94	96	95	96	96	0.95	94	0.96
Feb	103	91	102	100	99	100	1.00	98	1.00
March	103	100	102	98	102	101	1.01	100	1.02
April	104	104	105	103	103	104	1.03	102	1.04
May	102	102	103	102	101	102	1.02	102	1.03
June	105	105	105	103	103	104	1.04	105	1.07
July	99	101	99	100	99	99	0.99	103	1.05
Aug	101	103	101	102	102	102	1.01	105	1.07
Sept	99	103	98	102	99	100	1.00	101	1.03
Oct	101	104	100	101	101	101	1.01	100	1.02
Nov	93	96	95	96	96	96	0.95	95	0.96
Dec	93	98	94	96	98	96	0.96	96	0.98

2017 Count Data - Seasonally Adjusted - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00														
1:00														
2:00														
3:00														
4:00														
5:00														
6:00														
7:00	368	501	566	85	427	805	24	927	80	347	325	15	4,470	5
8:00														
9:00														
10:00														
11:00														
12:00														
13:00														
14:00	451	823	682	100	368	402	42	693	124	531	502	63	4,781	4
15:00	625	1,041	681	155	454	434	88	762	143	595	543	91	5,612	3
16:00	717	1,090	771	138	413	410	41	677	159	643	707	81	5,847	1
17:00	829	1,050	726	106	395	399	37	691	158	643	685	62	5,781	2
18:00														
19:00														
20:00														
21:00														
22:00														
23:00														
Total												AADT	65,693	
												Major	44,728	
												Minor	20,965	

2015 Base Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	96	211	28	3	9	47		100	4	59	14		571	
1:00	70	159	15	2	6	23		50	3	40	11		379	
2:00	71	165	16	2	5	24		49	2	42	10		386	
3:00	45	95	54	3	16	99		203	2	31	7		555	
4:00	70	138	105	7	28	186		422	6	41	14		1,017	
5:00	180	346	245	18	79	454		941	15	100	39		2,417	16
6:00	344	502	435	43	171	757		1,325	38	132	96		3,843	8
7:00	551	599	491	46	196	781		1,305	46	178	216		4,409	3
8:00	607	624	466	41	187	674		1,134	38	217	214		4,202	5
9:00	607	596	354	32	176	625		977	25	244	190		3,826	9
10:00	619	621	314	27	118	504		859	24	277	188		3,551	12
11:00	475	715	328	28	112	473		814	27	345	119		3,436	13
12:00	555	778	349	29	137	524		790	26	375	141		3,704	10
13:00	475	800	356	32	136	516		827	28	362	105		3,637	11
14:00	583	918	311	35	166	568		823	34	392	175		4,005	6
15:00	635	997	299	40	185	583		834	42	429	215		4,259	4
16:00	709	1,072	271	45	184	578		833	45	465	250		4,452	2
17:00	783	1,119	229	47	203	625		780	46	448	239		4,519	1
18:00	610	1,008	255	38	142	504		815	37	366	173		3,948	7
19:00	483	779	171	23	116	418		520	25	252	111		2,898	14
20:00	412	703	109	17	121	392		358	20	194	103		2,429	15
21:00	335	661	87	14	123	380		259	17	178	73		2,127	
22:00	237	478	68	10	31	119		222	12	130	47		1,354	
23:00	182	398	41	6	16	72		142	7	102	31		997	
Total	9,734	14,482	5,397	588	2,663	9,926	0	15,382	569	5,399	2,781	0	66,921	
		29,613			13,177			15,951			8,180			
								68%			32%			

2040 Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	123	234	32	4	24	107		125	5	69	28		751	
1:00	85	177	17	3	16	61		66	4	47	20		496	
2:00	86	183	19	3	16	67		66	4	50	18		512	
3:00	106	118	64	4	30	130		225	3	35	22		737	
4:00	185	176	123	10	49	224		463	8	46	43		1,327	
5:00	435	415	284	27	141	572		1,092	21	112	110		3,209	15
6:00	779	581	507	52	344	1,005		1,477	46	169	251		5,211	7
7:00	1,052	694	585	59	384	1,099		1,431	43	193	397		5,937	2
8:00	1,036	714	513	54	320	982		1,273	45	256	410		5,603	5
9:00	883	684	407	44	301	892		1,064	37	319	373		5,004	9
10:00	863	705	367	40	257	790		921	34	322	366		4,665	12
11:00	709	807	372	41	255	763		922	39	391	272		4,571	13
12:00	835	844	392	45	302	853		903	38	431	297		4,940	10
13:00	801	879	396	61	324	818		942	41	413	258		4,933	11
14:00	929	969	377	67	355	905		926	49	429	303		5,309	6
15:00	933	1,138	311	66	369	985		932	64	463	347		5,608	4
16:00	961	1,248	293	55	369	1,055		927	67	501	410		5,886	3
17:00	1,000	1,321	276	49	360	1,077		881	63	512	424		5,963	1
18:00	834	1,108	283	59	304	821		923	52	407	282		5,073	8
19:00	636	852	196	33	246	654		621	36	292	219		3,785	14
20:00	521	780	122	24	231	590		432	29	223	182		3,134	16
21:00	417	724	99	19	195	576		320	25	206	130		2,711	
22:00	306	541	78	14	70	237		270	17	150	87		1,770	
23:00	223	438	46	9	43	175		179	11	119	55		1,298	
Total	14,738	16,330	6,159	842	5,305	15,438	0	17,381	781	6,155	5,304	0	88,433	
		37,227			21,585			18,162			11,459			
								63%			37%			

2040 Post-Processed - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															Should this
5:00															
6:00															
7:00	742	581	658	102	688	1,097	32	1,026	76	367	526	20	5,916	5	80%
8:00															
9:00															
10:00															
11:00															
12:00															
13:00															
14:00	728	867	778	154	632	662	56	780	138	571	720	84	6,169	4	84%
15:00	892	1,173	699	179	731	749	116	848	163	632	750	120	7,053	3	96%
16:00	947	1,252	810	147	675	775	54	755	179	682	979	107	7,363	1	100%
17:00	1,032	1,229	769	109	600	732	49	778	174	714	1,000	82	7,268	2	99%
18:00															
19:00															
20:00															
21:00															
22:00															
23:00															
Total												AADT	82,592		
												Major	51,731		
												Minor	30,861		

2017 Count Data - Seasonally Adjusted - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	
0:00														
1:00														
2:00														
3:00														
4:00														
5:00														
6:00														
7:00		1,316	328				87	2,024		643		135	4,533	4
8:00														
9:00														
10:00														
11:00														
12:00														
13:00														
14:00		1,864	532				94	1,499		380		131	4,500	5
15:00		2,233	666				135	1,692		357		142	5,225	3
16:00		2,425	740				138	1,612		389		150	5,454	2
17:00		2,457	727				113	1,662		374		143	5,476	1
18:00														
19:00														
20:00														
21:00														
22:00														
23:00														
Total												AADT	61,977	
												Major	55,313	
												Minor	6,665	

2015 Base Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		324	77				13	193		48		12	667	
1:00		234	56				8	105		27		9	439	
2:00		244	55				8	106		28		8	449	
3:00		190	39				20	313		62		5	629	
4:00		304	63				45	604		127		9	1,152	
5:00		748	162				97	1,399		222		22	2,650	15
6:00		1,199	259				125	2,088		618		82	4,371	6
7:00		1,579	212				154	2,110		674		62	4,791	3
8:00		1,651	195				150	1,875		623		46	4,540	5
9:00		1,499	210				102	1,745		356		58	3,970	10
10:00		1,494	207				103	1,536		299		60	3,699	13
11:00		1,465	271				114	1,519		312		54	3,735	12
12:00		1,612	265				122	1,567		308		70	3,944	11
13:00		1,568	313				120	1,585		329		64	3,979	9
14:00		1,746	356				97	1,687		332		65	4,283	7
15:00		1,850	462				152	1,694		415		81	4,654	4
16:00		1,972	472				171	1,704		443		81	4,843	2
17:00		2,050	493				168	1,685		411		80	4,887	1
18:00		1,798	371				108	1,576		352		74	4,279	8
19:00		1,382	307				119	1,072		221		51	3,152	14
20:00		1,180	309				93	851		157		44	2,634	16
21:00		1,034	279				81	736		131		49	2,310	
22:00		749	195				40	431		111		34	1,560	
23:00		598	146				22	294		77		23	1,160	
Total	0	28,470	5,774	0	0	0	2,232	28,475	0	6,683	0	1,143	72,777	
		34,244			0			30,707			7,826			
								89%			11%			

2040 Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		369	91				22	279		66		20	847	
1:00		264	67				13	161		39		15	559	
2:00		273	66				14	170		41		14	578	
3:00		278	48				31	359		80		10	806	
4:00		468	81				68	665		164		17	1,463	
5:00		1,091	199				121	1,655		332		44	3,442	15
6:00		1,723	176				204	2,447		560		144	5,254	7
7:00		2,138	202				268	2,455		597		193	5,853	3
8:00		2,108	211				280	2,232		601		156	5,588	5
9:00		1,832	233				220	2,056		491		142	4,974	10
10:00		1,806	207				240	1,793		400		130	4,576	13
11:00		1,753	305				240	1,836		394		135	4,663	12
12:00		1,917	311				258	1,929		387		154	4,956	11
13:00		1,924	364				265	1,908		400		152	5,013	9
14:00		2,063	392				290	1,970		437		212	5,364	6
15:00		2,125	455				259	2,121		430		256	5,646	4
16:00		2,244	482				253	2,231		431		258	5,899	2
17:00		2,374	493				255	2,215		421		223	5,981	1
18:00		2,054	437				257	1,893		421		172	5,234	8
19:00		1,576	311				172	1,395		228		108	3,790	14
20:00		1,330	301				131	1,114		162		93	3,131	16
21:00		1,157	319				111	992		138		83	2,800	
22:00		866	232				63	594		139		58	1,952	
23:00		668	173				35	439		102		39	1,456	
Total	0	34,401	6,156	0	0	0	4,070	34,909	0	7,461	0	2,828	89,825	
		40,557			0			38,979			10,289			
								89%			11%			

2040 Post-Processed - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total		
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00															
6:00															
7:00		1,782	316				167	2,333		573		307	5,479	5	80%
8:00															
9:00															
10:00															
11:00															
12:00															
13:00															
14:00		2,163	573				257	1,743		482		314	5,533	4	84%
15:00		2,510	658				226	2,081		370		343	6,188	3	96%
16:00		2,702	752				205	2,078		379		360	6,476	2	100%
17:00		2,782	727				179	2,140		383		312	6,523	1	99%
18:00															
19:00															
20:00															
21:00															
22:00															
23:00															
Total												AADT	73,588		
												Major	65,159		
												Minor	8,429		

2040 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
6:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
7:00	762	597	676	102	688	1,100	32	1,028	76	368	526	20	5,975	#DIV/0!	80%
8:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
9:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
10:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
11:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
12:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
13:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
14:00	744	886	795	154	632	660	56	778	138	569	720	84	6,216	#DIV/0!	84%
15:00	907	1,192	710	179	731	762	116	863	163	643	750	120	7,136	#DIV/0!	96%
16:00	955	1,263	817	147	675	788	54	767	179	693	979	107	7,424	#DIV/0!	100%
17:00	1,043	1,242	777	109	600	748	49	795	174	729	1,000	82	7,347	#DIV/0!	99%
18:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
19:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
20:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
21:00															
22:00															
23:00															
Total												AADT	84,363		
												Major	52,840		
												Minor	31,523		

2035 - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
7:00	664	564	639	98	634	1,036	30	1,005	77	363	484	19	5,614	5	81%
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
14:00	670	858	758	143	577	608	53	762	135	563	675	80	5,880	4	85%
15:00	836	1,145	695	174	673	684	110	830	159	624	707	114	6,752	3	97%
16:00	899	1,218	802	145	620	699	51	739	175	674	922	102	7,047	1	101%
17:00	990	1,192	760	108	557	663	47	760	170	699	934	78	6,958	2	100%
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
21:00															
22:00															
23:00															
Total												AADT	79,071		
												Major	49,526		
												Minor	29,546		

2035 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
6:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
7:00	679	577	653	98	634	1,039	30	1,008	77	364	484	19	5,662	#DIV/0!	80%
8:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
9:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
10:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
11:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
12:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
13:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
14:00	697	892	788	143	577	588	53	737	135	545	675	80	5,909	#DIV/0!	83%
15:00	861	1,179	715	174	673	674	110	818	159	615	707	114	6,799	#DIV/0!	96%
16:00	905	1,226	807	145	620	708	51	748	175	683	922	102	7,093	#DIV/0!	100%
17:00	997	1,201	766	108	557	675	47	774	170	712	934	78	7,019	#DIV/0!	99%
18:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
19:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
20:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
21:00															
22:00															
23:00															
Total												AADT	80,597		
												Major	50,481		
												Minor	30,116		

2040 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
7:00		1,736	319				167	2,328		589		300	5,438	#DIV/0!	80%
8:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
14:00		2,118	628				258	1,749		319		307	5,379	#DIV/0!	84%
15:00		2,471	718				222	2,047		365		337	6,143	#DIV/0!	96%
16:00		2,679	749				202	2,045		381		357	6,413	#DIV/0!	100%
17:00		2,754	727				175	2,096		381		308	6,441	#DIV/0!	99%
18:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	73,192		
												Major	64,808		
												Minor	8,384		

2035 - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		0	0				0	0		0		0	0	#DIV/0!	0%
7:00		1,680	319				150	2,266		589		270	5,273	#DIV/0!	81%
8:00		0	0				0	0		0		0	0	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		0	0				0	0		0		0	0	#DIV/0!	0%
14:00		2,205	625				159	1,650		318		262	5,218	#DIV/0!	85%
15:00		2,532	718				183	1,894		365		301	5,992	#DIV/0!	97%
16:00		2,642	749				190	1,977		381		314	6,254	#DIV/0!	101%
17:00		2,712	727				165	2,036		381		275	6,295	#DIV/0!	100%
18:00		0	0				0	0		0		0	0	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	71,539		
												Major	63,345		
												Minor	8,194		

2035 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
7:00		1,645	319				150	2,260		589		264	5,226	#DIV/0!	81%
8:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
14:00		2,124	625				164	1,707		318		253	5,191	#DIV/0!	85%
15:00		2,462	718				185	1,921		365		293	5,949	#DIV/0!	97%
16:00		2,625	749				188	1,953		381		312	6,208	#DIV/0!	101%
17:00		2,691	727				162	2,000		381		273	6,234	#DIV/0!	100%
18:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	70,839		
												Major	62,725		
												Minor	8,114		

2017 Count Data - Seasonally Adjusted - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00														
1:00														
2:00														
3:00														
4:00														
5:00														
6:00														
7:00	381	519	586	88	442	833	25	959	83	359	336	16	4,626	5
8:00														
9:00														
10:00														
11:00														
12:00														
13:00														
14:00	467	852	706	104	381	416	43	717	128	550	520	65	4,948	4
15:00	647	1,077	705	160	470	449	91	789	148	616	562	94	5,808	3
16:00	742	1,128	798	143	427	424	42	701	165	666	732	84	6,052	1
17:00	858	1,087	751	110	409	413	38	715	164	666	709	64	5,983	2
18:00														
19:00														
20:00														
21:00														
22:00														
23:00														
Total												AADT	67,992	
												Major	46,294	
												Minor	21,699	

2015 Base Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	96	211	28	3	9	47		100	4	59	14		571	
1:00	70	159	15	2	6	23		50	3	40	11		379	
2:00	71	165	16	2	5	24		49	2	42	10		386	
3:00	45	95	54	3	16	99		203	2	31	7		555	
4:00	70	138	105	7	28	186		422	6	41	14		1,017	
5:00	180	346	245	18	79	454		941	15	100	39		2,417	16
6:00	344	502	435	43	171	757		1,325	38	132	96		3,843	8
7:00	551	599	491	46	196	781		1,305	46	178	216		4,409	3
8:00	607	624	466	41	187	674		1,134	38	217	214		4,202	5
9:00	607	596	354	32	176	625		977	25	244	190		3,826	9
10:00	619	621	314	27	118	504		859	24	277	188		3,551	12
11:00	475	715	328	28	112	473		814	27	345	119		3,436	13
12:00	555	778	349	29	137	524		790	26	375	141		3,704	10
13:00	475	800	356	32	136	516		827	28	362	105		3,637	11
14:00	583	918	311	35	166	568		823	34	392	175		4,005	6
15:00	635	997	299	40	185	583		834	42	429	215		4,259	4
16:00	709	1,072	271	45	184	578		833	45	465	250		4,452	2
17:00	783	1,119	229	47	203	625		780	46	448	239		4,519	1
18:00	610	1,008	255	38	142	504		815	37	366	173		3,948	7
19:00	483	779	171	23	116	418		520	25	252	111		2,898	14
20:00	412	703	109	17	121	392		358	20	194	103		2,429	15
21:00	335	661	87	14	123	380		259	17	178	73		2,127	
22:00	237	478	68	10	31	119		222	12	130	47		1,354	
23:00	182	398	41	6	16	72		142	7	102	31		997	
Total	9,734	14,482	5,397	588	2,663	9,926	0	15,382	569	5,399	2,781	0	66,921	
		29,613			13,177			15,951			8,180			
								68%			32%			

2040 Model - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00	123	234	32	4	24	107		125	5	69	28		751	
1:00	85	177	17	3	16	61		66	4	47	20		496	
2:00	86	183	19	3	16	67		66	4	50	18		512	
3:00	106	118	64	4	30	130		225	3	35	22		737	
4:00	185	176	123	10	49	224		463	8	46	43		1,327	
5:00	435	415	284	27	141	572		1,092	21	112	110		3,209	15
6:00	779	581	507	52	344	1,005		1,477	46	169	251		5,211	7
7:00	1,052	694	585	59	384	1,099		1,431	43	193	397		5,937	2
8:00	1,036	714	513	54	320	982		1,273	45	256	410		5,603	5
9:00	883	684	407	44	301	892		1,064	37	319	373		5,004	9
10:00	863	705	367	40	257	790		921	34	322	366		4,665	12
11:00	709	807	372	41	255	763		922	39	391	272		4,571	13
12:00	835	844	392	45	302	853		903	38	431	297		4,940	10
13:00	801	879	396	61	324	818		942	41	413	258		4,933	11
14:00	929	969	377	67	355	905		926	49	429	303		5,309	6
15:00	933	1,138	311	66	369	985		932	64	463	347		5,608	4
16:00	961	1,248	293	55	369	1,055		927	67	501	410		5,886	3
17:00	1,000	1,321	276	49	360	1,077		881	63	512	424		5,963	1
18:00	834	1,108	283	59	304	821		923	52	407	282		5,073	8
19:00	636	852	196	33	246	654		621	36	292	219		3,785	14
20:00	521	780	122	24	231	590		432	29	223	182		3,134	16
21:00	417	724	99	19	195	576		320	25	206	130		2,711	
22:00	306	541	78	14	70	237		270	17	150	87		1,770	
23:00	223	438	46	9	43	175		179	11	119	55		1,298	
Total	14,738	16,330	6,159	842	5,305	15,438	0	17,381	781	6,155	5,304	0	88,433	
		37,227			21,585			18,162			11,459			
								63%			37%			

2040 Post-Processed - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00															
6:00															
7:00	760	600	680	105	710	1,131	33	1,060	79	380	541	21	6,098	5	80%
8:00															
9:00															
10:00															
11:00															
12:00															
13:00															
14:00	748	897	804	159	651	679	58	806	142	590	744	86	6,363	4	84%
15:00	919	1,212	723	184	754	769	120	876	168	654	774	124	7,277	3	96%
16:00	976	1,293	838	152	696	795	56	780	185	706	1,010	111	7,597	1	100%
17:00	1,065	1,269	795	113	618	751	51	804	179	738	1,032	85	7,499	2	99%
18:00															
19:00															
20:00															
21:00															
22:00															
23:00															
Total												AADT	85,212		
												Major	53,371		
												Minor	31,840		

2017 Count Data - Seasonally Adjusted - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	
0:00														
1:00														
2:00														
3:00														
4:00														
5:00														
6:00														
7:00		1,362	339				90	2,095		666		140	4,692	4
8:00														
9:00														
10:00														
11:00														
12:00														
13:00														
14:00		1,929	551				97	1,551		393		136	4,658	5
15:00		2,311	689				140	1,751		369		147	5,408	3
16:00		2,510	766				143	1,668		403		155	5,645	2
17:00		2,543	752				117	1,720		387		148	5,668	1
18:00														
19:00														
20:00														
21:00														
22:00														
23:00														
Total												AADT	64,146	
												Major	57,249	
												Minor	6,898	

2015 Base Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		324	77				13	193		48		12	667	
1:00		234	56				8	105		27		9	439	
2:00		244	55				8	106		28		8	449	
3:00		190	39				20	313		62		5	629	
4:00		304	63				45	604		127		9	1,152	
5:00		748	162				97	1,399		222		22	2,650	15
6:00		1,199	259				125	2,088		618		82	4,371	6
7:00		1,579	212				154	2,110		674		62	4,791	3
8:00		1,651	195				150	1,875		623		46	4,540	5
9:00		1,499	210				102	1,745		356		58	3,970	10
10:00		1,494	207				103	1,536		299		60	3,699	13
11:00		1,465	271				114	1,519		312		54	3,735	12
12:00		1,612	265				122	1,567		308		70	3,944	11
13:00		1,568	313				120	1,585		329		64	3,979	9
14:00		1,746	356				97	1,687		332		65	4,283	7
15:00		1,850	462				152	1,694		415		81	4,654	4
16:00		1,972	472				171	1,704		443		81	4,843	2
17:00		2,050	493				168	1,685		411		80	4,887	1
18:00		1,798	371				108	1,576		352		74	4,279	8
19:00		1,382	307				119	1,072		221		51	3,152	14
20:00		1,180	309				93	851		157		44	2,634	16
21:00		1,034	279				81	736		131		49	2,310	
22:00		749	195				40	431		111		34	1,560	
23:00		598	146				22	294		77		23	1,160	
Total	0	28,470	5,774	0	0	0	2,232	28,475	0	6,683	0	1,143	72,777	
		34,244			0			30,707			7,826			
								89%			11%			

2040 Model - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank
0:00		369	91				22	279		66		20	847	
1:00		264	67				13	161		39		15	559	
2:00		273	66				14	170		41		14	578	
3:00		278	48				31	359		80		10	806	
4:00		468	81				68	665		164		17	1,463	
5:00		1,091	199				121	1,655		332		44	3,442	15
6:00		1,723	176				204	2,447		560		144	5,254	7
7:00		2,138	202				268	2,455		597		193	5,853	3
8:00		2,108	211				280	2,232		601		156	5,588	5
9:00		1,832	233				220	2,056		491		142	4,974	10
10:00		1,806	207				240	1,793		400		130	4,576	13
11:00		1,753	305				240	1,836		394		135	4,663	12
12:00		1,917	311				258	1,929		387		154	4,956	11
13:00		1,924	364				265	1,908		400		152	5,013	9
14:00		2,063	392				290	1,970		437		212	5,364	6
15:00		2,125	455				259	2,121		430		256	5,646	4
16:00		2,244	482				253	2,231		431		258	5,899	2
17:00		2,374	493				255	2,215		421		223	5,981	1
18:00		2,054	437				257	1,893		421		172	5,234	8
19:00		1,576	311				172	1,395		228		108	3,790	14
20:00		1,330	301				131	1,114		162		93	3,131	16
21:00		1,157	319				111	992		138		83	2,800	
22:00		866	232				63	594		139		58	1,952	
23:00		668	173				35	439		102		39	1,456	
Total	0	34,401	6,156	0	0	0	4,070	34,909	0	7,461	0	2,828	89,825	
		40,557			0			38,979			10,289			
								89%			11%			

2040 Post-Processed - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total		
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00															
6:00															
7:00		1,835	327				171	2,409		595		316	5,654	5	80%
8:00															
9:00															
10:00															
11:00															
12:00															
13:00															
14:00		2,234	593				263	1,800		497		323	5,709	4	84%
15:00		2,594	681				232	2,147		383		352	6,388	3	96%
16:00		2,793	778				211	2,142		392		370	6,685	2	100%
17:00		2,875	752				184	2,207		396		320	6,734	1	99%
18:00															
19:00															
20:00															
21:00															
22:00															
23:00															
Total												AADT	75,970		
												Major	67,268		
												Minor	8,702		

2040 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
6:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
7:00	781	616	698	105	710	1,133	33	1,062	79	381	541	21	6,160	#DIV/0!	80%
8:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
9:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
10:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
11:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
12:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
13:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
14:00	764	917	822	159	651	677	58	803	142	588	744	86	6,410	#DIV/0!	84%
15:00	933	1,231	735	184	754	782	120	891	168	665	774	124	7,361	#DIV/0!	96%
16:00	985	1,305	845	152	696	808	56	792	185	717	1,010	111	7,662	#DIV/0!	100%
17:00	1,076	1,282	803	113	618	767	51	821	179	754	1,032	85	7,581	#DIV/0!	99%
18:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
19:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
20:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
21:00															
22:00															
23:00															
Total												AADT	87,064		
												Major	54,532		
												Minor	32,533		

2035 - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
7:00	681	583	660	102	654	1,069	31	1,039	80	376	498	20	5,792	5	81%
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
14:00	689	888	784	147	594	625	55	787	139	582	697	82	6,068	4	84%
15:00	862	1,184	719	179	695	702	114	858	164	646	730	118	6,971	3	97%
16:00	927	1,259	829	150	640	718	53	763	181	697	952	105	7,275	1	101%
17:00	1,022	1,231	786	112	574	680	48	785	176	723	965	81	7,183	2	100%
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
19:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
20:00	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0%
21:00															
22:00															
23:00															
Total												AADT	81,624		
												Major	51,124		
												Minor	30,500		

2035 Balanced - OR213/Beavercreek Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															
5:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
6:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
7:00	696	596	675	102	654	1,071	31	1,041	80	376	498	20	5,840	#DIV/0!	80%
8:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
9:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
10:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
11:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
12:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
13:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
14:00	716	923	815	147	594	604	55	762	139	563	697	82	6,098	#DIV/0!	83%
15:00	887	1,218	740	179	695	692	114	845	164	636	730	118	7,018	#DIV/0!	96%
16:00	933	1,267	835	150	640	727	53	773	181	706	952	105	7,322	#DIV/0!	100%
17:00	1,030	1,240	792	112	574	693	48	800	176	736	965	81	7,247	#DIV/0!	99%
18:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
19:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
20:00	#DIV/0!	#DIV/0!	#DIV/0!	0	0	#DIV/0!	0	#DIV/0!	0	#DIV/0!	0	0	#DIV/0!	#DIV/0!	#DIV/0!
21:00															
22:00															
23:00															
Total												AADT	83,206		
												Major	52,115		
												Minor	31,091		

2040 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
7:00		1,787	330				171	2,404		610		308	5,610	#DIV/0!	80%
8:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
14:00		2,187	649				264	1,805		330		316	5,552	#DIV/0!	84%
15:00		2,553	743				228	2,112		378		346	6,341	#DIV/0!	96%
16:00		2,768	775				208	2,108		394		366	6,620	#DIV/0!	100%
17:00		2,845	752				180	2,161		394		317	6,650	#DIV/0!	99%
18:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	75,563		
												Major	66,907		
												Minor	8,655		

2035 - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		0	0				0	0		0		0	0	#DIV/0!	0%
7:00		1,732	330				154	2,341		610		278	5,445	#DIV/0!	81%
8:00		0	0				0	0		0		0	0	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		0	0				0	0		0		0	0	#DIV/0!	0%
14:00		2,278	647				164	1,701		329		269	5,388	#DIV/0!	84%
15:00		2,617	743				188	1,954		378		309	6,189	#DIV/0!	97%
16:00		2,731	775				196	2,039		394		323	6,459	#DIV/0!	101%
17:00		2,803	752				169	2,101		394		283	6,502	#DIV/0!	100%
18:00		0	0				0	0		0		0	0	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	73,887		
												Major	65,423		
												Minor	8,463		

2035 Balanced - OR213/Redland Road

Time	SBL	SBT	SBR	WBL	WBT	WBR	NBL	NBT	NBR	EBL	EBT	EBR	Total	Rank	
0:00															
1:00															
2:00															
3:00															
4:00															From Beavercreek
5:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
6:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
7:00		1,695	330				153	2,334		610		272	5,394	#DIV/0!	81%
8:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
9:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
10:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
11:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
12:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
13:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
14:00		2,194	647				169	1,761		329		259	5,359	#DIV/0!	84%
15:00		2,545	743				191	1,982		378		301	6,144	#DIV/0!	97%
16:00		2,714	775				194	2,014		394		321	6,413	#DIV/0!	101%
17:00		2,781	752				166	2,063		394		281	6,438	#DIV/0!	100%
18:00		#DIV/0!	0				#DIV/0!	#DIV/0!		0		#DIV/0!	#DIV/0!	#DIV/0!	0%
19:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
20:00		#DIV/0!	#DIV/0!				#DIV/0!	#DIV/0!		#DIV/0!		#DIV/0!	#DIV/0!	#DIV/0!	0%
21:00															
22:00															
23:00															
Total												AADT	73,154		
												Major	64,774		
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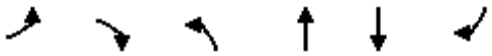
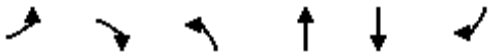


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	595	316	171	2409	1835	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	595	316	171	2409	1835	327
RTOR Reduction (vph)	0	10	0	0	0	37
Lane Group Flow (vph)	595	306	171	2409	1835	290
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	29.1	46.4	17.3	110.5	88.7	117.8
Effective Green, g (s)	29.1	46.4	17.3	110.5	88.7	117.8
Actuated g/C Ratio	0.20	0.31	0.12	0.74	0.60	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	665	537	206	2631	2112	1302
v/s Ratio Prot	c0.18	0.07	0.10	c0.68	0.52	0.04
v/s Ratio Perm		0.13				0.14
v/c Ratio	0.89	0.57	0.83	0.92	0.87	0.22
Uniform Delay, d1	58.3	42.7	64.2	15.3	25.1	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.5	1.4	23.7	6.4	5.2	0.1
Delay (s)	72.8	44.1	87.9	21.7	30.3	4.0
Level of Service	E	D	F	C	C	A
Approach Delay (s)	62.8			26.1	26.3	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	148.6	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

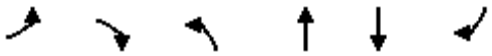
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	573	307	167	2333	1782	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	573	307	167	2333	1782	316
RTOR Reduction (vph)	0	11	0	0	0	42
Lane Group Flow (vph)	573	296	167	2333	1782	274
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	28.6	46.1	17.5	110.5	88.5	117.1
Effective Green, g (s)	28.6	46.1	17.5	110.5	88.5	117.1
Actuated g/C Ratio	0.19	0.31	0.12	0.75	0.60	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	656	535	209	2640	2114	1299
v/s Ratio Prot	c0.17	0.07	0.09	c0.66	0.50	0.04
v/s Ratio Perm		0.12				0.13
v/c Ratio	0.87	0.55	0.80	0.88	0.84	0.21
Uniform Delay, d1	58.0	42.4	63.6	14.0	24.2	3.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.3	1.2	18.9	4.8	4.3	0.1
Delay (s)	70.3	43.7	82.5	18.8	28.5	4.0
Level of Service	E	D	F	B	C	A
Approach Delay (s)	61.0			23.0	24.8	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	148.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		

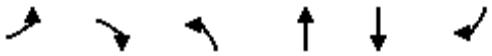
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	497	323	263	1800	2234	593
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	497	323	263	1800	2234	593
RTOR Reduction (vph)	0	5	0	0	0	24
Lane Group Flow (vph)	497	318	263	1800	2234	569
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	22.1	44.2	22.1	118.9	92.3	114.4
Effective Green, g (s)	22.1	44.2	22.1	118.9	92.3	114.4
Actuated g/C Ratio	0.15	0.29	0.15	0.79	0.62	0.76
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	500	509	260	2805	2177	1254
v/s Ratio Prot	c0.15	0.09	c0.15	0.51	c0.63	0.07
v/s Ratio Perm		0.11				0.29
v/c Ratio	0.99	0.62	1.01	0.64	1.03	0.45
Uniform Delay, d1	63.9	45.7	63.9	6.6	28.9	6.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	38.5	2.4	58.8	1.1	26.3	0.3
Delay (s)	102.4	48.1	122.7	7.7	55.1	6.7
Level of Service	F	D	F	A	E	A
Approach Delay (s)	81.0			22.4	45.0	
Approach LOS	F			C	D	

Intersection Summary			
HCM 2000 Control Delay	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		

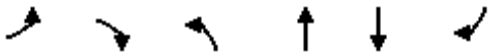
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	482	314	257	1743	2163	573
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	482	314	257	1743	2163	573
RTOR Reduction (vph)	0	6	0	0	0	24
Lane Group Flow (vph)	482	308	257	1743	2163	549
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	21.5	43.2	21.7	119.5	93.3	114.8
Effective Green, g (s)	21.5	43.2	21.7	119.5	93.3	114.8
Actuated g/C Ratio	0.14	0.29	0.14	0.80	0.62	0.77
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	487	498	256	2819	2201	1259
v/s Ratio Prot	c0.14	0.09	c0.15	0.49	c0.61	0.06
v/s Ratio Perm		0.11				0.28
v/c Ratio	0.99	0.62	1.00	0.62	0.98	0.44
Uniform Delay, d1	64.1	46.2	64.2	6.1	27.6	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.7	2.3	57.2	1.0	15.5	0.2
Delay (s)	101.8	48.5	121.4	7.1	43.1	6.4
Level of Service	F	D	F	A	D	A
Approach Delay (s)	80.8			21.8	35.4	
Approach LOS	F			C	D	

Intersection Summary			
HCM 2000 Control Delay	37.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		

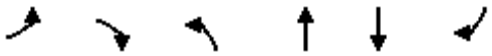
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	383	352	232	2147	2594	681
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	383	352	232	2147	2594	681
RTOR Reduction (vph)	0	4	0	0	0	19
Lane Group Flow (vph)	383	348	232	2147	2594	662
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	16.9	35.5	18.6	124.1	101.0	117.9
Effective Green, g (s)	16.9	35.5	18.6	124.1	101.0	117.9
Actuated g/C Ratio	0.11	0.24	0.12	0.83	0.67	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	383	418	219	2927	2382	1291
v/s Ratio Prot	c0.11	0.10	c0.13	0.61	c0.73	0.06
v/s Ratio Perm		0.12				0.36
v/c Ratio	1.00	0.83	1.06	0.73	1.09	0.51
Uniform Delay, d1	66.5	54.4	65.7	5.7	24.5	5.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.0	13.3	77.4	1.7	47.8	0.3
Delay (s)	112.5	67.7	143.1	7.4	72.3	6.1
Level of Service	F	E	F	A	E	A
Approach Delay (s)	91.1			20.6	58.5	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		

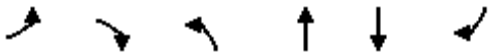
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	370	343	226	2081	2510	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	370	343	226	2081	2510	658
RTOR Reduction (vph)	0	5	0	0	0	20
Lane Group Flow (vph)	370	338	226	2081	2510	638
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	16.6	35.1	18.5	124.4	101.4	118.0
Effective Green, g (s)	16.6	35.1	18.5	124.4	101.4	118.0
Actuated g/C Ratio	0.11	0.23	0.12	0.83	0.68	0.79
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	376	413	218	2935	2392	1292
v/s Ratio Prot	c0.11	0.10	c0.13	0.59	c0.71	0.05
v/s Ratio Perm		0.11				0.35
v/c Ratio	0.98	0.82	1.04	0.71	1.05	0.49
Uniform Delay, d1	66.6	54.4	65.8	5.3	24.3	5.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.9	12.0	70.9	1.5	33.0	0.3
Delay (s)	108.4	66.4	136.6	6.8	57.3	5.9
Level of Service	F	E	F	A	E	A
Approach Delay (s)	88.2			19.5	46.6	
Approach LOS	F			B	D	

Intersection Summary			
HCM 2000 Control Delay	41.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

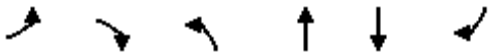
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	392	370	211	2142	2793	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	392	370	211	2142	2793	778
RTOR Reduction (vph)	0	3	0	0	0	14
Lane Group Flow (vph)	392	367	211	2142	2793	764
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	15.5	31.0	15.5	125.5	105.5	121.0
Effective Green, g (s)	15.5	31.0	15.5	125.5	105.5	121.0
Actuated g/C Ratio	0.10	0.21	0.10	0.84	0.70	0.81
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	371	182	2960	2489	1324
v/s Ratio Prot	0.12	c0.10	c0.12	0.61	c0.79	0.06
v/s Ratio Perm		0.13				0.42
v/c Ratio	1.12	0.99	1.16	0.72	1.12	0.58
Uniform Delay, d1	67.2	59.3	67.2	5.1	22.2	5.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	83.4	43.3	116.1	1.6	61.0	0.6
Delay (s)	150.7	102.6	183.4	6.6	83.2	5.9
Level of Service	F	F	F	A	F	A
Approach Delay (s)	127.3			22.5	66.4	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

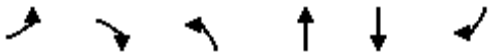
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	379	360	205	2078	2702	752
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	379	360	205	2078	2702	752
RTOR Reduction (vph)	0	4	0	0	0	15
Lane Group Flow (vph)	379	356	205	2078	2702	737
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	15.5	31.0	15.5	125.5	105.5	121.0
Effective Green, g (s)	15.5	31.0	15.5	125.5	105.5	121.0
Actuated g/C Ratio	0.10	0.21	0.10	0.84	0.70	0.81
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	371	182	2960	2489	1324
v/s Ratio Prot	0.11	c0.10	c0.12	0.59	c0.76	0.06
v/s Ratio Perm		0.13				0.41
v/c Ratio	1.08	0.96	1.13	0.70	1.09	0.56
Uniform Delay, d1	67.2	58.9	67.2	4.8	22.2	5.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	71.0	35.8	104.7	1.4	46.2	0.5
Delay (s)	138.2	94.6	172.0	6.3	68.4	5.6
Level of Service	F	F	F	A	E	A
Approach Delay (s)	117.0			21.1	54.7	
Approach LOS	F			C	D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		

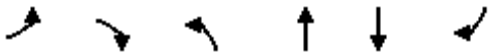
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	396	320	184	2207	2875	752
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	396	320	184	2207	2875	752
RTOR Reduction (vph)	0	3	0	0	0	10
Lane Group Flow (vph)	396	317	184	2207	2875	742
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	16.5	29.0	12.5	124.5	107.5	124.0
Effective Green, g (s)	16.5	29.0	12.5	124.5	107.5	124.0
Actuated g/C Ratio	0.11	0.19	0.08	0.83	0.72	0.83
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	350	147	2937	2536	1356
v/s Ratio Prot	c0.12	0.08	c0.10	0.62	c0.81	0.06
v/s Ratio Perm		0.13				0.41
v/c Ratio	1.06	0.91	1.25	0.75	1.13	0.55
Uniform Delay, d1	66.8	59.2	68.8	5.8	21.2	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.9	25.7	157.2	1.8	65.7	0.5
Delay (s)	129.7	84.9	225.9	7.6	86.9	4.6
Level of Service	F	F	F	A	F	A
Approach Delay (s)	109.6			24.4	69.8	
Approach LOS	F			C	E	

Intersection Summary			
HCM 2000 Control Delay	57.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		

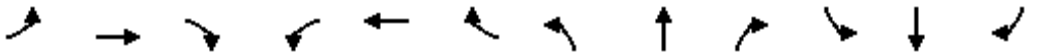
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	383	312	179	2140	2782	727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3400	1568	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (perm)	3400	1568	1770	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	383	312	179	2140	2782	727
RTOR Reduction (vph)	0	4	0	0	0	14
Lane Group Flow (vph)	383	308	179	2140	2782	713
Heavy Vehicles (%)	3%	3%	2%	2%	2%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	pm+ov
Protected Phases	4	5	5	2	6	4
Permitted Phases		4				6
Actuated Green, G (s)	15.5	29.0	13.5	125.5	107.5	123.0
Effective Green, g (s)	15.5	29.0	13.5	125.5	107.5	123.0
Actuated g/C Ratio	0.10	0.19	0.09	0.84	0.72	0.82
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	351	350	159	2960	2536	1345
v/s Ratio Prot	c0.11	0.08	c0.10	0.60	c0.79	0.05
v/s Ratio Perm		0.12				0.40
v/c Ratio	1.09	0.88	1.13	0.72	1.10	0.53
Uniform Delay, d1	67.2	58.8	68.2	5.1	21.2	4.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	74.7	21.4	109.1	1.6	50.6	0.4
Delay (s)	142.0	80.2	177.4	6.6	71.8	4.7
Level of Service	F	F	F	A	E	A
Approach Delay (s)	114.2			19.8	57.9	
Approach LOS	F			B	E	

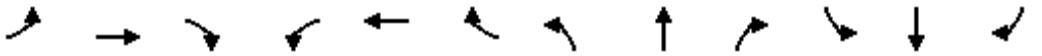
Intersection Summary			
HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	109.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



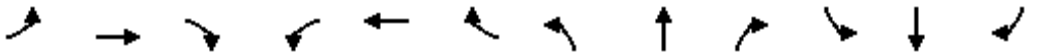
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	541	21	105	710	0	33	1060	79	760	600	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3544		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3544		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	380	541	21	105	710	0	33	1060	79	760	600	680
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	52	0	0	212
Lane Group Flow (vph)	380	560	0	105	710	0	33	1060	27	760	600	468
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	16.5	38.8		7.1	29.4		4.6	47.8	47.8	33.2	76.4	76.4
Effective Green, g (s)	18.0	40.3		8.6	30.9		6.1	50.8	50.8	34.7	79.4	79.4
Actuated g/C Ratio	0.12	0.27		0.06	0.21		0.04	0.34	0.34	0.23	0.53	0.53
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	410	949		200	741		69	1183	531	792	1850	819
v/s Ratio Prot	c0.11	0.16		0.03	c0.20		0.02	c0.30		c0.22	0.17	
v/s Ratio Perm									0.02			0.30
v/c Ratio	0.93	0.59		0.53	0.96		0.48	0.90	0.05	0.96	0.32	0.57
Uniform Delay, d1	65.5	47.9		68.9	59.1		70.6	47.3	33.5	57.2	20.2	24.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.6	0.7		1.6	23.0		3.0	9.5	0.1	22.2	0.2	1.4
Delay (s)	92.2	48.6		70.5	82.1		73.6	56.8	33.6	79.4	20.4	25.4
Level of Service	F	D		E	F		E	E	C	E	C	C
Approach Delay (s)		66.2			80.6			55.7			44.1	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	57.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



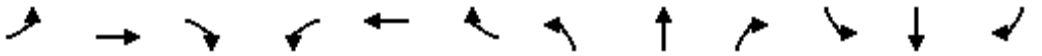
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	526	20	102	688	0	32	1026	76	742	581	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3545		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3545		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	367	526	20	102	688	0	32	1026	76	742	581	658
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	50	0	0	209
Lane Group Flow (vph)	367	545	0	102	688	0	32	1026	26	742	581	449
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	16.4	38.3		7.0	28.9		3.4	48.2	48.2	32.7	77.5	77.5
Effective Green, g (s)	17.9	39.8		8.5	30.4		4.9	51.2	51.2	34.2	80.5	80.5
Actuated g/C Ratio	0.12	0.27		0.06	0.20		0.03	0.34	0.34	0.23	0.54	0.54
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	410	942		198	733		55	1198	537	784	1884	834
v/s Ratio Prot	c0.11	0.15		0.03	c0.19		0.02	c0.29		c0.22	0.17	
v/s Ratio Perm									0.02			0.29
v/c Ratio	0.90	0.58		0.52	0.94		0.58	0.86	0.05	0.95	0.31	0.54
Uniform Delay, d1	65.0	47.7		68.6	58.7		71.4	45.8	33.0	56.8	19.2	22.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.1	0.6		1.4	19.4		11.3	6.7	0.1	20.0	0.2	1.1
Delay (s)	86.1	48.3		70.0	78.2		82.7	52.6	33.0	76.8	19.3	23.6
Level of Service	F	D		E	E		F	D	C	E	B	C
Approach Delay (s)		63.5			77.1			52.1			42.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	149.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



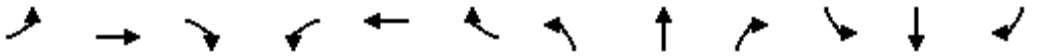
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	380	541	21	105	710	1131	33	1060	79	760	600	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3544		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3544		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	380	541	21	105	710	1131	33	1060	79	760	600	680
RTOR Reduction (vph)	0	2	0	0	0	190	0	0	59	0	0	173
Lane Group Flow (vph)	380	560	0	105	710	941	33	1060	20	760	600	507
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	11.5	61.9		7.1	57.5	57.5	3.3	35.1	35.1	23.5	55.3	55.3
Effective Green, g (s)	13.0	63.4		8.6	59.0	59.0	4.8	38.1	38.1	25.0	58.3	58.3
Actuated g/C Ratio	0.09	0.42		0.06	0.39	0.39	0.03	0.25	0.25	0.17	0.39	0.39
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	295	1487		199	1409	606	54	883	396	568	1352	598
v/s Ratio Prot	c0.11	0.16		0.03	0.20		0.02	c0.30		c0.22	0.17	
v/s Ratio Perm						c0.61			0.01			0.33
v/c Ratio	1.29	0.38		0.53	0.50	1.55	0.61	1.20	0.05	1.34	0.44	0.85
Uniform Delay, d1	69.0	30.2		69.3	34.9	46.0	72.2	56.5	42.8	63.0	34.4	42.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	152.8	0.1		1.6	0.2	257.2	15.1	101.1	0.1	163.8	0.4	11.7
Delay (s)	221.9	30.3		70.9	35.1	303.2	87.4	157.6	42.9	226.8	34.8	54.0
Level of Service	F	C		E	D	F	F	F	D	F	C	D
Approach Delay (s)		107.6			192.9			147.9			112.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	144.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	120.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



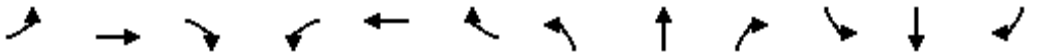
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	367	526	20	102	688	1097	32	1026	76	742	581	658
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3545		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3545		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	367	526	20	102	688	1097	32	1026	76	742	581	658
RTOR Reduction (vph)	0	2	0	0	0	190	0	0	57	0	0	177
Lane Group Flow (vph)	367	544	0	102	688	907	32	1026	19	742	581	481
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	11.5	62.0		7.0	57.5	57.5	3.3	35.1	35.1	23.5	55.3	55.3
Effective Green, g (s)	13.0	63.5		8.5	59.0	59.0	4.8	38.1	38.1	25.0	58.3	58.3
Actuated g/C Ratio	0.09	0.42		0.06	0.39	0.39	0.03	0.25	0.25	0.17	0.39	0.39
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	295	1489		197	1409	606	54	883	396	568	1352	598
v/s Ratio Prot	c0.11	0.15		0.03	0.19		0.02	c0.29		c0.22	0.17	
v/s Ratio Perm						c0.58			0.01			0.31
v/c Ratio	1.24	0.37		0.52	0.49	1.50	0.59	1.16	0.05	1.31	0.43	0.80
Uniform Delay, d1	69.0	30.0		69.3	34.7	46.0	72.2	56.5	42.8	63.0	34.2	41.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	135.1	0.1		1.4	0.2	232.4	12.7	85.4	0.1	150.3	0.4	8.6
Delay (s)	204.2	30.1		70.7	34.8	278.5	84.8	141.9	42.9	213.3	34.6	49.9
Level of Service	F	C		E	C	F	F	F	D	F	C	D
Approach Delay (s)		100.1			178.4			133.6			106.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	133.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



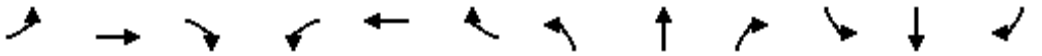
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	347	325	15	85	427	805	24	927	80	368	501	566
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539		3502	3610	1553	1703	3505	1573	3433	3505	1551
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539		3502	3610	1553	1703	3505	1573	3433	3505	1551
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	347	325	15	85	427	805	24	927	80	368	501	566
RTOR Reduction (vph)	0	2	0	0	0	107	0	0	58	0	0	291
Lane Group Flow (vph)	347	338	0	85	427	698	24	927	22	368	501	275
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	14.2	69.0		6.3	61.1	61.1	2.5	38.3	38.3	15.1	50.9	50.9
Effective Green, g (s)	15.7	70.5		7.8	62.6	62.6	4.0	41.3	41.3	16.6	53.9	53.9
Actuated g/C Ratio	0.10	0.46		0.05	0.41	0.41	0.03	0.27	0.27	0.11	0.35	0.35
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	354	1639		179	1484	638	44	951	426	374	1241	549
v/s Ratio Prot	c0.10	0.10		0.02	0.12		0.01	c0.26		c0.11	0.14	
v/s Ratio Perm						c0.45			0.01			0.18
v/c Ratio	0.98	0.21		0.47	0.29	1.09	0.55	0.97	0.05	0.98	0.40	0.50
Uniform Delay, d1	68.1	24.2		70.2	29.9	44.8	73.2	54.9	41.0	67.7	37.0	38.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	42.3	0.0		1.2	0.1	63.9	9.2	23.2	0.1	41.9	0.4	1.4
Delay (s)	110.4	24.3		71.4	30.0	108.7	82.4	78.1	41.1	109.6	37.4	40.0
Level of Service	F	C		E	C	F	F	E	D	F	D	D
Approach Delay (s)		67.8			80.8			75.4			56.9	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	69.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	152.2	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



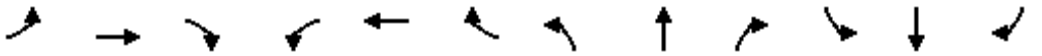
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	590	744	86	159	651	0	58	806	142	748	897	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3491		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3491		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	590	744	86	159	651	0	58	806	142	748	897	804
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	104	0	0	303
Lane Group Flow (vph)	590	824	0	159	651	0	58	806	38	748	897	501
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	26.6	44.3		9.9	27.6		5.1	36.7	36.7	33.3	64.9	64.9
Effective Green, g (s)	28.1	45.8		11.4	29.1		6.6	39.7	39.7	34.8	67.9	67.9
Actuated g/C Ratio	0.19	0.31		0.08	0.20		0.04	0.27	0.27	0.24	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	653	1082		270	711		76	942	422	808	1611	713
v/s Ratio Prot	c0.17	0.24		0.05	c0.18		0.03	c0.23		c0.22	0.26	
v/s Ratio Perm									0.02			0.32
v/c Ratio	0.90	0.76		0.59	0.92		0.76	0.86	0.09	0.93	0.56	0.70
Uniform Delay, d1	58.5	46.0		65.9	58.1		69.8	51.3	40.5	55.2	29.0	31.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.8	3.0		2.5	16.3		33.7	8.3	0.2	16.2	0.7	3.7
Delay (s)	74.2	49.0		68.4	74.4		103.5	59.6	40.6	71.4	29.6	35.6
Level of Service	E	D		E	E		F	E	D	E	C	D
Approach Delay (s)		59.5			73.2			59.4			44.3	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	147.7	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



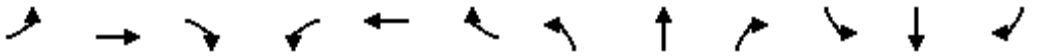
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	571	720	84	154	632	0	56	780	138	728	867	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3491		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3491		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	571	720	84	154	632	0	56	780	138	728	867	778
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	101	0	0	305
Lane Group Flow (vph)	571	798	0	154	632	0	56	780	37	728	867	473
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	26.2	44.0		9.5	27.3		4.9	35.6	35.6	32.8	63.5	63.5
Effective Green, g (s)	27.7	45.5		11.0	28.8		6.4	38.6	38.6	34.3	66.5	66.5
Actuated g/C Ratio	0.19	0.31		0.08	0.20		0.04	0.27	0.27	0.24	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	654	1092		264	715		74	930	417	809	1603	709
v/s Ratio Prot	c0.17	0.23		0.04	c0.18		0.03	c0.22		c0.21	0.25	
v/s Ratio Perm									0.02			0.30
v/c Ratio	0.87	0.73		0.58	0.88		0.76	0.84	0.09	0.90	0.54	0.67
Uniform Delay, d1	57.1	44.5		65.0	56.7		68.7	50.5	40.2	53.9	28.4	30.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	2.3		2.5	12.3		32.8	7.3	0.2	12.7	0.6	3.0
Delay (s)	69.3	46.8		67.5	69.0		101.6	57.8	40.3	66.6	29.0	33.8
Level of Service	E	D		E	E		F	E	D	E	C	C
Approach Delay (s)		56.1			68.7			57.8			42.1	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	145.4	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



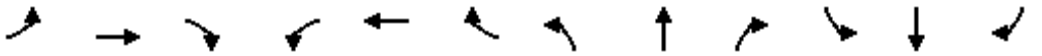
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	590	744	86	159	651	679	58	806	142	748	897	804
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3491		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3491		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	590	744	86	159	651	679	58	806	142	748	897	804
RTOR Reduction (vph)	0	6	0	0	0	257	0	0	108	0	0	275
Lane Group Flow (vph)	590	824	0	159	651	422	58	806	34	748	897	529
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	24.5	52.0		10.0	37.5	37.5	5.3	33.0	33.0	31.5	59.2	59.2
Effective Green, g (s)	26.0	53.5		11.5	39.0	39.0	6.8	36.0	36.0	33.0	62.2	62.2
Actuated g/C Ratio	0.17	0.36		0.08	0.26	0.26	0.05	0.24	0.24	0.22	0.41	0.41
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	595	1245		268	938	403	77	841	377	755	1453	643
v/s Ratio Prot	c0.17	0.24		0.05	0.18		0.03	c0.23		c0.22	0.26	
v/s Ratio Perm						c0.27			0.02			0.34
v/c Ratio	0.99	0.66		0.59	0.69	1.05	0.75	0.96	0.09	0.99	0.62	0.82
Uniform Delay, d1	61.9	40.6		67.0	50.1	55.5	70.8	56.3	44.3	58.3	34.5	39.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.6	1.1		2.7	2.0	57.9	31.4	21.6	0.2	30.3	1.1	9.3
Delay (s)	96.5	41.8		69.7	52.1	113.4	102.2	77.9	44.5	88.7	35.6	48.3
Level of Service	F	D		E	D	F	F	E	D	F	D	D
Approach Delay (s)		64.5			81.9			74.6			56.0	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	66.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



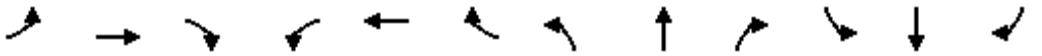
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	571	720	84	154	632	662	56	780	138	728	867	778
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3490		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3490		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	571	720	84	154	632	662	56	780	138	728	867	778
RTOR Reduction (vph)	0	6	0	0	0	258	0	0	105	0	0	275
Lane Group Flow (vph)	571	798	0	154	632	404	56	780	33	728	867	503
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	24.5	52.9		9.6	38.0	38.0	4.9	32.5	32.5	31.5	59.1	59.1
Effective Green, g (s)	26.0	54.4		11.1	39.5	39.5	6.4	35.5	35.5	33.0	62.1	62.1
Actuated g/C Ratio	0.17	0.36		0.07	0.26	0.26	0.04	0.24	0.24	0.22	0.41	0.41
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	595	1265		259	950	408	72	829	372	755	1451	642
v/s Ratio Prot	c0.17	0.23		0.04	0.18		0.03	c0.22		c0.21	0.25	
v/s Ratio Perm						c0.26			0.02			0.32
v/c Ratio	0.96	0.63		0.59	0.67	0.99	0.78	0.94	0.09	0.96	0.60	0.78
Uniform Delay, d1	61.5	39.5		67.3	49.3	55.1	71.1	56.2	44.6	57.9	34.2	38.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.7	0.8		2.8	1.5	41.9	38.0	18.9	0.2	24.0	0.9	7.0
Delay (s)	88.2	40.4		70.1	50.9	97.0	109.1	75.1	44.8	82.0	35.2	45.2
Level of Service	F	D		E	D	F	F	E	D	F	D	D
Approach Delay (s)		60.2			74.0			72.8			52.8	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	62.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



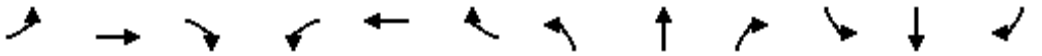
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	654	774	124	184	754	0	120	876	168	919	1212	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3464		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3464		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	654	774	124	184	754	0	120	876	168	919	1212	723
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	128	0	0	298
Lane Group Flow (vph)	654	889	0	184	754	0	120	876	40	919	1212	425
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	26.6	46.6		9.3	29.3		12.3	33.0	33.0	37.6	58.3	58.3
Effective Green, g (s)	28.1	48.1		10.8	30.8		13.8	36.0	36.0	39.1	61.3	61.3
Actuated g/C Ratio	0.19	0.32		0.07	0.21		0.09	0.24	0.24	0.26	0.41	0.41
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	643	1110		252	741		156	841	377	894	1432	634
v/s Ratio Prot	c0.19	0.26		0.05	c0.21		0.07	c0.25		c0.27	0.35	
v/s Ratio Perm									0.03			0.27
v/c Ratio	1.02	0.80		0.73	1.02		0.77	1.04	0.11	1.03	0.85	0.67
Uniform Delay, d1	61.0	46.6		68.2	59.6		66.5	57.0	44.5	55.4	40.1	36.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	4.1		9.5	37.5		18.9	42.4	0.2	37.5	5.3	3.4
Delay (s)	100.8	50.6		77.7	97.1		85.5	99.4	44.7	92.9	45.3	39.5
Level of Service	F	D		E	F		F	F	D	F	D	D
Approach Delay (s)		71.8			93.3			90.1			59.2	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	72.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



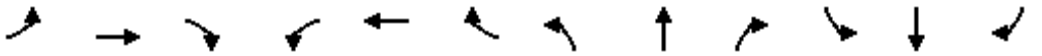
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	632	750	120	179	731	0	116	848	163	892	1173	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3464		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3464		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	632	750	120	179	731	0	116	848	163	892	1173	699
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	122	0	0	291
Lane Group Flow (vph)	632	862	0	179	731	0	116	848	41	892	1173	408
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	25.7	45.3		8.9	28.5		11.9	34.8	34.8	37.5	60.4	60.4
Effective Green, g (s)	27.2	46.8		10.4	30.0		13.4	37.8	37.8	39.0	63.4	63.4
Actuated g/C Ratio	0.18	0.31		0.07	0.20		0.09	0.25	0.25	0.26	0.42	0.42
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	622	1080		242	722		152	883	396	892	1481	655
v/s Ratio Prot	c0.18	0.25		0.05	c0.20		0.07	c0.24		c0.26	0.33	
v/s Ratio Perm									0.03			0.26
v/c Ratio	1.02	0.80		0.74	1.01		0.76	0.96	0.10	1.00	0.79	0.62
Uniform Delay, d1	61.4	47.3		68.5	60.0		66.7	55.4	43.1	55.5	37.6	33.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.2	4.0		10.3	36.6		18.9	21.4	0.2	30.1	3.4	2.5
Delay (s)	101.6	51.3		78.7	96.6		85.6	76.8	43.3	85.6	41.0	36.4
Level of Service	F	D		E	F		F	E	D	F	D	D
Approach Delay (s)		72.4			93.1			72.9			54.2	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	67.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



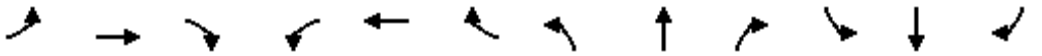
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	654	774	124	184	754	769	120	876	168	919	1212	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3464		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3464		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	654	774	124	184	754	769	120	876	168	919	1212	723
RTOR Reduction (vph)	0	9	0	0	0	282	0	0	129	0	0	268
Lane Group Flow (vph)	654	889	0	184	754	487	120	876	39	919	1212	455
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	24.5	50.2		9.8	35.5	35.5	10.1	32.0	32.0	34.5	56.4	56.4
Effective Green, g (s)	26.0	51.7		11.3	37.0	37.0	11.6	35.0	35.0	36.0	59.4	59.4
Actuated g/C Ratio	0.17	0.34		0.08	0.25	0.25	0.08	0.23	0.23	0.24	0.40	0.40
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	595	1193		263	890	383	131	817	367	823	1387	614
v/s Ratio Prot	c0.19	0.26		0.05	0.21		0.07	c0.25		c0.27	0.35	
v/s Ratio Perm						c0.31			0.02			0.29
v/c Ratio	1.10	0.75		0.70	0.85	1.27	0.92	1.07	0.11	1.12	0.87	0.74
Uniform Delay, d1	62.0	43.3		67.7	53.8	56.5	68.7	57.5	45.2	57.0	41.8	38.7
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	67.0	2.4		6.9	7.3	141.5	53.0	52.7	0.2	68.5	6.8	5.6
Delay (s)	129.0	45.7		74.6	61.1	198.0	121.7	110.2	45.5	125.5	48.7	44.3
Level of Service	F	D		E	E	F	F	F	D	F	D	D
Approach Delay (s)		80.8			124.3			102.0			72.3	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	91.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



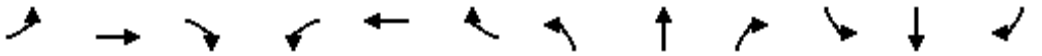
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	632	750	120	179	731	749	116	848	163	892	1173	699
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3464		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3464		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	632	750	120	179	731	749	116	848	163	892	1173	699
RTOR Reduction (vph)	0	9	0	0	0	284	0	0	126	0	0	273
Lane Group Flow (vph)	632	861	0	179	731	465	116	848	37	892	1173	426
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	24.5	50.0		10.8	36.3	36.3	11.2	31.0	31.0	34.7	54.5	54.5
Effective Green, g (s)	26.0	51.5		12.3	37.8	37.8	12.7	34.0	34.0	36.2	57.5	57.5
Actuated g/C Ratio	0.17	0.34		0.08	0.25	0.25	0.08	0.23	0.23	0.24	0.38	0.38
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	595	1189		287	909	391	144	794	356	828	1343	594
v/s Ratio Prot	c0.18	0.25		0.05	0.20		0.07	c0.24		c0.26	0.33	
v/s Ratio Perm						c0.30			0.02			0.27
v/c Ratio	1.06	0.72		0.62	0.80	1.19	0.81	1.07	0.10	1.08	0.87	0.72
Uniform Delay, d1	62.0	43.0		66.6	52.6	56.1	67.4	58.0	45.9	56.9	42.9	39.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.5	2.0		3.4	5.0	107.7	26.0	51.7	0.2	54.2	7.0	4.9
Delay (s)	116.5	45.1		70.0	57.6	163.8	93.5	109.7	46.2	111.1	49.9	44.2
Level of Service	F	D		E	E	F	F	F	D	F	D	D
Approach Delay (s)		75.1			106.9			98.8			68.2	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	83.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	100.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



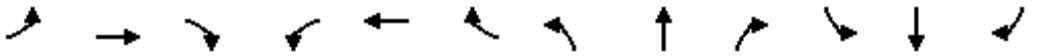
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	738	1032	85	113	618	0	51	804	179	1065	1269	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3513		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3513		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	738	1032	85	113	618	0	51	804	179	1065	1269	795
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	137	0	0	329
Lane Group Flow (vph)	738	1113	0	113	618	0	51	804	42	1065	1269	466
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	29.5	48.5		4.5	23.5		4.6	32.1	32.1	42.5	70.0	70.0
Effective Green, g (s)	31.0	50.0		6.0	25.0		6.1	35.1	35.1	44.0	73.0	73.0
Actuated g/C Ratio	0.21	0.33		0.04	0.17		0.04	0.23	0.23	0.29	0.48	0.48
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	704	1162		139	597		68	814	365	999	1693	749
v/s Ratio Prot	c0.21	0.32		0.03	c0.17		0.03	c0.23		c0.31	0.36	
v/s Ratio Perm									0.03			0.30
v/c Ratio	1.05	0.96		0.81	1.04		0.75	0.99	0.12	1.07	0.75	0.62
Uniform Delay, d1	60.0	49.5		72.0	63.0		71.7	57.8	45.8	53.5	31.6	28.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	47.3	17.0		28.2	46.2		34.3	28.4	0.3	47.8	2.2	2.1
Delay (s)	107.3	66.5		100.2	109.3		106.1	86.1	46.0	101.4	33.8	31.0
Level of Service	F	E		F	F		F	F	D	F	C	C
Approach Delay (s)		82.7			107.9			80.2			56.1	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	72.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



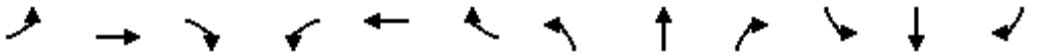
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	714	1000	82	109	600	0	49	778	174	1032	1229	769
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3513		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3513		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	714	1000	82	109	600	0	49	778	174	1032	1229	769
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	134	0	0	330
Lane Group Flow (vph)	714	1078	0	109	600	0	49	778	40	1032	1229	439
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	29.5	48.5		4.5	23.5		4.6	32.1	32.1	42.5	70.0	70.0
Effective Green, g (s)	31.0	50.0		6.0	25.0		6.1	35.1	35.1	44.0	73.0	73.0
Actuated g/C Ratio	0.21	0.33		0.04	0.17		0.04	0.23	0.23	0.29	0.48	0.48
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	704	1162		139	597		68	814	365	999	1693	749
v/s Ratio Prot	c0.21	0.31		0.03	c0.17		0.03	c0.22		c0.30	0.35	
v/s Ratio Perm									0.03			0.28
v/c Ratio	1.01	0.93		0.78	1.01		0.72	0.96	0.11	1.03	0.73	0.59
Uniform Delay, d1	60.0	48.8		71.9	63.0		71.7	57.2	45.7	53.5	31.1	28.2
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	37.5	12.4		23.4	38.1		28.5	21.6	0.3	37.3	1.9	1.7
Delay (s)	97.6	61.2		95.3	101.1		100.1	78.9	46.0	90.9	32.9	29.9
Level of Service	F	E		F	F		F	E	D	F	C	C
Approach Delay (s)		75.7			100.2			74.2			51.9	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	67.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



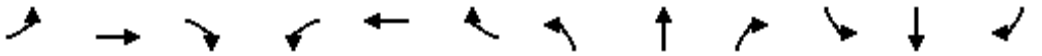
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	738	1032	85	113	618	751	51	804	179	1065	1269	795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3513		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3513		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	738	1032	85	113	618	751	51	804	179	1065	1269	795
RTOR Reduction (vph)	0	4	0	0	0	326	0	0	138	0	0	294
Lane Group Flow (vph)	738	1113	0	113	618	425	51	804	41	1065	1269	501
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	26.5	51.1		5.9	30.5	30.5	4.6	31.1	31.1	39.5	66.0	66.0
Effective Green, g (s)	28.0	52.6		7.4	32.0	32.0	6.1	34.1	34.1	41.0	69.0	69.0
Actuated g/C Ratio	0.19	0.35		0.05	0.21	0.21	0.04	0.23	0.23	0.27	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	636	1222		171	764	328	68	791	354	931	1600	708
v/s Ratio Prot	c0.21	0.32		0.03	0.17		0.03	c0.23		c0.31	0.36	
v/s Ratio Perm						c0.27			0.03			0.32
v/c Ratio	1.16	0.91		0.66	0.81	1.30	0.75	1.02	0.12	1.14	0.79	0.71
Uniform Delay, d1	61.5	47.0		70.6	56.6	59.5	71.7	58.5	46.5	55.0	35.0	33.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	88.8	10.2		7.9	6.1	154.5	34.3	36.2	0.3	77.6	3.2	3.9
Delay (s)	150.4	57.2		78.5	62.7	214.0	106.1	94.7	46.8	132.6	38.1	36.8
Level of Service	F	E		E	E	F	F	F	D	F	D	D
Approach Delay (s)		94.3			140.6			86.9			70.0	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	92.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	104.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



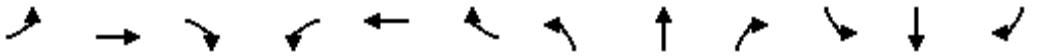
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	714	1000	82	109	600	732	49	778	174	1032	1229	769
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3513		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3513		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	714	1000	82	109	600	732	49	778	174	1032	1229	769
RTOR Reduction (vph)	0	4	0	0	0	326	0	0	135	0	0	295
Lane Group Flow (vph)	714	1078	0	109	600	406	49	778	39	1032	1229	474
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	26.5	51.3		5.7	30.5	30.5	4.5	31.1	31.1	39.5	66.1	66.1
Effective Green, g (s)	28.0	52.8		7.2	32.0	32.0	6.0	34.1	34.1	41.0	69.1	69.1
Actuated g/C Ratio	0.19	0.35		0.05	0.21	0.21	0.04	0.23	0.23	0.27	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	636	1227		166	764	328	67	791	354	931	1602	709
v/s Ratio Prot	c0.21	0.31		0.03	0.17		0.03	c0.22		c0.30	0.35	
v/s Ratio Perm						c0.26			0.02			0.31
v/c Ratio	1.12	0.88		0.66	0.79	1.24	0.73	0.98	0.11	1.11	0.77	0.67
Uniform Delay, d1	61.5	46.1		70.7	56.3	59.5	71.8	58.2	46.5	55.0	34.3	32.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	74.4	7.3		7.6	5.1	130.1	30.8	27.9	0.3	63.9	2.6	3.0
Delay (s)	136.0	53.4		78.4	61.4	189.6	102.6	86.1	46.7	119.0	36.9	35.0
Level of Service	F	D		E	E	F	F	F	D	F	D	D
Approach Delay (s)		86.2			127.8			80.1			64.4	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	84.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



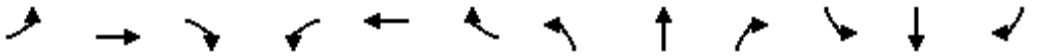
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	706	1010	111	152	696	0	56	780	185	976	1293	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3495		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3495		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	706	1010	111	152	696	0	56	780	185	976	1293	838
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	137	0	0	316
Lane Group Flow (vph)	706	1116	0	152	696	0	56	780	48	976	1293	522
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	28.8	49.5		6.3	27.0		5.0	31.7	31.7	40.1	66.8	66.8
Effective Green, g (s)	30.3	51.0		7.8	28.5		6.5	34.7	34.7	41.6	69.8	69.8
Actuated g/C Ratio	0.20	0.34		0.05	0.19		0.04	0.23	0.23	0.28	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	688	1179		180	680		73	804	361	945	1619	716
v/s Ratio Prot	c0.21	0.32		0.04	c0.19		0.03	c0.22		c0.28	0.37	
v/s Ratio Perm									0.03			0.34
v/c Ratio	1.03	0.95		0.84	1.02		0.77	0.97	0.13	1.03	0.80	0.73
Uniform Delay, d1	60.4	48.7		71.0	61.3		71.6	57.7	46.2	54.8	34.7	33.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	41.1	14.9		28.1	40.6		35.3	24.7	0.3	38.0	3.2	4.4
Delay (s)	101.5	63.7		99.1	101.9		106.9	82.4	46.6	92.8	37.9	37.4
Level of Service	F	E		F	F		F	F	D	F	D	D
Approach Delay (s)		78.3			101.4			77.3			55.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



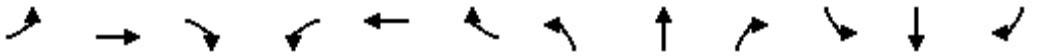
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	682	979	107	147	675	0	54	755	179	947	1252	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3495		3502	3610		1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3495		3502	3610		1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	682	979	107	147	675	0	54	755	179	947	1252	810
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	137	0	0	315
Lane Group Flow (vph)	682	1081	0	147	675	0	54	755	42	947	1252	495
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	28.5	48.9		6.1	26.5		4.8	32.1	32.1	40.5	67.8	67.8
Effective Green, g (s)	30.0	50.4		7.6	28.0		6.3	35.1	35.1	42.0	70.8	70.8
Actuated g/C Ratio	0.20	0.33		0.05	0.19		0.04	0.23	0.23	0.28	0.47	0.47
Clearance Time (s)	5.5	5.5		5.5	5.5		5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3		2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	681	1165		176	668		71	814	365	954	1642	727
v/s Ratio Prot	0.20	c0.31		0.04	c0.19		0.03	c0.22		c0.28	0.36	
v/s Ratio Perm									0.03			0.32
v/c Ratio	1.00	0.93		0.84	1.01		0.76	0.93	0.12	0.99	0.76	0.68
Uniform Delay, d1	60.5	48.6		71.1	61.5		71.7	56.8	45.8	54.4	33.2	31.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.8	12.4		26.9	37.4		35.3	17.0	0.3	27.2	2.5	3.2
Delay (s)	95.4	61.0		98.0	99.0		106.9	73.7	46.0	81.6	35.7	34.6
Level of Service	F	E		F	F		F	E	D	F	D	C
Approach Delay (s)		74.3			98.8			70.5			49.8	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay	65.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	151.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



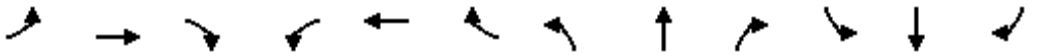
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	706	1010	111	152	696	795	56	780	185	976	1293	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3495		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3495		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	706	1010	111	152	696	795	56	780	185	976	1293	838
RTOR Reduction (vph)	0	6	0	0	0	301	0	0	140	0	0	280
Lane Group Flow (vph)	706	1115	0	152	696	494	56	780	45	976	1293	558
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	25.5	53.3		7.7	35.5	35.5	4.5	29.0	29.0	36.5	61.0	61.0
Effective Green, g (s)	27.0	54.8		9.2	37.0	37.0	6.0	32.0	32.0	38.0	64.0	64.0
Actuated g/C Ratio	0.18	0.37		0.06	0.25	0.25	0.04	0.21	0.21	0.25	0.43	0.43
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	617	1276		214	890	383	68	747	335	869	1495	662
v/s Ratio Prot	c0.21	0.32		0.04	0.19		0.03	c0.22		c0.28	0.37	
v/s Ratio Perm						c0.32			0.03			0.36
v/c Ratio	1.14	0.87		0.71	0.78	1.29	0.82	1.04	0.13	1.12	0.86	0.84
Uniform Delay, d1	61.5	44.4		69.1	52.7	56.5	71.5	59.0	47.8	56.0	39.1	38.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	83.0	6.8		9.5	4.3	149.2	51.5	45.0	0.3	70.3	5.9	10.4
Delay (s)	144.5	51.2		78.6	57.0	205.7	123.0	104.0	48.1	126.3	45.0	48.9
Level of Service	F	D		E	E	F	F	F	D	F	D	D
Approach Delay (s)		87.2			131.0			94.9			71.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	91.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	682	979	107	147	675	775	54	755	179	947	1252	810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3495		3502	3610	1553	1703	3505	1573	3433	3505	1552
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3495		3502	3610	1553	1703	3505	1573	3433	3505	1552
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	682	979	107	147	675	775	54	755	179	947	1252	810
RTOR Reduction (vph)	0	6	0	0	0	302	0	0	141	0	0	281
Lane Group Flow (vph)	682	1080	0	147	675	473	54	755	38	947	1252	529
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	25.5	54.5		7.5	36.5	36.5	4.5	28.0	28.0	36.5	60.0	60.0
Effective Green, g (s)	27.0	56.0		9.0	38.0	38.0	6.0	31.0	31.0	38.0	63.0	63.0
Actuated g/C Ratio	0.18	0.37		0.06	0.25	0.25	0.04	0.21	0.21	0.25	0.42	0.42
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	617	1304		210	914	393	68	724	325	869	1472	651
v/s Ratio Prot	c0.20	0.31		0.04	0.19		0.03	c0.22		c0.28	0.36	
v/s Ratio Perm						c0.30			0.02			0.34
v/c Ratio	1.11	0.83		0.70	0.74	1.20	0.79	1.04	0.12	1.09	0.85	0.81
Uniform Delay, d1	61.5	42.6		69.2	51.4	56.0	71.4	59.5	48.4	56.0	39.3	38.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	68.6	4.3		8.6	2.9	113.8	43.9	45.1	0.3	57.9	5.3	8.5
Delay (s)	130.1	47.0		77.8	54.3	169.8	115.3	104.6	48.7	113.9	44.6	46.8
Level of Service	F	D		E	D	F	F	F	D	F	D	D
Approach Delay (s)		79.0			112.5			95.1			67.0	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	83.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	643	707	81	138	413	410	41	677	159	717	1090	771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95		0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3493		3502	3610	1554	1703	3505	1573	3433	3505	1553
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3493		3502	3610	1554	1703	3505	1573	3433	3505	1553
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	643	707	81	138	413	410	41	677	159	717	1090	771
RTOR Reduction (vph)	0	6	0	0	0	300	0	0	117	0	0	360
Lane Group Flow (vph)	643	782	0	138	413	110	41	677	42	717	1090	411
Confl. Peds. (#/hr)	2		11	11		2	2		1	1		2
Heavy Vehicles (%)	2%	1%	3%	0%	0%	2%	6%	3%	1%	2%	3%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases						8			6			2
Actuated Green, G (s)	29.0	40.5		8.8	20.3	20.3	4.2	33.1	33.1	31.9	60.8	60.8
Effective Green, g (s)	30.5	42.0		10.3	21.8	21.8	5.7	36.1	36.1	33.4	63.8	63.8
Actuated g/C Ratio	0.22	0.30		0.07	0.16	0.16	0.04	0.26	0.26	0.24	0.46	0.46
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5	5.5	7.0	7.0	5.5	7.0	7.0
Vehicle Extension (s)	2.3	2.3		2.3	2.3	2.3	2.3	4.7	4.7	2.3	4.7	4.7
Lane Grp Cap (vph)	759	1064		261	571	245	70	918	412	832	1622	719
v/s Ratio Prot	c0.19	0.22		0.04	c0.11		0.02	c0.19		c0.21	0.31	
v/s Ratio Perm						0.07			0.03			0.26
v/c Ratio	0.85	0.73		0.53	0.72	0.45	0.59	0.74	0.10	0.86	0.67	0.57
Uniform Delay, d1	51.4	42.9		61.4	55.1	52.6	64.9	46.5	38.5	50.0	28.8	27.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.5	2.4		1.2	4.1	0.8	9.1	3.6	0.2	9.0	1.4	1.6
Delay (s)	59.9	45.3		62.7	59.2	53.3	74.0	50.2	38.8	59.0	30.2	28.7
Level of Service	E	D		E	E	D	E	D	D	E	C	C
Approach Delay (s)		51.9			57.2			49.2			37.7	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	137.8	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

OR213 & Beavercreek Road Improvements

Right Turn Acceleration Lane & Left Turn Queue

City of Oregon City

KITTELSON & ASSOCIATES

Engineer's Conceptual Estimate

Prepared By: Fred Wismer, PE		*Date: December 4, 2017*		
	This Estimate has a Rating of:	**3C**	*(See rating scale guide below.)*	
ITEM	**UNIT**	**TOTAL QUANTITY**	**UNIT PRICE**	**TOTAL COST**
Mobilization	LS	ALL	$131,000.00	$131,000.00
Traffic Control	LS	ALL	$107,000.00	$107,000.00
Erosion Control	LS	ALL	$114,000.00	$114,000.00
Removal of Structures and Obstructions	LS	ALL	$29,000.00	$29,000.00
Clearing and Grubbing	LS	ALL	$25,000.00	$25,000.00
General Earthworks	CY	30,150	$25.00	$753,750.00
Asphalt Roadway - Full Depth	SF	37,950	$6.70	$254,265.00
Pedestrian Ramp Rebuild	EA	4	$10,000.00	$40,000.00
Roadway - Shoulder	SF	7,640	$3.40	$25,976.00
Concrete Curbs - Traffic Separator	LF	285	$20.00	$5,700.00
Guardrail Barrier, Complete	LF	790	$40.00	$31,600.00
Guardrail Terminal, Complete	EA	2	$3,000.00	$6,000.00
Permanent Landscaping	SF	81,000	$1.10	$89,100.00
Pavement Markings, Complete	LS	ALL	$5,200.00	$5,200.00
Signage, Complete	LS	ALL	$12,350.00	$12,350.00
Traffic Signal Modifications, Complete	LS	ALL	$25,000.00	$25,000.00
TOTAL CONSTRUCTION COST				**$ 1,654,941**
ENGINEERING SUPPORT				
Engineering & Construction Management	LS	25%	$1,654,941.00	$413,800.00
ENGINEERING SUPPORT SUBTOTAL				**$ 413,800**
TOTAL PROJECT SUBTOTAL				**$ 2,068,741**
30% Contingency				**$ 620,630**
TOTAL ESTIMATED PROJECT COST				**$ 2,689,371**

Scope Accuracy:

Level 1: Project scope well understood and well defined.

Level 2: Project scope conceptual. Scope lacks detail due to potential permit requirements; Unknown project conditions; limited knowledge of external impacts.

Level 3: Project scope is a "vision" with limited detail.

Engineering Effort:

Level A: Preliminary engineering performed. Technical information is available, engineering calculations have been performed; clear understanding of the materials size and quantities needed to execute job. Schedule understood; staff and permitting is fairly clear, (however this element may still need refining). Project Development & Construction Contingencies ranges between 10%-20%.

Level B: Conceptual engineering performed. Technical information is available, rough engineering calculations may have been performed, or similar information from previous similar work is compared and used. Project Development Contingencies ranges between 15% to 25% and Construction Contingencies ranges between 20% to 30%.

Level C: No engineering performed. Educated guesstimating. Limited technical information available and/or analysis performed. Project Development and Construction Contingencies should be selected appropriately by Project Manager. Contingency may range up to 50%.

Spec. No.	Item No.	Item	Bid Unit	Est. Unit	Quantity	2016 Unit Price	2016 Price
		TEMPORARY FEATURES AND APPURTENANCES					
00210	10	Mobilization	Lump Sum	Lump Sum	1	$ 689,700.00	$ 689,700.00
00225	20	Temporary Protection and Direction of Traffic	Lump Sum	Lump Sum	1	$ 72,200.00	$ 72,200.00
00225	30	Temporary Signs	Sq Ft	Sq Ft	755	$ 16.00	$ 12,080.00
00225	40	Temporary Barricades, Type III	Each	Each	6	$ 120.00	$ 720.00
00225	50	Temporary Impact Attenuators, Truck Mounted	Each	Each	2	$ 11,400.00	$ 22,800.00
00225	60	Temporary Plastic Drums	Each	Each	194	$ 60.00	$ 11,640.00
00225	70	Portable Changeable Message Signs	Each	Each	3	$ 8,300.00	$ 24,900.00
00225	80	Flaggers	Hour	Hour	2000	$ 50.00	$ 100,000.00
00270	90	Temporary Fence	Ft	Ft	1,400.0	$ 3.00	$ 4,200.00
00280	100	Erosion Control	Lump Sum	Lump Sum	1	$ 58,700.00	$ 58,700.00
00280	110	Compost Erosion Blanket	Cu Yd	Cu Yd	400.0	$ 40.00	$ 16,000.00
00280	120	Check Dam	Each	Each	5	$ 140.00	$ 700.00
00280	130	Compost Filter Berm	Cu Yd	Cu Yd	240.0	$ 30.00	$ 7,200.00
00280	140	Construction Entrance	Each	Each	3	$ 1,100.00	$ 3,300.00
00280	150	Sediment Fence, Unsupported	Ft	Ft	280.0	$ 4.00	$ 1,120.00
00280	160	Inlet Protection	Each	Each	24	$ 90.00	$ 2,160.00
00290	170	Pollution Control Plan	Lump Sum	Lump Sum	1	$ 3,100.00	$ 3,100.00
		ROADWORK					
00310	180	Removal of Structures and Obstructions	Lump Sum	Lump Sum	1	$ 11,000.00	$ 11,000.00
00310	190	Removal of Pipes	Ft	Ft	591.0	$ 20.00	$ 11,820.00
00310	200	Removal of Inlets	Each	Each	3	$ 340.00	$ 1,020.00
00310	210	Removal of Guardrail	Ft	Ft	1,928.0	$ 3.70	$ 7,133.60
00310	220	Removal of Barrier	Ft	Ft	1,059.0	$ 9.00	$ 9,531.00
00320	230	Clearing and Grubbing	Lump Sum	Acre	4.0	$ 11,000.00	$ 44,000.00
00330	240	Ditch Excavation	Cu Yd	Cu Yd	664.0	$ 15.00	$ 9,960.00
00330	250	General Excavation	Cu Yd	Cu Yd	13,000	$ 12.00	$ 156,000.00
00350	260	Drainage Geotextile, Type 2	Sq Yd	Sq Yd	185	$ 7.00	$ 1,295.00
00350	270	Subgrade Geotextile	Sq Yd	Sq Yd	14,335	$ 2.00	$ 28,670.00
00350	280	Riprap Geotextile, Type 2	Sq Yd	Sq Yd	59.0	$ 7.00	$ 413.00
00350	290	Waterproofing Membrane	Sq Yd	Sq Yd	198.0	$ 42.00	$ 8,316.00
00390	300	Loose Riprap, Class 50	Cu Yd	Cu Yd	14.0	$ 57.00	$ 798.00
		DRAINAGE AND SEWERS					
00406	310	Tunneling, Boring, and Jacking	Lump Sum	Lump Sum	1	$ 11,000.00	$ 11,000.00
00430	320	8 Inch Drain Pipe	Ft	Ft	50.0	$ 21.00	$ 1,050.00
00445	330	12 Inch Storm Sewer Pipe, 5 Ft Depth	Ft	Ft	1,244.0	$ 47.00	$ 58,468.00
00445	340	12 Inch Storm Sewer Pipe, 10 Ft Depth	Ft	Ft	277.0	$ 73.00	$ 20,221.00
00445	350	18 Inch Storm Sewer Pipe, 5 Ft Depth	Ft	Ft	67.0	$ 62.00	$ 4,154.00
00445	360	18 Inch Storm Sewer Pipe, 10 Ft Depth	Ft	Ft	435.0	$ 73.00	$ 31,755.00
00445	370	12 Inch Slotted Drain Pipe, 5 Ft Depth	Ft	Ft	497.0	$ 140.00	$ 69,580.00
00445	380	18 Inch Slotted Drain Pipe, 5 Ft Depth	Ft	Ft	728.0	$ 150.00	$ 109,200.00
00445	390	Sloped End Sections, 12 Inch	Each	Each	2	$ 370.00	$ 740.00
00445	400	Sloped End Sections, 18 Inch	Each	Each	1	$ 420.00	$ 420.00
00445	410	Concrete In Blocks	Cu Yd	Cu Yd	101.0	$ 140.00	$ 14,140.00
00460	420	Paved Culvert End Slopes	Sq Ft	Sq Ft	84.0	$ 21.00	$ 1,764.00
00470	430	Concrete Storm Sewer Manholes	Ea	Ea	3	$ 6,700.00	$ 20,100.00
00470	440	Concrete Manholes, Split Flow	Ea	Ea	1	$ 7,300.00	$ 7,300.00
00470	450	Concrete Inlets, Type D	Ea	Ea	2	$ 1,600.00	$ 3,200.00
00470	460	Concrete Inlets, Type D Modified	Ea	Ea	2	$ 1,900.00	$ 3,800.00
00470	470	Concrete Inlets, Type G-2	Ea	Ea	14	$ 1,300.00	$ 18,200.00
00480	480	Drainage Curbs	Ft	Ft	128.0	$ 9.00	$ 1,152.00
00490	490	Adjusting Inlets	Each	Each	1	$ 670.00	$ 670.00
00490	500	Manholes Over Existing Sewers	Each	Each	1	$ 1,600.00	$ 1,600.00
00490	510	Connection to Existing Structures	Each	Each	5	$ 930.00	$ 4,650.00
00490	520	Cap Inlet	Each	Each	1	$ 900.00	$ 900.00
00490	530	Reconstruct Inlet	Each	Each	1	$ 1,100.00	$ 1,100.00
00495	540	Trench Resurfacing	Sq Yd	Sq Yd	66.0	$ 100.00	$ 6,600.00
00495	550	Trench Resurfacing - Grass/Misc. Landscaping	Sq Yd	Sq Yd	92.0	$ 110.00	$ 10,120.00
		RETAINING WALL No. 21424 "Holcomb"					
00596	560	Anchored Soldier Pile Wall	Sq Ft	Sq Ft	10,300.0	$ 250.00	$ 2,575,000.00
01050	570	Ornamental Protective Fence, 6 Ft	Ft	Ft	808.0	$ 170.00	$ 137,360.00
		BASES					
00620	580	Cold Plane Pavement Removal, 2 Inch Deep	Sq Yd	Sq Yd	26,952.0	$ 2.60	$ 70,075.20
00620	590	Cold Plane Pavement Removal, 4 Inch Deep	Sq Yd	Sq Yd	1,315.0	$ 4.70	$ 6,180.50
00641	600	Aggregate Base	Ton	Ton	10,300.0	$ 20.00	$ 206,000.00

00641	610	Free Draining Aggregate Base	Ton	Ton	29,730.0	$	20.00	$	594,600.00
		WEARING SURFACES							
00730	620	Emulsified Asphalt for Tack Coat	Ton	Ton	19.0	$	700.00	$	13,300.00
00745	630	Level 3, 1/2 Inch Dense HMAC	Ton	Ton	8,700.0	$	70.00	$	609,000.00
00745	640	PG 70-22 Asphalt in HMAC	Ton	Ton	500.0	$	619.00	$	309,500.00
		PERMANENT TRAFFIC SAFETY AND GUIDANCE DEVICES							
00810	650	Guardrail, Type 2A	Ft	Ft	1,050.0	$	20.00	$	21,000.00
00810	660	Guardrail, Type 3	Ft	Ft	25.0	$	30.00	$	750.00
00810	670	Guardrail Anchors, Type 1 Modified	Each	Each	2	$	570.00	$	1,140.00
00810	680	Guardrail End Pieces, Type C	Each	Each	2	$	130.00	$	260.00
00810	690	Guardrail Transitions	Each	Each	2	$	2,600.00	$	5,200.00
00810	700	Guardrail Connections	Each	Each	2	$	600.00	$	1,200.00
00810	710	Guardrail Terminals, Non-Flared, Test Level 3	Each	Each	1	$	2,100.00	$	2,100.00
00820	720	Concrete Barrier	Ft	Ft	4,116.0	$	60.00	$	246,960.00
00830	730	Impact Attenuator, Type L	Each	Each	1	$	28,900.00	$	28,900.00
00830	740	Remove and Reinstall Impact Attenuator	Each	Each	1	$	5,200.00	$	5,200.00
00865	750	Methyl Methacrylate, Profile, 120 Mils, Extruded	Ft	Ft	19,500.0	$	2.40	$	46,800.00
00867	760	Pavement Legend, Type B: Elongated Arrows	Each	Each	20	$	400.00	$	8,000.00
00867	770	Pavement Legend, Type B: Wrong Way Arrows	Each	Each	6	$	500.00	$	3,000.00
00867	780	Pavement Legend, Type B-HS: Bicycle Lane Stencil	Each	Each	3	$	300.00	$	900.00
00867	790	Pavement Bar, Type B	Sq Ft	Sq Ft	590.0	$	7.80	$	4,602.00
		PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS							
00902	800	Crosswalk Closure Barricades	Each	Each	2	$	600.00	$	1,200.00
00905	810	Remove Existing Signs	Lump Sum	Lump Sum	1	$	6,000.00	$	6,000.00
00905	820	Remove and Reinstall Existing Signs	Lump Sum	Lump Sum	1	$	6,000.00	$	6,000.00
00910	830	Wood Sign Posts	FBM	FBM	950	$	7.80	$	7,410.00
00920	840	Sign Support Footings	Lump Sum	Lump Sum	1	$	8,800.00	$	8,800.00
00930	850	Bridge Structure Mounts	Lump Sum	Lump Sum	1	$	1,600.00	$	1,600.00
00930	860	Multi-post Breakaway Sign Supports	Lump Sum	Lump Sum	1	$	13,000.00	$	13,000.00
00930	870	Triangular Base Breakaway Sign Supports	Lump Sum	Lump Sum	1	$	7,000.00	$	7,000.00
00930	880	Perforated Steel Square Tube Sign Supports	Lump Sum	Lump Sum	1	$	600.00	$	600.00
00940	890	Type "F1" Signs In Place	Sq Ft	Sq Ft	23.0	$	23.20	$	533.60
00940	900	Type "G" Signs In Place	Sq Ft	Sq Ft	170.0	$	23.20	$	3,944.00
00940	910	Type "R" Signs In Place	Sq Ft	Sq Ft	50.0	$	21.00	$	1,050.00
00940	920	Type "W1" Signs In Place	Sq Ft	Sq Ft	84.0	$	20.00	$	1,680.00
00940	930	Type "W7" Signs In Place	Sq Ft	Sq Ft	12.0	$	25.00	$	300.00
00940	940	Type "Y1" Signs In Place	Sq Ft	Sq Ft	32.0	$	21.00	$	672.00
00940	950	Type "Y2" Signs In Place	Sq Ft	Sq Ft	25.0	$	21.00	$	525.00
00963	960	42 Inch Diameter Signal Support Drilled Shaft	Ft	Ft	16.0	$	700.00	$	11,200.00
00990	970	Traffic Signal Installation, OR213/Redland Road	Lump Sum	Lump Sum	1	$	93,000.00	$	93,000.00
00990	980	Loop Detector Installation	Lump Sum	Lump Sum	1	$	52,000.00	$	52,000.00
		RIGHT OF WAY DEVELOPMENT AND CONTROL							
01030	990	Weed Control	Acre	Acre	1.25	$	11,000.00	$	13,750.00
01030	1000	Seeding Mobilization	Each	Each	1	$	500.00	$	500.00
01030	1010	Permanent Seeding, Mix No. 1	Acre	Acre	3.50	$	1,900.00	$	6,650.00
01030	1020	Restoration Seeding, Mix No. 1	Acre	Acre	0.10	$	4,700.00	$	470.00
01040	1030	Soil Testing	Each	Each	1	$	410.00	$	410.00
01030	1040	Topsoil	Cu Yd	Cu Yd	1,300.0	$	16.00	$	20,800.00
01092	1050	Water Quality Basin "SW12"	Lump Sum	Lump Sum	1	$	24,400.00	$	24,400.00

SUB-TOTAL OF ITEMS	$	6,902,890.00
Contingencies @ 15%	$	1,035,500.00
Preliminary Engineering @ 8%	$	635,100.00
Construction Engineering @ 15%	$	1,190,800.00
TOTAL CONSTRUCTION ESTIMATE (PHASE 2):	**$**	**9,764,290.00**

Oregon

Department of Transportation
Region 1 Headquarters
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Planning Commission
City of Oregon City
PO Box 3040
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The Oregon Department of Transportation (ODOT) is pleased to offer our support for the City of Oregon City's proposed alternative mobility targets in the vicinity of Highway 213 and Beavercreek Road. ODOT staff participated in the development of the City's Transportation System Plan which included direction to perform a refinement plan to develop alternative mobility targets. ODOT staff also participated in the Technical Advisory Group and Community Advisory Group for the Highway 213 Corridor Alternative Mobility Targets effort.

ODOT supports the proposed alternative mobility targets at OR 213 and Beavercreek Road based on inclusion of the westbound right turn merge lane project at OR213/Beavercreek Road in the City's TSP *and* in the Financially Constrained RTP project list, as well as the addition of the Beavercreek Road sidewalk infill and Hwy 213 and Beavercreek Road safety Improvement projects into the City's TSP. The length of the merge lane is to be determined during project development, must be approved by ODOT, and should not be specified in the project description. ODOT supports the proposed performance measurement methodology based on average annual weekday peak hour performance.

ODOT advises the City that alternative mobility targets are not needed at Redland Road based on inclusion of a proposed project (TSP project D79, RTP project 10119) in the Financially Constrained RTP project list. With this project in place, the intersection meets current Oregon Highway Plan mobility targets. The project may be assumed to be in place for purposes of future plan amendments based on the Transportation Planning Rule (TPR), OAR 660-0012-0060(4)(b)(C). Any one of the options under section -0060(4) are sufficient for projects to be considered planned improvements that jurisdictions and applicants are able to rely on for purposes of compliance with section -0060 of the TPR.

ODOT requests that the City state its intent to pursue actual funding of both the Beavercreek and Redland Road projects (as described in the City's TSP and Financially Constrained RTP) as opportunities arise, including the proposed regional transportation funding bond measure.

Upon local adoption of the proposed alternative mobility targets, ODOT staff will work with the City to take the proposed targets to the Oregon Transportation Commission for adoption. Let us know if we can be of any more assistance,

Jon Makler

Jon Makler
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ODOT Region 1