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3200 SOUTH & SR-165
INTERSECTION RE-CONFIGURATION

CONCEPT REPORT
(FINAL DRAFT)

Prepared For:

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1.0 Introduction

Civil Solutions Group, Inc. was hired in early July of 2014 by the Nibley City Corporation to develop and evaluate concepts for the re-configuration of the 3200 South & State Route 165 intersection, as well as to contact affected property owners in the area and personally discuss the project with them. See Figure 1 for a map of the Study area. Finding ways to improve pedestrian, bicycle, and vehicular safety were identified as the highest priority of the project given the intersection's high accident rate in recent years. Pedestrian activity and juvenile vehicular traffic in the area are also expected to significantly increase above current levels with the impending construction of Millville High School just one-mile to the north. Traffic flow (including east-west mobility), community and environmental impacts, economic development potential, and overall project costs were identified as additional priorities. The current configuration does not allow for pedestrians to safely cross SR-165, nor does it allow for direct east-west travel between Nibley and Millville, but rather forces motorists to engage in dangerous high-speed merging movements. Funding for this study was obtained by Nibley City from the Cache County Council of Governments with the purpose of analyzing ways to improve area safety and mobility, as well as plan for long-term growth.

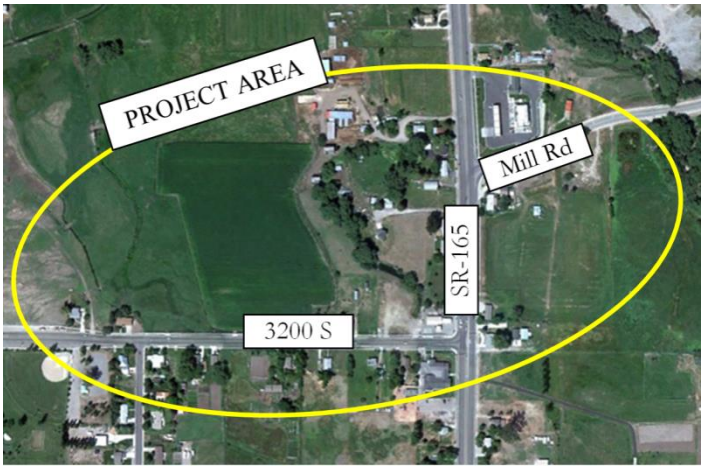

FIGURE 1. Study Area

Following discussions with Mayor Shaun Dustin and Nibley City staff on July 16th concerning the study area's existing conditions and general ideas for improvement, preparations were made for an official Project Kickoff Meeting on July 31st. Representatives from all affected jurisdictions and utility companies were invited to this meeting to discuss the existing problems facing the intersection and to discuss the pros and cons of a handful of preliminary concepts. A summary of those invited, those in attendance, and their feedback can be found in Appendix A.

Input received from these early discussions allowed the consultant team to screen-out several alignments that did not meet city objectives and to hone in on three general concepts. These three initial options were then used as the talking points for subsequent meetings with affected property owners. Property owner meetings continued through the month of August and into early September, as well as periodic meetings with the Mayor and City Staff. Feedback received during this period allowed for the continual refinement of the three proposed options. Ultimately these three refined alternatives, the results of the stakeholder involvement effort, and the engineer's evaluation and recommendation were presented at a City Council Meeting

held on September 4th, 2014. Many of those in attendance who voiced their opinions at this meeting expressed a desire to explore a simpler modification to the 3200 South and SR-165 intersection which would involve changing the existing signal to stop traffic in all three directions and to forgo the construction of addition roadway. This possibility is also being considered by the city independent of the three options evaluated in this report. The information presented in this report is intended to aid the city in the development of broader long-term plans, in the programming of city budgets, and in developing construction drawings for whatever option the city may ultimately choose to pursue.

This report will cover a review of the existing intersection conditions, concept development process and methodology, an overview of property owner involvement, the results of some cursory land-planning efforts, the cost estimating approach, traffic analysis results, and lastly concept comparison and option recommendation methodology.

2.0 Review of Existing Conditions

2.1 Existing Intersection Conditions

The existing intersection at 3200 South and SR-165, as seen in Figure 2 is currently configured as a signalized three-way "High-T" style intersection. Prior to 2008 northbound and southbound traffic free-flowed through the intersection, while the west leg approach (3200 South) was stop-sign controlled. In 2008, UDOT Region 1 reconfigured the intersection by adding dedicated southbound and eastbound right-turn lanes, median barrier curb, and three signal mast arms. Northbound traffic is allowed to free-flow through the intersection while the (1) southbound vehicles and (2) eastbound-to-northbound vehicles are controlled by the two signal phases. Since this High-T installation was a retrofit job, the signal design presents several challenges to user safety.

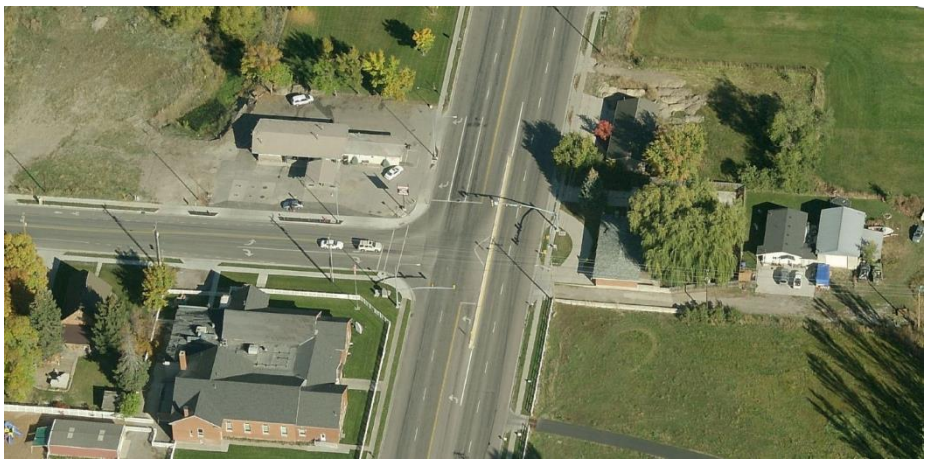

FIGURE 2. Bird's Eye Aerial View of 3200 South and SR-165 Intersection

The lack of crosswalks across SR-165 and the installation of the median curbing make it impossible for pedestrians to cross safely. There is one crosswalk with associated pedestrian ramps parallel to SR-165 at the 3200 South intersection, but not at Mill Road. The Mill Road intersection features a single pedestrian ramp on the north side, but not the south. The large curb radii at this intersection cause a significant increase in crossing distance, totaling 80 feet,

versus the 50-foot crossing at 3200 South. Although bike lanes are provided on the west leg of the intersection, SR-165 itself does not have any bike facilities to which these can connect, thus forcing westbound bicyclists onto sidewalks or into lanes of vehicular traffic when arriving at the intersection.

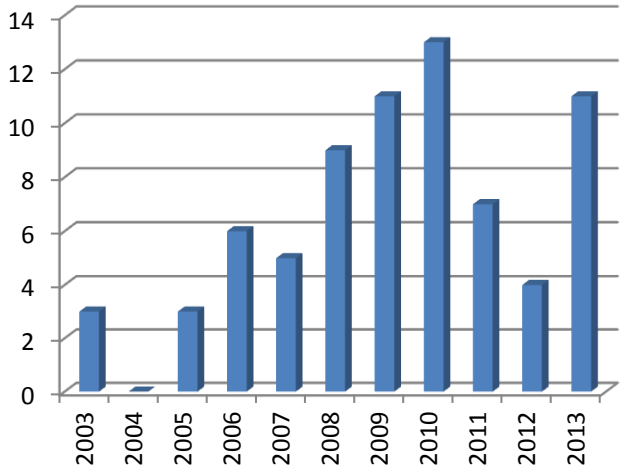

FIGURE 3. 10-year Crash Data

The eastbound-to-northbound turning vehicles have the advantage of a protected signal phase; however after turning into the center acceleration lane they are forced to merge into traffic in a very short distance. This is compounded by the fact that the distance between 3200 South Street and Mill Road only totals 740 feet. The American Association of State Highway and Transportation Official's "A Policy on Geometric Design of Highways and Streets", recommends a distance of 490 feet for a vehicle beginning at 15mph and accelerating to 45mph (AASHTO Table 10-3). However, this distance does not include decision sight distance, "the distance needed for a driver to detect an unexpected or otherwise difficult-to-perceive information source or condition in a roadway environment" (AASHTO 3.2.6). The "High-T" style design is unfamiliar to most motorists and would therefore warrant this added distance, which is 395 feet for 45mph (AAHSTO Table 3-3). Acceleration and decision sight distance total 885 feet, which is less than the 740 feet between the two intersections. The lack of sufficient distance is worsened by the fact that SR-165 was designed for 55mph speeds, but the posted speed limit has subsequently been dropped through Nibley City limits to 45mph. Drivers are thus psychologically enticed by the wide and flat geometrics of the road to drive faster than the posted limit. The road should then, in theory, require even greater acceleration and decision sight distances in order effectuate the maneuver safely. Furthermore, left-turning vehicles from Mill Road use this same center lane as waiting space before merging into southbound traffic during heavy traffic conditions.

For the reasons explained above, the installation of the "High-T" in 2008 resulted in a significant increase in average yearly accidents as evidenced by the 10-year crash data shown in Figure 3 The full crash data report from the Utah Highway Safety Office can be found in Appendix B. Compounding the safety problems associated with the "High-T" is the fact that many drivers traveling from Millville to Nibley or vice-versa must turn left and then quickly merge across two-lanes of traffic. These weaving and merging movements could be resolved with the installation of an additional signal at Mill Road; however, this would violate State Rule "R930-6 Access Management" (R930-6, Table 1) which requires at least one-mile between signalized intersections on a type 3 facility (UDOT Access Management Map, 2014). The only way to fully resolve the area's pedestrian and vehicular safety issues, as well as facilitate east-west mobility, is to bring the two intersections together into a single signal.

Section 2.2 Population and Traffic Growth

Nibley grew 165.9% from 2,045 residents in 2000 to 5,438 in 2010 (US Census, Nibley City). Despite this remarkably high rate, traffic levels in the study area have remained relatively constant in recent years most likely due to rising gas prices and the recent economic recession. The slight spike in traffic on Mill Road during 2011 and 2012 is the result of flooding which damaged and closed the bridge to the north, thus forcing traffic patterns to re-route. The 10-year Annual Average Daily Traffic figures obtained from UDOT record can be found in Figure 4. One can only speculate what the rate of future population and economic growth will actually be; however, historically Cache Valley has doubled in population every 30 years (US Census, Cache County), and that most of the growth in the last decade has occurred in municipalities outside of Logan City proper. Nibley City is therefore expected to experience much higher levels of growth. Traffic projects performed as part of this study predict under a "no-build 2040" scenario that intersection performance at SR-165 and 3200 South will drop from a level of service (LOS) A to a LOS B, while the Mill Road intersection will drop from LOS A to LOS E, thus incurring significantly levels of delay. See Section 7 for more details on this traffic analysis.

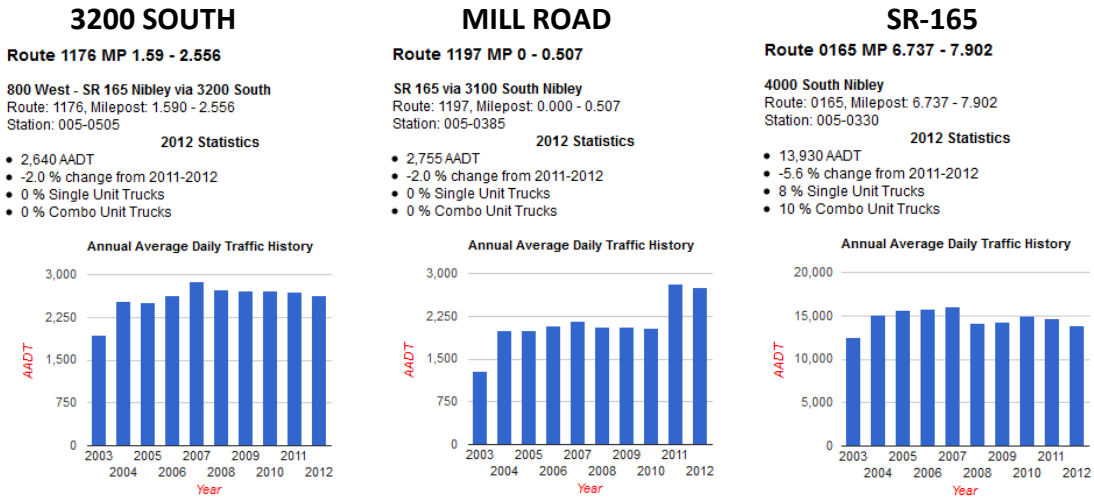

FIGURE 4. Traffic Levels in Study Area (UDOT Traffic Volumes, 2014)

Section 2.3 Study Area Topography

Topographic data was gathered from the Utah Automated Geographic Reference Center website. The 10 meter DEM data set was utilized (AGRC, 2014). The topography east of the Blacksmith Fork River rises sharply from the banks to the east at 4-5% grades. The land between the highway and the river banks is flatter at 1-2% and trends in a north, or north-easterly direction draining primarily towards the Blacksmith Fork River just before crossing under the Mill Road bridge. The gradient west of the highway and north of 3200 South is almost uniformly to the northwest at grades between 1-2%. A map describing these and other non-transportation-related existing conditions, including topography, wetlands, soil types, flood zone boundaries, property boundaries, and historic properties, as well as the current state of previous master-planning efforts can be found in Appendix C.

Section 2.4 Wetlands & Springs

The National Wetlands Inventory was consulted to better understand the presence of possible wetlands in the area (NWI, 2014); however, without official site-specific wetland delineations, the presence of jurisdictional wetlands cannot be definitively determined. The NWI shows possible wetland bodies along the Blacksmith Fork River bottoms, as well as other potential wetlands along a corridor running from southeast to northwest west of the SR-165. Any impacts to actual jurisdictional wetlands incurred by the project would require coordinated mitigation with the U.S. Army Corps of Engineers, most likely involving a payout to help fund the creation of additional wetlands elsewhere at a designated "mitigation bank".

From discussions with local residents, it is also clear that historically there were several springs on the properties just northwest of the 3200 South and SR-165 intersection (See Appendix F). Roadway widening, sewer line projects, and other utility projects have caused some springs to dry up, while the flows of others have been reduced. Several of these springs serve to create high-water table, swampy, marshy conditions in the areas north of 3200 South and between SR-165 and 250 West.

Section 2.5 Soil Conditions

The USDA Soil Survey was also consulted to better understand soil types in the area. Most soil types in the area are silt- and loam-based with the exception of an old gravel pit that lies to the west of northwest of 250 West and 3200 South (USDA, 2014). These silt- and loam-based soils do not tend to be ideal for construction activities and often require stabilization, draining, or over-excavation and replacement with gravelly material.

Section 2.6 Flood Hazard Area

The FEMA Map Service Center was consulted to effectively identify the flood hazard area boundary which was found to extend through the Blacksmith Fork River bottoms from just east of the east river banks to just east of SR-165 (FEMA, 2014). It is classified as a Zone A, indicating the least level of FEMA analysis. Conversations with local residents confirm that this area has historically been the subject of significant flooding, indeed extending almost to the residences that parallel SR-165 (See Appendix F, Deloy Parkinson). However, with the construction of a sewer line behind these homes, much of the area which had been swampy and poorly drained is now relatively dry as reported by property owner Deloy Parkinson. However, parcel 03-031-007, which lies just southwest of the Mill Road bridge and west of the Blacksmith Fork River has experienced increased flooding since UDOT modifications to Mill Road. According to property owner, Linda Anderson (See Appendix F, Linda Anderson), the grade of Mill Road was raised above its historical elevation causing the roadway embankment to act as a dam holding back north-flowing flood water. This flooding issue was severe enough to flood a structure on the parcel resulting in its demolition. Other residents have also complained that instead of draining into the storm drain system the UDOT detention pond just to the east of the parcel now routinely backs up and causes additional flooding in the area.

Section 2.7 Historical Properties

The Cache County online GIS database was consulted to determine property boundaries and ownership in the study area, while the Assessor's Office provided the consultant with the years that various homes were constructed (Cache County, 2014). The majority of the structures within the study area (those older than 50 years old) would be eligible through the State Historic Preservation Office (SHPO) for historic status should an evaluation determine that they have retained most of their original appearance without major changes to the structures. If any federal or state funding is used for the construction of this project the evaluation and demolition of any of these structures would have to be coordinated and/or approved by SHPO.

Section 2.8 Master-Planning Studies

As a part of this study, previous master-planning documents were also consulted to better understand prior planning efforts, and how they may need to be adjusted based upon the results of this study. Prior planning documents, especially the Nibley Transportation Master Plan (updated in November 2011) were consulted to determine where previous planning efforts had left off (Nibley Transportation, 2011). 3200 South and Mill Road were both classified as proposed minor arterials (80-99' ROW), which would require some widening on Mill Road to accommodate a third lane. SR-165 was expected to remain as it is in terms of width and functionality. 3200 South and SR-165 were expected to continue serving as a major truck and bus route. A Cache Valley Transit District Park-and-Ride lot was also proposed on the east side of the highway someplace south of the SR-165 and Mill Road intersection.

The Nibley City General Plan, last updated December 2007, was also consulted (Nibley General, 2007). Land-uses northwest of the SR-165 and 3200 South intersection were listed as medium-density residential, while the areas to the south and east were designated as low-density residential. The Nibley General Plan also included a Town Center Concept, as shown in Figure 5, intended for gradual implementation in the area northwest of the SR-165 and 3200 South intersection. Great efforts were made during the Concept Study to ensure that the Town Center vision would be advanced rather than hindered.

FIGURE 5. Nibley General Plan Town Center Concept

The Cache County Metropolitan Planning Organization (MPO) Transportation Master Plan was also consulted in this process (Cache MPO, 2011), but aside from identifying in a very general way the need for some way to facilitate east-west mobility in this area it did not contain any information relevant to this study. This master plan is scheduled to be updated this coming year and ought to consider the findings of this study during the revision process.

Section 2.9 Existing Utilities

A map of existing utilities within the study area was developed for planning purposes (see Appendix D). Utility drawings were solicited from major affected utility companies including Rocky Mountain Power, Comcast, Century Link, and Questar Gas (also see Appendix D). The consultant also used the county-maintained Nibley City Asset GIS Database to determine water and sewer line locations. However, the Asset Database only maintains locations of visible infrastructure, such as water valves and manholes. Accordingly, the city sewer and water line locations are purely assumed based on these visible surface assets. In some cases discussions with local residents helped to identify the utility location (See Appendix F, Deloy Parkinson), as in the case of the SR-165 eastside sewer line. There is no guarantee implied or expressed that the utility map is entirely complete or accurate. It is intended solely for planning purposes.

Nibley City's GIS has a sewer line that runs north and south approximately 300' to the east of the SR-165 ROW line that turns to the west at Mill Road and then parallels SR-165 behind the sidewalk. Based on manhole locations, another sewer line is possible on the west side of SR-165 behind the homes fronting the road. Nibley City also has a major water line that runs east-west in the 3200 South ROW. Rocky Mountain Power and Comcast have poles on the south side of 3200 South which continue to the east across SR-165, then across the Blacksmith Fork River and into Millville. Rocky Mountain Power and Comcast also have lines that run down the eastside of SR-165, with a handful of service lines heading east along Mill Road and heading

west from Mill Road. Century Link lines run along the south side of the 3200 South ROW and along the west side of SR-165. Questar Gas maintains pressurized lines in all ROWs within the study area.

3.0 Concept Development

Section 3.1 Concept Development Methodology

As previously explained, the only way to fully resolve both the pedestrian and vehicular safety issues, as well as east-west mobility concerns, is to bring the two intersections together into a single four-way signal. Accordingly, all initial concepts developed had to meet this basic criteria as well as contribute to the six previously-identified project priorities:

1. Pedestrian/Bicyclist Safety
2. Vehicular Safety
3. Traffic Flow (including East-West Mobility)
4. Economic Development
5. Community & Environmental Impacts
6. Project Cost

Section 3.2 Alignment Screening

Figure 6 sketches three alignments which were briefly considered in discussions with Nibley City staff prior to the Project Kickoff Meeting, but which were screened out for specifically failing to meet these project priorities.

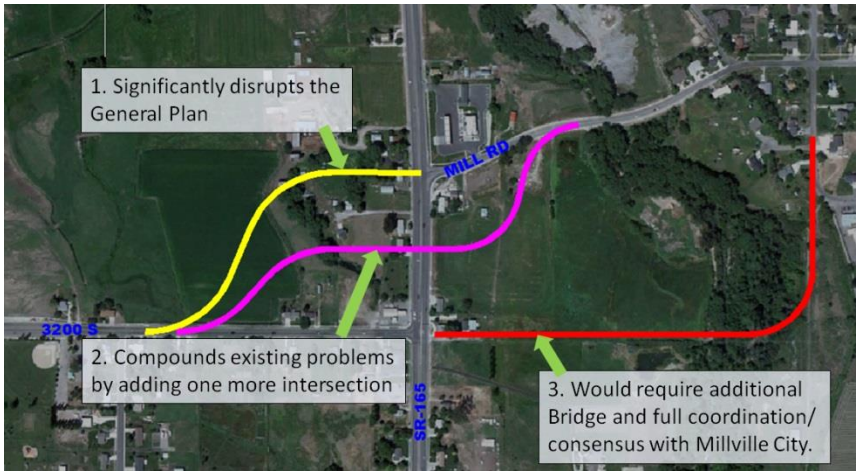

FIGURE 6. Screened-out alignments

The first alignment in yellow would significantly impact Nibley's ability to enact their Town Center Concept as it slices diagonally through the portion of their town center which fronts SR-165 and negates their ability to develop a grided street network. This in turn would have a

negative effect upon the economic development potential of this area. The second alignment in purple only compounds the existing vehicular safety problems in this area by the addition of one more intersection into the study area. The use of two sets of reverse curves is also problematic from a driver safety perspective. The third would require Nibley City to construct a bridge across the Blacksmith Fork River (an approximately $1 million to $2 million item) and would face challenges inherent to inter-municipal coordination. Full consensus between Nibley City and with Millville City would be required to bring the project to fruition. In efforts to mitigate impacts to the Harris family residence at 3085 South SR-165 two other alignments were briefly considered. These mitigation efforts are discussed in Appendix F.

Section 3.3 Alignments Advanced & Considered

From initial discussions with the Nibley City staff, three options were developed and advanced for presentation at the Project Kickoff Meeting. Representatives from affected jurisdictions and utility companies were both present. Comments and feedback received at this meeting were used to further refine these options (see Appendix A), as were individual meetings with affected property owners subsequent to the Kickoff Meeting (see Appendix F). Ongoing meetings with City Officials also provided further input along the way. Final versions of the three selected alignments are shown in Figures 7, 8 and 9. Larger versions of these graphics can be found in the Appendix E. Prior to presentation at the City Council Meeting, these final concept alignments were fully evaluated and a recommended option selected according to the methodology laid out in Section 8.0 of this report.

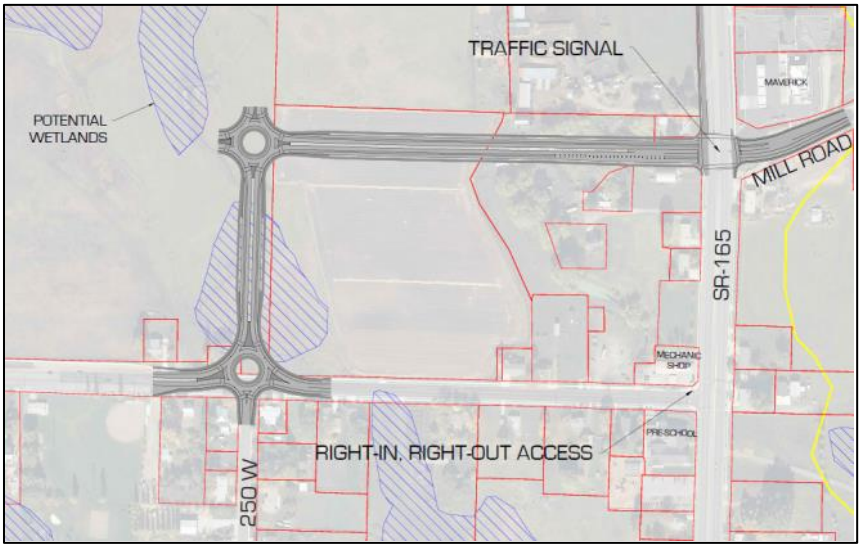

FIGURE 7. Option 1

Option 1 consists of (1) the construction of a leg of 250 West, which was already identified for construction in the Transportation Master Plan, and (2) a stretch of roadway from the existing intersection of SR-165 and Mill Road to the future intersection of Mill Road and 250 West. Both intersections along 250 West would be constructed as roundabouts, allowing for continuous vehicle flow, while the intersection at Mill Road would become a four-way signalized

intersection. The roundabouts shown are sized appropriately so that they could become dual-lane roundabouts; however, they are currently only striped as single-lane. A single-lane roundabout can operate acceptably in a range of 16,000 to 28,000 AADT, with a double operating acceptably up to somewhere between 28,000 and 42,000 AADT, assuming a 30% left-turn percentage (FHWA Roundabouts, Section 5). Speeds through the roundabouts would be limited to 15mph. The two new legs of roadway would be designed to 30mph standards. A southbound right-turn pocket would have to be constructed along SR-165, which may or may not require strip takes along the west side of SR-165. Some widening would be required on the portion of Mill Road just south of the Maverick gas station. In order to resolve weaving/merging difficulties, the intersection at 3200 South would be channelized for "right-in, right-out" access only.

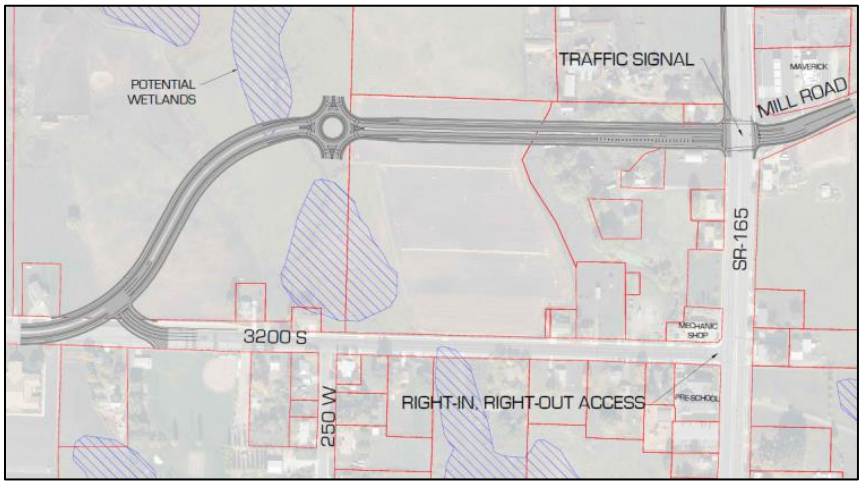

FIGURE 8. Option 2

Option 2 is similar to Option 1, but instead of constructing the future leg of 250 West, it ties directly into 3200 South alignment via two reverse curves designed for 35mph speeds (the current posted speed of 3200 South) just east of the Nibley City Building. The portion of 3200 South from the ball park to SR-165 would become a local road. Its t-intersection with the new roadway would be stop-sign controlled.

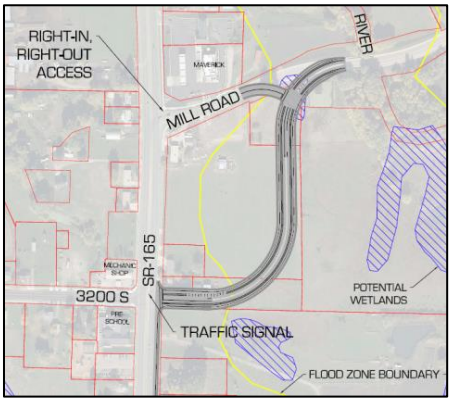

FIGURE 9. Option 3

Option 3 involves the construction of a four-way traffic signal at 3200 South and SR-165, and the creation of a reverse-curve roadway beginning at this intersection and tying in just prior to the existing bridge over the Blacksmith Fork River. The curves in this concept are both designed to 30mph; however, the second curve would require a 2% positive super-elevated cross-slope. The transition from this elevated cross-slope to a normal crown roadway would have to be effectuated across the bridge. Sight-distance approaching the bridge, bridge parapet and adjacent trees, may be limited. The remaining portion of Mill Road between the north curve and SR-165 would remain open to local traffic, with the intersection of Mill Road and the new roadway being stop-controlled. The intersection at SR-165 would be channelized for "right-in, right-out" access only. A new northbound right-turn pocket would be required on SR-165 approaching the intersection with 3200 South.

Section 3.4 Cross-Section Development

Beyond establishing a simple roadway alignment, efforts were also made to consider a new roadway cross-section that could improve the pedestrian, bicycle, and vehicular safety of the roadway and help make this new roadway into a truly multi-modal thoroughfare. Using the National Association of City Transportation Officials' (NACTO) "Urban Street Design Guide" for general guidance, the consultant developed the cross-section found in Figure 10 based on suggestions for a "Neighborhood Main Street" (NACTO, 2014). This cross-section totals 84 feet from back of sidewalk to back of sidewalk, a width slightly greater than the 3200 South ROW east of 250 West (78 feet) and narrower than that to the west (98 feet). The total pavement width comes to 55 feet, as opposed to the 49 feet pavement required in the current city transportation master plan's standard 80-foot ROW cross-section (Nibley Transportation, 2011, Drawing C-3). The rationale for each cross-sectional element is as follows:

- Planted Median: The 11' median (10' landscaping with 6" barrier curbing) not only provides positive streetscape aesthetics, but it also reduces the amount of storm water runoff that needs to be captured and the amount of pavement that would need to be poured and maintained. The raised median can also serve to control left-turning access and reduce conflict points.
- Travel Lanes: Slightly narrower lanes to cause motorists to be more aware of their environment and to drive more cautiously, where wide lanes and shoulders can often have the reverse effect by creating a false sense of security. 11-foot lanes will help to increase area pedestrian and bicycle safety, while still maintaining a sufficient width that ensures functionality for larger vehicles (delivery trucks, buses, etc.) is not diminished. For Urban Arterials, the AASHTO design manual allows for lanes between 10 to 12 feet, while "lane widths of 11 ft are used quite extensively for urban arterial street designs." It also states that 11-ft lanes are "adequate for through lanes, continuous two-way left-turn lanes, and lanes adjacent to a painted median" (AASHTO 7.3.3). In order to maintain roadway geometrics conducive to a town center, it is recommended that during final design a separate design vehicle and control vehicle be utilized per

directions provided by the Institute of Transportation Engineers' Context Sensitive Solutions manual. A design vehicle is one that must be regularly accommodated without encroachment into the streetside, while a control vehicle is a vehicle that infrequently uses a facility and must be accommodated, but where encroachment into the streetside is acceptable (ITE CSS, Fact Sheet 3). Given the town center vision, Nibley officials expressed concern about keeping 3200 South as a primary truck route. Designing around two vehicle types would serve to discourage the regular use of the road by trucks, while still accommodating the occasional large vehicle.

- Bike Lanes: Accommodation of bicycles in their own travel way is essential to increasing bicycle safety and to promoting bicycling as a reasonable and feasible transportation mode choice alternative. The "AASHTO Guide for the development of Bicycle Facilities" recommends a minimum width of 5-feet for bike lines, with more preferred when possible (AASHTO Bike, 4.6.4).
- Parking Lanes: Creating a town center with roads that are fully integrated with adjacent land-uses is vital; otherwise the roadway will serve as a through-fare separate and detached from the adjacent buildings. By orienting buildings towards the street and providing for on-street parking, street life is often greatly enhanced. The 6-feet parking lane combined with the 2-feet gutter pan allows for 8-feet of parallel parking space.
- Park Strips: Park strips provide a buffer between the road and pedestrians to either side, while also offering opportunities for bicycle parking, waste receptacles, benches, and aesthetic landscaping. 6-feet is sufficiently wide to provide for this range of uses and ensure tree vigor and health
- Sidewalks: The wider a sidewalk is the more opportunities there will be for street life and walkability. It is recommended that a 6-foot minimum sidewalk be installed on the project as this width allows sufficient room for two average adults to walk side-by-side. A much wider sidewalk in the range of 10 to 15-feet would be desirable in front of buildings, allowing for the creation of additional outdoor patio space and plaza-type environments. The added width could be added at a later date and be installed concurrent with private developments.

FIGURE 10. Proposed Project Cross-Section

Section 3.5 Intersection Design for Pedestrians and Bicycles

FIGURE 11. Curb Extension Example

In order to effectively promote pedestrian/bicycle and vehicular co-existence in the same facility, intersection design elements are crucial. Pedestrian crosswalks and pedestrian-actuated signals should be installed on every leg of the signalized intersection. Crossing distances should also be minimized by reducing the curb return radii as much as possible while still accommodating the proper design vehicle. Curb extensions, or bulb-outs as they are sometimes called (see an example of usage in Figure 11), also can serve to effectively help reduce the total distance that a pedestrian has to cross. These modifications can, however, end up eliminating the possibility of an exclusive right-turn lane, a trade-off that would have to be considered in light of right-turning volume projections. Appropriate pedestrian signage and crosswalk pavement markings can also be useful in establishing greater motorist awareness of other user types.

With regards to bicycle facilities, the extension of exclusive bicycle lanes between the right-turning lane and through-lane up to and through the intersections can reduce the number of right-turning and bicycle vehicle collisions and eliminate the need for them to share sidewalks and crosswalks with pedestrians through signals. Bicycle radar signal-detection has also been recently introduced by UDOT (UDOT Bikes, 2014) in the state of Utah and is currently being used in a handful of locations, and could also prove useful.

Although outside of Nibley City's jurisdiction, a collaborative effort could be suggested to UDOT officials to establish striped bike lanes along SR-165 through Nibley City's boundaries. Although the pavement on SR-165 is sufficiently wide to accommodate bikes with 20-feet between the skip line and the edge of pavement, the lack of a shoulder stripe has the tendency to draw motorists into the middle of that 20-foot swath. The addition of a shoulder stripe, or even better, a properly striped and marked bike lane would greatly improve safety across the region's bicycle network.

4.0 Property Owner Involvement

Soon after the Project Kickoff Meeting, a list of property owners who would have to sell a portion of their property to accommodate one of the three options was compiled. Owners were contacted to schedule individual meetings to discuss the project, solicit feedback, and work through the implications it would have on their real estate. A complete summary of the

results of each discussion can be found in the Appendix F. Each report includes photos of the property, an explanation of how the concept(s) would affect the property, the owner's feedback on the project in general, specific concerns regarding their own particular holdings, the owner's willingness to work with the city. The highlighted areas in Figure 12 represent the extent of impacted parcels and the owners with whom the consultants met.

FIGURE 12. Parcels Impacted

Table 1 lists the affected property owners, and how much of their property might be required under each of the three proposed concepts.

TABLE 1. List of Affected Property Owners, and Required Takes

Property Owner		Property Address	Property Owner Address	Option 1		Option 2		Option 3	
Last Name	First Name(s)			Home Take?	Total Square Feet Req'd	Home Take?	Total Square Feet Req'd	Home Take?	Total Square Feet Req'd
Anderson	David and Connie	3196 S Main St	115 W 4000 S	-	-	-	-	Yes	61,420
Anderson	Linda and Doug	40 E Mill Rd	2779 S Main St	-	-	-	-	-	23,431
Bowler	Stacy and Stephanie	3196 S Main St	Owner occupied	-	-	-	-	Yes	15,682
France	Dan	255 W 3200 S	Owner occupied	Yes	8,276	-	-	-	-
Harris	Robert and Virginia	3085 S Main St	Owner occupied	Yes	95,965	Yes	95,965	-	-
Knight*	Gerald and Trudy	3220 S Main St	Owner occupied	-	-	-	-	-	-
McBride	Jeff and Bonnie	244 W 3200 S	Owner occupied	-	748	-	-	-	-
Parkinson	Deloy and Joyce	3110 S Main St	Owner occupied	-	-	-	-	-	67,491
Ropelato	Lane	3063 S Main St	Owner occupied	-	138,085	-	182,263	-	-
Schenavar	Schenavar	3075 S Main St	Owner occupied	-	320	-	320	-	-
Young*	Edwin and Yvonne	224 W 3200 S	Owner occupied	-	-	-	-	-	-
			TOTALS (acres):		**5.6**		**6.4**		**3.9**

*Although the roundabout would not require a property take from the Youngs, nor would the northbound right-turn deceleration lane from the Knights, these features would affect the property owners' access rather dramatically, and so the consultants met with them to discuss the potential implications.

Options 1 and 3 would require the demolition of two homes, while option two would require one. In terms of total land needed, Option 2 requires the most, followed by Option 1, and lastly Option 3.

5.0 Land-Planning Efforts

5.1 Town Center Concept Compatibility

As previously noted, the consultant team made a significant effort to examine the effect that the three proposed concept alignments would have on the ability to realize the vision of a Town Center as laid out in the 2007 Nibley General Plan. An overlay of the general plan graphic with each alignment can be found in Figures 13, 14, and 15 (larger versions are in the Appendix G).

FIGURE 13. Option 1 with Town Center Overlay

FIGURE 14. Option 2 with Town Center Overlay

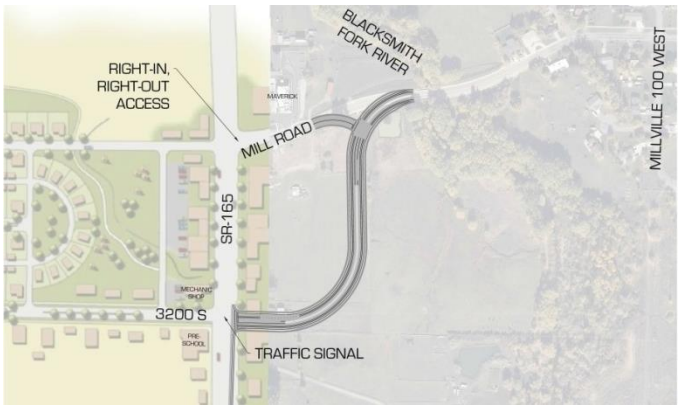

FIGURE 15. Option 3 with Town Center Overlay

At first glance, Option 1 is clearly the most compatible alignment with the 2007 General Plan's Town Center Vision. Option 2 preserves the eastern block of the town center from 250 West to SR-165 in its entirety while the portion to the west of 250 West would require some re-visioning. Option 3 is largely irrelevant to the Town Center vision, neither doing anything to preclude or advance its implementation. Were Option 3 to be constructed, the network of roads envisioned as part of the Town Center could still be constructed at a later date as driven by development interests.

5.2 Economic Development Potential

Separate from, but related to this effort to preserve the town center vision, the consultant also took a closer look at the economic development potential of the land adjacent to each alignment option. This effort did not include a market analysis, but was rather an exploration of the possible arrangement of land-uses in a mixed-use context, and what physical square footage could reasonably be expected from each use. Thumbnails of the three land-use proposals can be found in Figure 16 with larger versions in Appendix H.

FIGURE 16. Economic Development Potential of Alignment Options

6.0 Cost Estimating

Prior to beginning full evaluation efforts, UDOT's standard concept estimating approach was applied to the three proposed alignments. Line item construction quantities and ROW takes were measured using AutoCAD Civil 3D, while unit prices were gathered by comparing bids from UDOT projects that were comparable in size, scope, and comparable location (UDOT Bids, 2014). The full UDOT Concept cost estimate forms can be found in Appendix I with all documented assumptions. Accounting for inflation and assuming a construction horizon of 2-3 years brings the grand totals in 2017 dollars to $3.7 million, $3.7 million, and $2.3 million respectively. Assuming all construction funding comes from the Cache County Association of

Governments a 7% match will be required on the part of the city, thus bringing Nibley City's total payout to $259,000, $259,00, and $161,000 respectively.

7.0 Traffic Analysis

On August 12, 2014 Civil Solutions Group technicians gathered traffic counts during the PM peak hour period (4PM to 6PM) from the intersections of SR-165 with Mill Road and 3200 South. One technician was stationed at each intersection with a third between the two to count the number of vehicles that made the s-movement heading west from Millville to Nibley or vice-versa. These traffic counts can be found in the Appendix J. Ivan Hooper, Professional Traffic Operations Engineer with Avenue Consultants, was responsible for performing the intersection traffic analysis on the three proposed alignments. His group examined a total of five scenarios for the PM peak hour period: Existing Conditions, 2040 No Build, 2040 Westside Roundabouts, 2040 Westside s-curve, and 2040 Eastside. Tables 2 and 3 show the following results by movement and for the total intersection for the Mill Road and 3200 South intersections: PM peak hour volume, delay per vehicle, level of service, and 95th percentile queue length. In the build scenarios it was assumed that the unsignalized intersection would function as a right-in/right-out.

TABLE 2. Existing and No-Build Traffic Simulation Results

Nibley PM Peak Hour Intersection Analysis
SR-165 & Mill Road / 3200 South
September 4, 2014

	Measure of Effectiveness	Northbound			Southbound			Eastbound			Westbound			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing Conditions	**Mill Road & SR-165**													Unsignalized
	PM Peak Hour Volume	0	494	93	43	849	0	0	0	0	142	0	37	1,658
	Delay/Vehicle (sec)	-	0	0	6	1	-	-	-	-	11	-	3	2
	Level of Service	-	A	A	A	A	-	-	-	-	B	-	A	A
	95th Percentile Queue (ft)	-	-	-	20	-	-	-	-	-	90	-	40	-
	3200 South & SR-165													Signalized
	PM Peak Hour Volume	29	472	0	0	824	167	115	0	43	0	0	0	1,650
	Delay/Vehicle (sec)	19	1	-	-	6	2	14	-	6	-	-	-	5
	Level of Service	B	A	-	-	A	A	B	-	A	-	-	-	A
	95th Percentile Queue (ft)	50	-	-	-	140	60	80	-	20	-	-	-	-
2040 No Build	**Mill Road & SR-165**													Unsignalized
	PM Peak Hour Volume	0	750	260	80	1,210	0	0	0	0	350	0	70	2,720
	Delay/Vehicle (sec)	-	1	1	10	2	-	-	-	-	>180	-	>180	40
	Level of Service	-	A	A	B	A	-	-	-	-	F	-	F	E
	95th Percentile Queue (ft)	-	-	-	70	-	-	-	-	-	>500	-	290	-
	3200 South & SR-165													Signalized
	PM Peak Hour Volume	130	740	0	0	1,230	330	270	0	210	0	0	0	2,910
	Delay/Vehicle (sec)	43	1	-	-	18	6	31	-	17	-	-	-	14
	Level of Service	D	A	-	-	B	A	C	-	B	-	-	-	B
	95th Percentile Queue (ft)	140	-	-	-	280	140	230	-	190	-	-	-	-

TABLE 3. PM Peak Hour 2040 Intersection Analysis

Nibley PM Peak Hour Intersection Analysis
SR-165 & Mill Road / 3200 South
September 4, 2014

	Measure of Effectiveness	Northbound			Southbound			Eastbound			Westbound			Total
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2040 Westside Roundabout	**Mill Road & SR-165**													Signalized
	PM Peak Hour Volume	110	660	140	90	1,180	40	120	120	20	250	120	80	2,930
	Delay/Vehicle (sec)	40	12	4	27	20	7	31	32	12	44	27	7	21
	Level of Service	D	B	A	C	B	A	C	C	B	D	C	A	C
	95th Percentile Queue (ft)	130	140	50	150	300	110	120	130	30	250	180	50	-
	3200 South & SR-165													Unsignalized
	PM Peak Hour Volume	0	910	0	0	1,300	150	0	0	140	0	0	0	2,500
	Delay/Vehicle (sec)	-	1	-	-	5	4	-	-	10	-	-	-	4
	Level of Service	-	A	-	-	A	A	-	-	B	-	-	-	A
	95th Percentile Queue (ft)	-	-	-	-	-	-	-	-	80	-	-	-	-
2040 Westside S-Curve	**Mill Road & SR-165**													Signalized
	PM Peak Hour Volume	110	630	130	90	1,090	140	150	130	60	230	120	80	2,960
	Delay/Vehicle (sec)	37	12	4	28	20	8	34	28	12	35	28	6	20
	Level of Service	D	B	A	C	B	A	C	C	B	C	C	A	B
	95th Percentile Queue (ft)	120	140	60	150	280	170	150	140	60	200	140	50	-
	3200 South & SR-165													Unsignalized
	PM Peak Hour Volume	0	870	0	0	1,310	70	0	0	120	0	0	0	2,370
	Delay/Vehicle (sec)	-	1	-	-	5	4	-	-	16	-	-	-	4
	Level of Service	-	A	-	-	A	A	-	-	C	-	-	-	A
	95th Percentile Queue (ft)	-	-	-	-	-	-	-	-	90	-	-	-	-
2040 Eastside	**Mill Road & SR-165**													Unsignalized
	PM Peak Hour Volume	0	780	10	0	1,310	0	0	0	0	0	0	70	2,170
	Delay/Vehicle (sec)	-	4	2	-	1	-	-	-	-	-	-	6	2
	Level of Service	-	A	A	-	A	-	-	-	-	-	-	A	A
	95th Percentile Queue (ft)	-	-	-	-	50	-	-	-	-	-	-	-	-
	3200 South & SR-165													Signalized
	PM Peak Hour Volume	120	630	120	80	1,010	220	140	130	200	230	120	10	3,010
	Delay/Vehicle (sec)	36	12	4	23	17	6	34	32	14	33	26	5	18
	Level of Service	D	B	A	C	B	A	C	C	B	C	C	A	B
	95th Percentile Queue (ft)	120	150	50	90	240	160	140	150	120	180	110	20	-

The future volumes were developed using the existing intersection volumes and data from version 1 of the Cache MPO travel model as obtained from Jeff Gilbert with Cache MPO . Model runs were done for each of the five scenarios, which were then used to develop the estimated 2040 volumes. The traffic analysis was performed using the SimTraffic micro-simulation software. Each scenario was run five times and the results averaged together.

Intersection performance is measured in terms of seconds of average vehicle control delay. Ranges of delay are then assigned a “Level of Service” letter grade (see Table 4). The unsignalized intersection performs well in all three 2040 scenarios, yielding a Level of Service A. Likewise, in all three scenarios, the signalized intersection performs fairly consistently, with volumes of 2,930, 2,960 and 3,010 respectively, all hovering on the boundary between Level of Service B & C. Assuming that the current project is constructed with turning lanes long enough to handle the simulated 2040 volumes no additional capacity improvements should be required until past the 2040 horizon.

TABLE 4. Intersection Level of Service
(HCM2000, Exhibit 16-2 & Exhibit 17-2)

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	≥80 sec	≥50 sec

8.0 Concept Evaluation & Recommendation

8.1 Criteria and Methodology

The six previously stated project priorities were used to evaluate the overall value provided by each alignment option. Several of the six were then further subdivided with a breakdown as follows:

1. Pedestrian and Bicycle Safety (20%)
   - 1.1 Intersection pedestrian and bike safety
   - 1.2 Contribution to vicinity pedestrian and bike safety
2. Vehicular Safety (10%)
3. Traffic Flow (2040 intersection delay in seconds) (10%)
4. Economic Development Potential (15%)
5. Community and Environmental Impacts (25%)
   - 5.1 Contribution to General Plan Vision
   - 5.2 Contribution to Transportation Master Plan
   - 5.3 Home Relocations
   - 5.4 Potential Wetland Impacts
   - 5.5 Loss of Farmland
6. Project Cost (20%)

Weights were assigned according to the value priorities communicated to the consulting team by city officials. When possible an easily quantifiable and measurable metric was selected for measuring how each option fared under each criterion; however, some criteria were inevitably qualitative and were measured accordingly. These metrics were then comparatively scored between themselves on a scale of one to five, and a weighted subtotal was generated for each line item. The summation of the weighted subtotals produced the final score for each option. The resulting evaluation matrix can be found in Table 5.

8.2 Evaluation Results

TABLE 5. Evaluation Matrix

EVALUATION CRITERIA	WEIGHT	OPTION 1 (30 mph)			OPTION 2 (35 mph)			OPTION 3 (30 mph)		
		Measurement	Scoring (1 to 5)	Weighted Subtotal	Measurement	Scoring (1 to 5)	Weighted Subtotal	Measurement	Scoring (1 to 5)	Weighted Subtotal
Intersection Pedestrian & Bike Safety	10%	Good	4	0.4	Good	4	0.4	Good	4	0.4
Contribution to Vicinity Pedestrian & Bike Safety	10%	Excellent	5	0.5	Adequate	3	0.3	Poor	1	0.1
Vehicular Safety	10%	Good	4	0.4	Adequate	3	0.3	Fair	2	0.2
Traffic Flow (Average 2040 Intersection Delay in Seconds)	10%	21	3	0.3	20	4	0.4	18	5	0.5
Economic Development Potential	15%	Excellent	5	0.5	Good	4	0.4	Fair	2	0.2
Contribution to General Plan Vision	5%	Excellent	5	0.5	Good	4	0.4	Fair	2	0.2
Contribution to Transportation Master Plan	5%	Excellent	5	0.5	Good	4	0.4	Fair	2	0.2
Home Relocations	5%	2	2	0.2	1	4	0.4	2	3	0.3
Potential Wetland Impacts (acres)	5%	0.96	2	0.2	0.08	4	0.4	0.33	3	0.3
Loss of Farmland (acres)	5%	5.2	3	0.3	6.2	2	0.2	3.5	5	0.5
Total Project Cost (2017 Dollars)	20%	$ 3,700,000	3	0.3	$ 3,700,000	3	0.3	$ 2,300,000	5	0.5
Nibley's Total (7% Contribution)		$ 259,000			$ 259,000			$ 161,000		
GRAND TOTAL:				**4.1**			**3.9**			**3.4**

While all the options have equal potential for generating a fair degree of intersection safety, the alignment options differ in their ability to contribute to the City's, or at least the general vicinity's, overall walkability, bike and pedestrian safety. Option 1 preserves the option of establishing a city grid that extends from the study area to the northern limits of Nibley City. A Grided road networks with roundabout intersections tend to have lower average speeds, though "point A to point B travel" times rarely suffer because there are less full and complete stops and traffic is more evenly dispersed across several roadways instead of a few. Thus incident-caused delay and congestion-caused delay are minimized. Also small differences in vehicle speed make a huge difference when it comes to the severity of pedestrian injuries (See Figure 17).

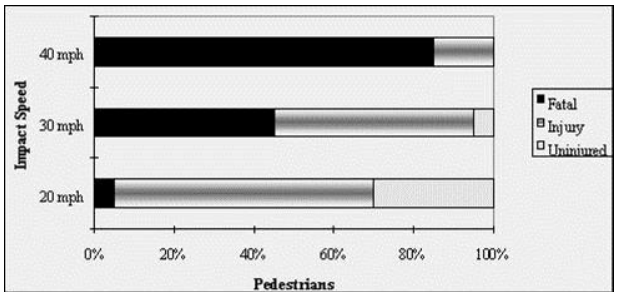

FIGURE17. Vehicle Speed and Pedestrian Fatalities (FHWA Peds, 2014)

Option 2 does not have the same long-term advantage since its higher design speed (35mph) and direct connection to SR-165 concentrate traffic onto a single route. It also slices through a large section of Nibley City's potential grid system. For different reasons, Option 3 performs

even more poorly, primarily because of its isolation from the rest of Nibley proper and the limited capacity for growth in the region between SR-165 and the Blacksmith Fork River. In other words, Nibley's overall walkability and pedestrian-friendliness will not be enhanced. Additionally, Option 2 introduces higher speed and a set of sharp curves (reverse curves are prone to generating accidents) and Option 3's reverse curves is worse because the option's cross-slope is super-elevated as you approach the bridge over the Blacksmith Fork River. Since this curve ends at the beginning of the bridge, the parapet and river bottom trees may limit sight distance and visibility. The resulting unsafe condition would only be worse during the wet months of winter.

Though traffic flow is relatively comparable between the three options, as demonstrated in Section 7, Option 3 does perform slightly better than Option 2, and Option 2, better than Option 1.

The economic develop potential of Option 1 is rated higher as it preserves the ability to develop this large contiguous part of Nibley in an organized fashion. Option 2's disruption of the grid will ultimately leave un-economic remnants and odd-parcels with little development potential. Option 3 has little land to work with, much of which is encumbered by the state flood hazard zone.

The layout of Option 1 contributes to the transportation master plan by building a segment of 250 West and is fully compatible with the Nibley General Plan's Town Center Concept, while Option 2 contributes partially to realizing the Town Center Concept and does not prohibit the future construction of an extended 250 West. Option 3 does little to contribute to or against either the transportation master plan or the Town Center Concept: no network of roads is envisaged by Nibley on the east side of SR-165.

Option 1 scores lowest in home relocations since it requires the taking of both the Harris and France residences, both of whom are permanent residents of Nibley City. Option 3 scores higher than Option 1 since one of the two home relocations is a rental property. Option 2 scores highest in this category, since it only impacts a single home.

Option 2 scores highest in least potential wetland impacts, with Option 3 coming in next, and Option 1 impacting the most. Mitigating up to an acre of wetlands could prove costly (the cost estimate reflects this), and could result in construction and/or permitting delays. With regard to lost farmland, Option 2 consumes the most, with Option 1 close behind, while Option 3 consumes the least.

The cost for Options 1 and 2 come out nearly identical. Though Option 1 involves less total roadway construction, the added infrastructure required to construct the roundabouts makes up for it. Option 3 is considerably shorter and is therefore less expensive overall.

As seen in Table 4 when these options are measured against each criterion, scored and then weighted, Option 1 comes out as the highest scoring at 4.1 out of 5, with Option 2 following at 3.9, and Option 3 at 3.4. **Based on this analysis the consulting team recommends Option 1 since it provides the highest overall value to the city based on pre-established project priorities and values.** Given the higher cost of Option1, funding availability for this project may require that ROW acquisition and construction occur over two seasons.

9.0 References

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APPENDIX A: Kickoff Meeting Materials

SR-165 & 3200 S Re-alignment Project
Project Kick-off Meeting – July 31, 2014

ORGANIZATION	NAME	EMAIL	ATTENDED
Cache County	Josh Runhaar	josh.runhaar@cachecounty.org	Yes
Century Link	Cheryl Bolinder	Cheryl.Bolinder@centurylink.com	No
Civil Solutions Group	Danny Macfarlane	Danny@civilsolutionsgroup.net	Yes
Civil Solutions Group	Michael Taylor	mtaylor@civilsolutionsgroup.net	Yes
Civil Solutions Group	Jake Young	jyoung@civilsolutionsgroup.net	Yes
CMPO	Jeff Gilbert	jeff.gilbert@cachecounty.org	No*
Comcast	Greg Miller	Greg_Miller2@cable.comcast.com	No
Millville City	Harry Meadows	HWMeadows@comcast.net	Yes
Nibley City	Shari Pippen	shari@nibleycity.com	Yes
Nibley City	David Zook	david@nibleycity.com	Yes
Nibley City	Shaun Dustin	shaun@nibleycity.com	No
Questar Gas	Cristi Fiedel	cristi.fiedel@questar.com	Yes**
RMP	Dave Garner	dave.garner@rockymountainpower.net	Yes
UDOT	Darin Fristrup	dfristrup@utah.gov	Yes
UDOT	Todd Finlinson	tfinlinson@utah.gov	Yes

*The consultants met with Jeff Gilbert the next morning to relay the contents of the Kickoff Meeting discussions.

**Cristi sent Nick White in her stead to represent Questar Gas.

SR-165 & 3200 S Re-alignment Project
Project Kick-off Meeting – July 31, 2014

		COMMENTS RECEIVED
GENERAL		Josh Runhaar recommended keeping the job in the $1.5M range. The CCOG can only approve project of $2M or less.
		Josh Runhaar explained that the CCOG viewed paying for the landscaping in the medians on the previous 3200 South project unfavorably. Landscaping may need to be covered by a betterment.
		Questar concerned about access to their utility pad behind the Mechanic shop at 3200 S and SR-165.
		Questar reminded project team that they need to include money in the budget for utility relocations.
		RMP & Questar will take responsibility for moving their utilities if they are already located in a city ROW.
		UDOT expressed openness to putting in shoulder strip on SR-165, reluctance to installing bike lanes.
		UDOT reiterated the access management standards. Since SR-165 is a Category IV road, driveways will not be allowed on SR-165 between Mill Road and 3200 South.
		Millville also has additional areas zoned for commercial to the north of 2600 South and SR-165. This may affect land-use plannign decisions that occur at this intersection.
		UDOT will participate in the relocation of the signal from 3200 South to Mill Road should Option 1 or 2 be selected.
		Will the 3200 South intersection become a right-in/right-out access should options 1 or 2 be selected? Will Mill Road if Option 3 is selected?
		UDOT would prefer a traditional intersection on SR-165. They do not see any warrant for an innovative design such as a CFI, etc.
OPTION-SPECIFIC	Option 1	This route is less direct and could slow regional travel.
		Will truck traffic be able to maneuver through the roundabout?
		Double roundabout option may not effectively move traffic?
		The two roundabouts may be undesirable enough to some drivers that they will simply find a different route.
		Could 250 West and 3200 South just be a four-way stop, dropping this option to one roundabout instead of two?
		This option incurs signifcant wetland impacts.
	Option 2	Millville likes this option, preferring a direct movement to and rom the west.
		Does the intersection of this new road with 250 West have to be a roundabout?
		Will truck traffic be able to maneuver through the roundabout?
	Option 3	This option incurs signifcant wetland impacts.
		UDOT had significant conern about the geometry of this design with its tight-curves.
		UDOT mentioend that the pavement section may need to be significantly thicker because of poor soils and flooding.

APPENDIX B: Crash Data Report

CRASH DATA NEAR 3200 SOUTH & SR-165, NIBLEY, UTAH
YEARS: 2003-2013

PS case #	case #	date	RO department	crash severity	main rd name	landmark	landmark distance - ft	landmark direction	county	city	reference post	rp distance - tenths mile	rp direction	vehicles involved	weather	junction/feature	nonmotorist action	first harmful event
300103584	0103C0683	9/10/2003 15:10	UHP	2	SR-165	3300 SOUTH IN NIBLEY			5	NIBLEY	7	5	N		1	89	89	89
300113037	0301C0827	10/29/2003 7:20	UHP	2	SR-165	3200 South			5	Nibley					1	89	89	89
300104247	0103C0831	10/30/2003 8:25	UHP	2	SR-165	3190 South			5	Nibley	8	1	S		4	0	89	89
500102821	0105C0090	1/20/2005 17:08	UHP	1	SR-165	3200 South	2640	S	5	Nibley	6	8	N		4	0	89	89
500104628	0105C0206	2/18/2005 19:40	UHP	1	SR-165	3200 S.			5	Nibley	8	2	S		1	21	89	89
500124369	0105C0990	11/5/2005 18:10	UHP	3	SR-165	3200 South In Nibley			5	NIBLEY	8	3	S		1	89	89	89
600103658	0106C0214	2/16/2006 8:35	UHP	1	SR-165	Milepost 8	2640	N	5	Nibley	8	5	N		1	0	89	89
600107860	0106C0537	5/3/2006 15:07	UHP	1	SR-165	3200 SOUTH			5	Nibely	7	7	N		1	21	89	89
800121713	0106C0560	5/11/2006 21:46	UHP	1	SR-165	3200 South		S	5	Nibley	7	5	N		1	0	96	25
600110462	0106C0753	6/24/2006 18:29	UHP	1	SR-165	3200 South			5	Nibley	6	1	S		1	0	89	89
800123460	0106C0991	8/11/2006 12:16	UHP	1	SR-165	3200 South		N	5	Nibley	8	2	S		1	21	96	20
600111827	0106C1064	8/27/2006 16:55	UHP	1	SR-165	3200 S.			5	Nibley	8	7	N		1	2	89	20
800106211	0107C0294	2/22/2007 0:07	UHP	1	SR-165	3200 South	2000	S	5	Nibley	7	3	N		1	0	96	25
800107626	0107C0490	3/24/2007 22:39	UHP	4	SR-165				5	Nibley	8	1	S		1	21	96	88
800116634	0107C1716	11/12/2007 18:12	UHP	1	SR-165	2900 S	100	S	5	Nibley	8	1	N		1	0	96	25
800116642	0107C1718	11/12/2007 23:04	UHP	1	SR-165	3200 South	1000	S	5	Nibley	8	1	N		1	0	96	25
800119069	0107C1989	12/30/2007 23:50	UHP	1	SR-165	3200 South	1500	S	5	Nibley	8	1	N		2	0	96	25
800129125	0108C0626	5/7/2008 8:43	UHP	3	SR-165				5	Nibley	8	5	N		2	0	96	20
800130017	0108C0738	6/2/2008 14:30	UHP	1	SR-165				5	Nibley	8	1	S		1	21	96	20
800130035	0108C0762	6/7/2008 14:45	UHP	2	SR-165				5	Nibley	8	3	S		1	21	96	20
800136824	0108C1253	9/17/2008 17:28	UHP	2	SR-165				5	Nibley	8	1	N		1	21	96	20
800137322	0108C1330	10/3/2008 16:23	UHP	2	SR-165				5	Nibley	8	1	S		1	21	96	20
800137890	0108C1347	10/6/2008 16:53	UHP	1	SR-165	2900 South	10	N	5	Nibley	8	2	N		1	0	96	20
800144062	0108C1610	11/29/2008 17:38	UHP	1	SR-165	2900 South	50	N	5	Nibley	8	1	N		2	0	96	25
800144561	0108C1615	12/1/2008 10:35	UHP	1	SR-165	3100 South	500	W	5	Nibley	8	1	S		1	0	96	20
800149086	0108C1744	12/26/2008 14:40	UHP	1	SR-165	3200 South			5	Nibley	7	8	N		2	21	96	20
900103285	0109C0211	2/13/2009 21:05	UHP	1	SR-165	3200 South			5	Nibley	7	8	N		1	21	96	20
900105324	0109C0364	3/18/2009 7:42	UHP	1	SR-165	3200 South			5	Nibley	7	7	N		1	21	96	20
900105325	0109C0366	3/19/2009 8:49	UHP	1	SR-165	3100 South			5	Nibley	8	1	S		1	21	96	20
900104973	0109C0370	3/20/2009 6:38	UHP	1	SR-165	3220 South	0	S	5	Nibley	7	5	N		1	0	96	25
900105064	0109C0387	3/24/2009 9:39	UHP	2	SR-165	3200 S			5	Nibley	7	9	N		1	0	6	22
900106959	0109C0493	4/16/2009 18:13	UHP	4	SR-165	3000 South			5	Nibley	8	1	S		3	21	96	20
900107832	0109C0559	5/5/2009 15:02	UHP	3	SR-165	3100 South			5	Nibley	8	1	S		2	21	96	20
900189833	0109C0997	8/13/2009 11:54	UHP	3	SR-165	3100 South	20	N	5	Nibley	7	9	N		1	21	96	20
900189772	0109C1016	8/17/2009 8:05	UHP	1	SR-165	3200 South	120	N	5	Nibley	8	2	S		1	21	96	20
900191530	0109C1183	9/21/2009 18:21	UHP	2	SR-165	3100 South	0	N	5	Nibley	8	1	S		1	0	96	20
900195143	0109C1526	12/5/2009 17:20	UHP	1	SR-165	3100 South	50	S	5	Nibley	8	1	S		4	0	96	20
1000116295	10-C0042	1/2/2010 21:11	CACHE CO SO	1	SR-165	3090 South			5	Nibley				1	1	0	96	69
1000108345	0110C0402	4/3/2010 20:40	UHP	1	SR-165	3200 South	100	N	5	Nibley	8	1	N	1	1	0	96	26
1000124435	0110C0965	8/11/2010 15:50	UHP	1	SR-165	3200 South	20	N	5	Nibley	7	8	N	2	1	0	96	20
1000126513	0110C1053	8/28/2010 10:34	UHP	4	SR-165	3100 South			5	Nibley	7	9	N	1	2	21	5	23
1000127034	0110C1088	9/2/2010 18:16	UHP	1	SR-165	3200 South	10	S	5	Nibley	8	5	S	2	1	0	96	20
1000148163	0110C1254	10/7/2010 13:40	UHP	1	SR-165	3200 South			5	Nibley	8	3	S	2	1	21	96	20
1000155966	0110C1350	10/29/2010 18:40	UHP	1	SR-165	3100 South	0	N	5	Nibley				2	1	0	96	20
1000157899	0110C1395	11/8/2010 14:58	UHP	3	SR-165	3100 South			5	Nibley	8	1	S	2	4	21	96	20
1000166627	0110C1527	11/27/2010 16:20	UHP	1	3200 South	SR-165			5	Nibley				2	2	21	96	20
1000164555	0110C1544	11/30/2010 6:41	UHP	1	SR-165	3100 South			5	Nibley	7	9	N	2	1	21	89	20
1100113545	0110C1589	12/8/2010 11:10	UHP	1	3100 South & SR-165	3200 South	200	N	5	Nibley	8	1	S	2	2	0	96	20
1100100962	0110C1681	12/20/2010 18:00	UHP	1	SR-165	2905 South	0	N	5	Nibley	8	2	N	1	1	0	89	25
1100100963	0110C1683	12/20/2010 18:00	UHP	1	SR-165	2905 South	0	N	5	Nibley	8	2	N	1	2	0	89	25
1100162986	0111C0173	2/8/2011 11:03	UHP	2	SR-165	3200 South			5	Nibley	7	75	N	2	1	21	96	20
1100466743	0111C0548	5/6/2011 16:17	UHP	3	SR-165	3200 South	15	N	5	Nibley	7	7	N	2	1	20	96	20
1100897110	0111C0922	7/30/2011 16:52	UHP	3	3100 South	SR-165			5	Nibley				2	2	21	96	20
1101530810	0111C1304	10/21/2011 19:40	UHP	1	3200 West	SR-165			5	Nibley				2	1	0	96	20
1101652350	0111C1345	10/26/2011 16:20	UHP	1	SR-165	3200 South			5	Nibley	7	7	N	2	1	21	96	20
1101911840	0111C1504	11/28/2011 8:00	UHP	2	SR-165	3200 South	0	N	5	Nibley		0	N	2	1	21	96	20
1102093610	0111C1517	12/2/2011 13:45	UHP	2	SR-165	3100 South			5	Nibley	7	9	N	2	2	21	96	20
1200176437	0112C0360	3/29/2012 11:03	UHP	1	SR-165	3200 South			5		7	8	N	2	2	21	96	20
1200309237	0112C0465	4/29/2012 10:49	UHP	1	SR-165	3200 South			5		8	1	S	2	2	21	96	20
1201424011	0112C0754	6/29/2012 8:55	UHP	2	SR-165	3200 South			5		7	6	N	2	1	21	96	20
1201458260	0112C0977	8/2/2012 12:10	UHP	1	SR-165	3010 South	0	S	5		8	1	S	2	1	4	96	20
1300317970	0113C0044	1/8/2013 22:01	UHP	1	SR-165	3200 South	200	S	5		7	8	N	1	1	0	96	25
1300679440	0113C0138	1/26/2013 18:04	UHP	2	SR-165	3100 South			5		8	1	S	2	2	21	96	20
1300793600	0113C0293	2/25/2013 8:47	UHP	3	SR-165	3100 South			5		8	1	S	2	1	21	96	20
1301504650	0113C0534	4/25/2013 7:45	UHP	1	SR-165	3200 South			5		8	2	S	2	1	21	96	20
1302176560	0113C0722	6/4/2013 18:24	UHP	3	SR-165	3200 South			5		7	9	N	2	1	21	96	20
1303137135	13-C4383	6/13/2013 8:21	CACHE CO SO	1	3090 South	SR-165			5					2	1	0	96	20
1301942665	0113C0782	6/17/2013 15:50	UHP	2	SR-165	3200 South			5		7	8	N	2	1	21	96	20
1302392935	0113C0959	7/19/2013 19:48	UHP	1	3200 South	SR-165			5		7	8	N	2	1	21	96	20
1303309895	0113C1168	8/23/2013 15:58	UHP	1	SR-165	3200 South			5		7	8	N	2	2	21	96	20
1303978645	0113C1390	10/8/2013 5:11	UHP	1	SR-165	3200 South			5		8	3	S	2	1	21	96	20
1304693315	0113C1645	11/27/2013 11:07	UHP	3	SR-165	3200 South			5		7	7	N	2	1	21	96	20

1

1 Crash Severity

01	No Injury/PDO	02	Possible Injury	04	Incapacitating Injury
		03	Non-Incapacitating Injury	05	Fatal

2 Motor Vehicle Body Type

01	Passenger Car (2 door)	09	Truck Tractor	18	RV/Motor Home
02	Passenger Car (4 door)	10	Truck/Trailer	19	No Motor Vehicle (trailer only)
03	Station Wagon	11	Heavy Truck Other	20	ATV - Street Legal
04	Pickup	12	Motorcycle		
05	Sport Utility Vehicle	13	School Bus		
06	Van or Mini Van	14	Bus/Motorcoach (not school)	97	Other*
07	Single Unit Truck (2 axles, 6 tires)	15	Farm Equipment (combine, etc.)	99	Unknown
08	Single Unit Truck (3 or more axles)	16	Motorized Scooter/Moped, etc.		
		17	Off Road Vehicle (snowmobile, ATV, etc.)		

2-Odd Veh.

2-Even Veh.

3 Trailing Unit(s)

00	No Trailer/Attachment	04	Horse Trailer	09	Semi-Trailer - Triples
01	Utility Trailer	05	Towed Motor Vehicle	10	Mobile Home
02	Boat Trailer	06	Combination - 2 or More	11	Farm Equipment/Trailer
03	Camping Trailer	07	Semi-Trailer - Single	97	Other*
		08	Semi-Trailer - Doubles	99	Unknown

3-Odd Veh.

3-Even Veh.

4 Cargo Body Type

96	Not Applicable	06	Auto Transporter	09	Flatbed
01	Van/Enclosed Box	07	Concrete Mixer	10	Cargo Tank
02	Hopper (grain,gravel,etc)	08	Garbage/Refuse	11	Pole
03	Bus/Van (seats for 9 - 15 people, including driver)			12	Log Truck
04	Bus (seats more than 15 people, including driver)			13	Dump
05	Intermodal Container Chassis			97	Other*
				99	Unknown

4-Odd Veh.

4-Even Veh.

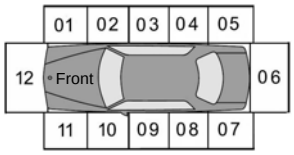
5 Special Function of Motor Vehicle

00	None	06	Fire - Non-Emer
01	Law Enforcement - Emer	07	Snowplow - in Use
02	Law Enforcement - Non-Emer	08	Tow Truck - in Use
03	Ambulance - Emer	09	Construction - in Use
04	Ambulance - Non-Emer	99	Unknown
05	Fire - Emer		

5-Odd Veh.

5-Even Veh.

6 Area of Initial Impact



00	Impact, No Damage
13	Top (roof)
14	Undercarriage
15	Damage, No Impact
16	No Impact, No Damage
99	Unknown

6-Odd Veh.

6-Even Veh.

7-Odd Veh.

7-Even Veh.

7 Most Damaged Area

ONLY ONE CODE per BOX

8 Vehicle Deformity for Most Damaged Area

00	None	03	Severe
01	Minor	99	Unknown
02	Moderate		

8-Odd Veh.

8-Even Veh.

9 Alcohol/Drug Use Suspected

00	None	03	Both
01	Alcohol	99	Unknown
02	Drugs		

9-Odd Veh.

9-Even Veh.

10 Alcohol/Drug Test

00	Not Given		
01	Refused	04	Both
02	Alcohol	05	Taken to M.E.
03	Drug	97	Other*

10-Odd Veh.

10-Even Veh.

11 Test Results

96	Not Applicable / No Test		
01	Alcohol-Pos.		
02	Drug-Pos.	04	Negative
03	Both-Pos.	05	Pending

11-Odd Veh.

11-Even Veh.

Description of Cargo (front page, each vehicle)

00	None		
01	Agriculture/Farm Supplies		
02	Beverages		
03	Building Materials		
04	Chemicals		
05	Coal, Coke		
06	Commodities, Dry Bulk		
07	Concrete		
08	Construction		
09	Drive-Away, Tow-Away		
10	Fresh Produce		
11	Garbage, Refuse, Trash		
12	General Freight		
13	Grain, Feed, Hay		
14	Household Goods		
15	Intermodal Containers		
16	Liquids/Gases	27	Paper Products
17	Livestock	28	Passengers
18	Livestock Containers	29	Radioactive
19	Logs, Poles, Beams, Lumber	30	Refrigerated Food
20	Machinery, Large Objects	31	Rock, Sand, Gravel
21	Meat	32	Salt
22	Metal	33	US Mail
23	Mobile Home	34	Utilities
24	Motor Vehicles	35	Water Well
25	Oilfield Equipment	97	Other*
26	Ore		

12 Work Zone Type

96	Not Applicable / No Work Zone			97	Other*
01	Lane Closure	03	Work on Shoulder or Median	99	Unknown
02	Lane Shift/Crossover	04	Intermittent or Moving Work		

12

13 Work Zone Location

96	Not Applicable / No Work Zone
01	Before the First Work Zone Warning Sign
02	Advance Warning Area (after the first warning sign, but before the work area)
03	Transition Area (where lanes are shifted or tapered for lane closure)
04	Activity Area (adjacent to actual work area, whether workers and equipment were present or not)
05	Termination Area (after the activity area, but before traffic resumes normal conditions)
99	Unknown

13

***Explain in Narrative**

Counties (location section)

01	Beaver	25	Kane	35	Salt Lake
03	Box Elder	27	Millard	37	San Juan
05	Cache	29	Morgan	39	Sanpete
07	Carbon	31	Piute	41	Sevier
09	Daggett	33	Rich	43	Summit
11	Davis			45	Tooele
13	Duchesne				
15	Emery				
17	Garfield				
19	Grand				
21	Iron				
23	Juab				

47	Uintah				
49	Utah				
51	Wasatch				
53	Washington				
55	Wayne				
57	Weber				

14 Direction of Vehicle Travel

01	Northbound	96	Not Applicable (immobile from previous crash, stuck, etc).
02	Southbound		
03	Eastbound		
04	Westbound	99	Unknown
05	Not on Roadway (also for parked motor vehicle)		

14-Odd Veh.

14-Even Veh.

15 Vehicle Contributing Circumstances

00	None	07	Headlights	14	Cargo
01	Brakes	08	Signal Lights	15	Fuel System
02	Steering	09	Tail Lights	16	Mirrors
03	Power Train	10	Horn	17	Wipers
04	Suspension	11	Windows/Windshield	18	Body, Doors, Hood
05	Tires	12	Wheels	97	Other*
06	Exhaust	13	Trailer Hitch	99	Unknown

15-Odd Veh.

15-Even Veh.

FRONT SIDE

16 Driver Condition

01	Appearing Normal	04	Exceeded HOS Limits	06	Emotional/ Prior to
02	Illness / Medical	05	Under the Influence of	97	Other*
03	Fatigue/Asleep		Alcohol/Drugs/Medications	99	Unknown

16-Odd Veh.

16-Even Veh.

17 Driver Contributing Circumstances

00	None	08	Disregard Traffic Signals	16	Improper Backing
01	Exceeded Posted Speed Limit	09	Disregard Road Markings	17	Improper Signal
02	Too Fast for Conditions	10	Swerved or Evasive Action	18	Improper Passing
03	Failed to Yield Right-of-Way	11	Followed too Closely	19	Improper Turn
04	Failed to Keep in Proper Lane	12	Reckless/Aggressive	20	Hit and Run
05	Improper Lane Change	13	Wrong Side/Wrong Way	21	Street Racing
06	Over-Correcting/Over-Steering	14	Improper Parking/Stopping	97	Other*
07	Disregard Traffic Signs	15	Ran Off Road	99	Unknown

17-Odd Veh.

17-Even Veh.

18 Vehicle Maneuver

01	Straight Ahead	07	Making U-turn	13	Parked
02	Backing	08	Leaving Traffic Lane	14	Parking Maneuvers
03	Changing Lanes	09	Entering Traffic Lane	97	Other*
04	Overtaking/Passing	10	Stopped in Traffic Lane	99	Unknown
05	Turning Right	11	Slowing in Traffic Lane		
06	Turning Left	12	Immobile From Previous Crash		

18-Odd Veh.

18-Even Veh.

19 Driver Distraction

00	None	03	Other Electronic Device	06	TV/ Monitor
01	Cell Phone	04	Passengers	07	Other Inside
02	Radio/CD/DVD etc.	05	Texting	08	Other External
		97	Other*	99	Unknown

19-Odd Veh.

19-Even Veh.

20 Traffic Control Device

00	None	07	HOV Lane
01	Traffic Control Signal	08	Ramp Metering - Active
02	Flashing Traffic Control Signal	09	School Zone
03	Stop Sign	10	School Zone Reduced Speed - Active
04	Yield Sign	11	Railroad Crossing-No Signal
05	Warning Sign	12	Railroad Crossing-Signal/Gate
06	Flagger or Officer	97	Other*
		99	Unknown

20-Odd Veh.

20-Even Veh.

21 Roadway Description

01	Two-Way, Not Divided
02	Two-Way, Not Divided With a Continuous Left Turn Lane
03	Two-Way, Divided, Unprotected Median
04	Two-Way, Divided, Positive Median Barrier
05	One-Way
99	Unknown

21-Odd Veh.

21-Even Veh.

22 Manner of Collision (two or more motor vehicles)

96	Not Applicable / Single Veh			04	Sideswipe Same Direction
01	Angle			05	Sideswipe Opposite Direction
02	Front to Rear	06	Parked Vehicle	08	Rear to Rear
03	Head On (front-to-front)	07	Rear to Side	99	Unknown

22

23 Roadway Contributing Circumstances

00	None	97	Other*
01	Debris	99	Unknown
02	Rut, Hole, Bump		
03	Road Surface Condition (wet, icy, snow, slush, etc.)		
04	Work Zone (construction/maintenance/utility)		
05	Worn, Travel-Polished Surface		
06	Traffic Control Device (inoperative, missing, or obscured)		
07	Shoulder (none, low, soft, high)		
08	Animal Caused Evasive Action		
09	Non-Motorist Caused Evasive Action		
10	Non-Contact Vehicle Caused Evasive Action		
11	Obstruction from Previous Crash		

23

Overlay Rev. 11/10

DRIVER(S) AND PERSON(S) INVOLVED INFORMATION (Back Page, Upper Right)

Person Type
01 Driver
02 Passenger
03 Pedestrian
04 Pedalcyclist
05 Scooter/Skater
97 Other*
99 Unknown

Sex
M Male
F Female
U Unknown

Transport By
01 Not Transported
02 Ambulance
03 Helicopter
04 Law Enforcement
05 Private Vehicle
97 Other*
99 Unknown

Ejection
00 Not Ejected
01 Totally Ejected
02 Partially Ejected
96 Not Applicable (motorcycle, snowmobile, pedestrian, pedalcyclist, etc.)
99 Unknown

Injury Level
01 No Injury
02 Possible Injury
03 Non-Incapacitating Injury
04 Incapacitating Injury
05 Fatal

Injury Area
00 None
01 Head
02 Face
03 Neck
04 Chest
05 Abdomen/Pelvis
06 Spine
07 Upper Extremity
08 Lower Extremity
99 Unknown

Safety Equipment Used
00 None
01 Lap & Shoulder Belt
02 Shoulder Belt Only
03 Lap Belt Only
04 Child Restraint - Forward Facing
05 Child Restraint - Rear Facing
06 Booster Seat
07 Helmet
08 Helmet Plus Other
97 Other*
99 Unknown

Ejection Path
96 Not Applicable
01 Windshield
02 Side Window/Door
03 Rear Window/Door
97 Other*
99 Unknown

Injury Cause
00 None
01 Steering Wheel
02 Dash/Windshield
03 Airbag
04 Seatbelt
05 Roof
06 Other Interior
07 Vehicle Exterior
08 External Object
97 Other*
99 Unknown

Disposition of Vehicle
01 Retained by Driver
02 Towed/Disabled
03 Towed/Impounded
04 Towed Other
05 Hit and Run

Used Properly 01 Yes 02 No 99 Unknown

Air Bag
00 None
01 Not Deployed
02 Deployed - Front
03 Deployed - Side
04 Deployed - Other
05 Deployed - Combination
06 Deactivated
07 Missing
99 Unknown

Extrication
01 Not Extricated
02 Extricated
99 Unknown

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24 Visual Contributing Circumstances (24-Odd Veh. / 24-Even Veh.)
00 None
01 Weather Condition
02 Physical Obstruction
03 Windshield or Other Window Obscured
04 Trees, Crops, Bushes, Other Vegetation
05 Parked Vehicle(s)
06 Signs, Billboards, etc.
07 Moving Vehicle(s)
08 Building
09 Guardrail/Barrier
10 Glare
11 Smoke
97 Other*
99 Unknown

25 Weather Condition
01 Clear
02 Cloudy
03 Rain
04 Snowing
05 Blowing Snow
06 Sleet, Hail
07 Fog, Smog
08 Severe Crosswinds
09 Blowing Sand, Soil, Dirt
99 Unknown

26 Light Condition
01 Daylight
02 Dark - Lighted
03 Dark - Not Lighted
04 Dark - Unknown Lighting
05 Dawn
06 Dusk
99 Unknown

27 Roadway Surface Condition
01 Dry
02 Wet
03 Snow
04 Slush
05 Ice
06 Water (standing, moving)
07 Mud
08 Sand, Dirt, Gravel
09 Oil
97 Other*
99 Unknown

BACK SIDE

28 Roadway/Junction Feature

Non-Intersection	Intersection
00 No Special Feature/Junction	20 4-Leg Intersection
01 Bridge (overpass/underpass)	21 T-Intersection
02 Railroad Crossing	22 Y-Intersection
03 Business Drive	23 5-Leg or More Intersection
04 Farm/Residential Drive	24 Roundabout
05 Alley	25 Ramp Intersection With Crossroad
06 Crossover in Median	26 Bike/Ped Path Intersection
07 On-Ramp Merge Area	
08 Off-Ramp Diverge Area	97 Other*
09 On-Ramp	99 Unknown
10 Off-Ramp	

29 Road Jurisdiction
01 State (I, US, SR)
02 County
03 City
04 Federal (NP, BLM, FS, etc)
05 Private Property
97 Other*
99 Unknown

30 Non-Motorist Action
96 Not Applicable
01 Entering or Crossing Road
02 Walking, Running, Jogging, Playing, etc.
03 Approaching or Leaving Motor Vehicle
04 Standing, Lying, Sitting
05 Cycling
06 Working
07 Working on Vehicle
08 Pushing Motor Vehicle
09 Alcohol/Drugs
97 Other*
99 Unknown

31 Non-Motorist Contributing Circumstances
96 Not Applicable
00 None
01 Improper Crossing
02 Darting
03 Wrong Side of Road
04 Not Visible
05 Inattentive
06 Failure to Obey Traffic Signs, Signals, or Officer
07 Failure to Yield Right-of-Way
08 In Roadway (standing, on knees, lying, etc.)
97 Other*
99 Unknown

32 Non-Motorist Location
96 Not Applicable
01 Marked Crosswalk at Intersection
02 Unmarked Crosswalk at Intersection
03 Mid-Block Crosswalk
04 School Crosswalk at Intersection
05 Mid-Block School Crosswalk
06 In Roadway (no crosswalk or intersection)
07 Median (not on shoulder)
08 Shoulder
09 Island
10 Sidewalk
11 Roadside
12 Dedicated Bike Path/Lane
13 Shared Use Path/Trail
14 Outside Right-of-Way
15 Inside Building
97 Other*
99 Unknown

33 Horizontal Alignment
01 Straight
02 Curve
99 Unknown

34 Vertical Alignment
01 Level
02 Grade
03 Hillcrest
04 Sag (bottom)
99 Unknown

35 Pavement Type
01 Concrete
02 Asphalt (blacktop)
03 Gravel, Stone
04 Dirt
97 Other*
99 Unknown

ONLY ONE CODE per BOX

***Explain in Narrative**

36 Location of First Harmful Event
01 On Roadway
02 Shoulder
03 Median
04 Gore
05 Roadside (outside of shoulder)
06 In Parking Lane or Zone
07 Off Roadway, Location Unknown
08 Outside Right-of-Way
99 Unknown

Sequence of Events (codes 01 - 96 only)
Most Harmful Event (codes 00, 07 - 69 only)
(front page, each vehicle)

37 First Harmful Event (codes 07 - 69 only)

Non-Collision:
00 No Damage or Injury, This Vehicle
01 Ran Off Road Right
02 Ran Off Road Left
03 Crossed Median/Centerline
04 Equipment Failure (tire, brakes, etc.)
05 Separation of Units
06 Downhill Runaway
07 Overturn/Rollover
08 Cargo/Equipment Loss or Shift
09 Jackknife
10 Fire/Explosion
11 Immersion
12 Fell/Jumped From Motor Vehicle
19 Other Non-Collision*

Collision With Person, Vehicle, or Non-Fixed Object
20 Other Motor Vehicle in Transport
21 Parked Motor Vehicle (off roadway)
22 Pedestrian
23 Pedalcycle
24 Skates, Scooters, Skateboards
25 Animal - Wild
26 Animal - Domestic
27 Work Zone/Maintenance Equipment
28 Freight Rail
29 Light Rail
30 Passenger Heavy Rail
31 Thrown or Fallen Object
39 Other Non-Fixed Object*

Collision With Fixed Object:
40 Guardrail
41 Concrete Barrier
42 Cable Barrier
43 Crash Cushion
44 Guardrail End Section
45 Concrete Sloped End Section
46 Cable Barrier End Section
47 Access Control Cable
48 Bridge Rail
49 Bridge Pier or Support
50 Bridge Overhead Structure
51 Traffic Sign Support
52 Delineator Post
53 Other Post, Pole or Support
54 Utility Pole/Light Support
55 Traffic Signal Support
56 Culvert
57 Ditch
58 Embankment
59 Snow Bank
60 Tree/Shrubbery
61 Mailbox/Fire Hydrant
62 Fence
63 Curb
69 Other Fixed Object*
96 Not Applicable (used only to fill unused box(es))

Overlay Rev. 11/10

APPENDIX C: Existing Features &

Previous Master-Planning Efforts

SR-165 @ 3200 S & MILL RD, NIBLEY, UT
EXISTING CONDITIONS AND PREVIOUS MASTER PLANNING

SCALE: 1"=150'

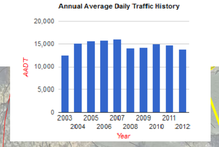
TRAFFIC: SR-165

Route 0165 MP 6.737 - 7.902

4000 South Nibley
Route: 0165, Milepost: 6.737 - 7.902
Station: 005-0330

2012 Statistics

- 13,930 AADT
- -5.6 % change from 2011-2012
- 8 % Single Unit Trucks
- 10 % Combo Unit Trucks



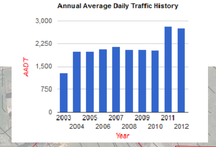
TRAFFIC: MILL RD

Route 1197 MP 0 - 0.507

SR 165 via 3100 South Nibley
Route: 1197, Milepost: 0.000 - 0.507
Station: 005-0395

2012 Statistics

- 2,755 AADT
- -2.0 % change from 2011-2012
- 0 % Single Unit Trucks
- 0 % Combo Unit Trucks



TRAFFIC: 3200 S

Route 1176 MP 1.59 - 2.556

800 West - SR 165 Nibley via 3200 South
Route: 1176, Milepost: 1.590 - 2.556
Station: 005-0505

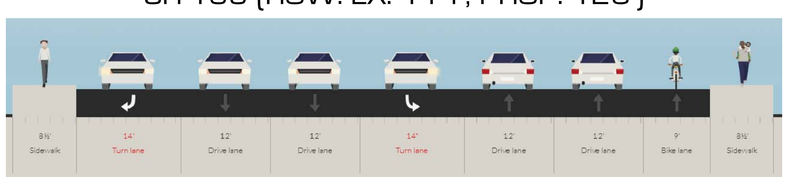
2012 Statistics

- 2,640 AADT
- -2.0 % change from 2011-2012
- 0 % Single Unit Trucks
- 0 % Combo Unit Trucks

N

0 150' 300'

SR-165 (ROW: EX. 114', PROP. 120')



MILL ROAD (ROW: EX. 84', PROP. 80'-99')

3200 SOUTH (ROW: EX. 75', PROP. 80'-99')

LEADERS IN SUSTAINABLE ENGINEERING AND PLANNING

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F: 435.213.3762
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SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
NIBLEY, UTAH

MARK:	DATE:	DESCRIPTION:

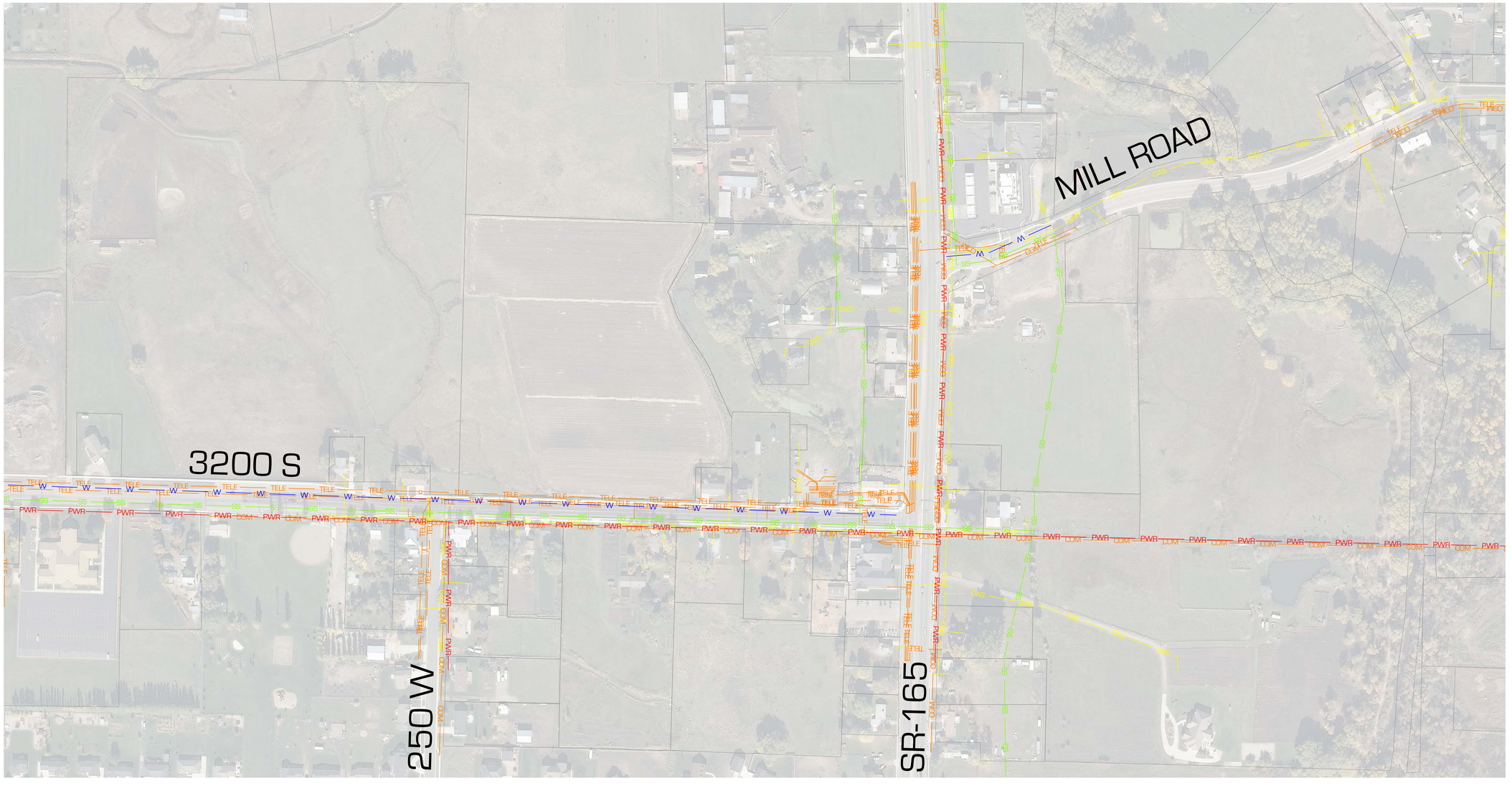
PROJECT #: 505-1401
DRAWN BY: M. TAYLOR
REVIEWED BY: D. MACFARLANE
ISSUED: 07.31.2014

EXISTING CONDITIONS & PREVIOUS MASTER PLANNING

C-001

APPENDIX D: Existing Utility Information

SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
SCALE: 1"=150'



NOTES:

1. UTILITY MAPPING IS BASED ON DRAWINGS PROVIDED BY PRIVATE UTILITY COMPANIES AND THE COUNTY-MAINTAINED NIBLEY CITY ASSET GIS DATABASE. THERE IS NO GUARANTEE IMPLIED OR EXPRESSED THAT THIS UTILITY MAP IS ENTIRELY COMPLETE OR ACCURATE. IT IS INTENDED SOLELY FOR PLANNING PURPOSES.

2. THE NIBLEY CITY GIS ASSET DATABASE ONLY MAINTAINS LOCATIONS OF VISIBLE INFRASTRUCTURE, SUCH AS, WATER VALVES AND MANHOLES. ACCORDINGLY THE CITY SEWER AND WATER LINE LOCATIONS ARE PURELY ASSUMED BASED ON THESE VISIBLE SURFACE ASSETS. IN SOME CASES DISCUSSIONS WITH LOCAL RESIDENTS HELPED TO IDENTIFY THE UTILITY LOCATION, AS IN THE CASE OF THE SR-165 EASTSIDE SEWER LINE.

LEGEND

W W	CULINARY WATER
SS SS	SANITARY SEWER
PWR PWR	ROCKY MOUNTAIN POWER
COM COM	COMCAST
TELE TELE	CENTURY LINK
GAS GAS	NATURAL GAS

N

0 150' 300'

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SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
NIBLEY, UTAH

MARK	DATE	DESCRIPTION

PROJECT #: 505-1401
DRAWN BY: M. TAYLOR
REVIEWED BY: D. MACFARLANE
ISSUED: 08.24.2014

EXISTING UTILITIES

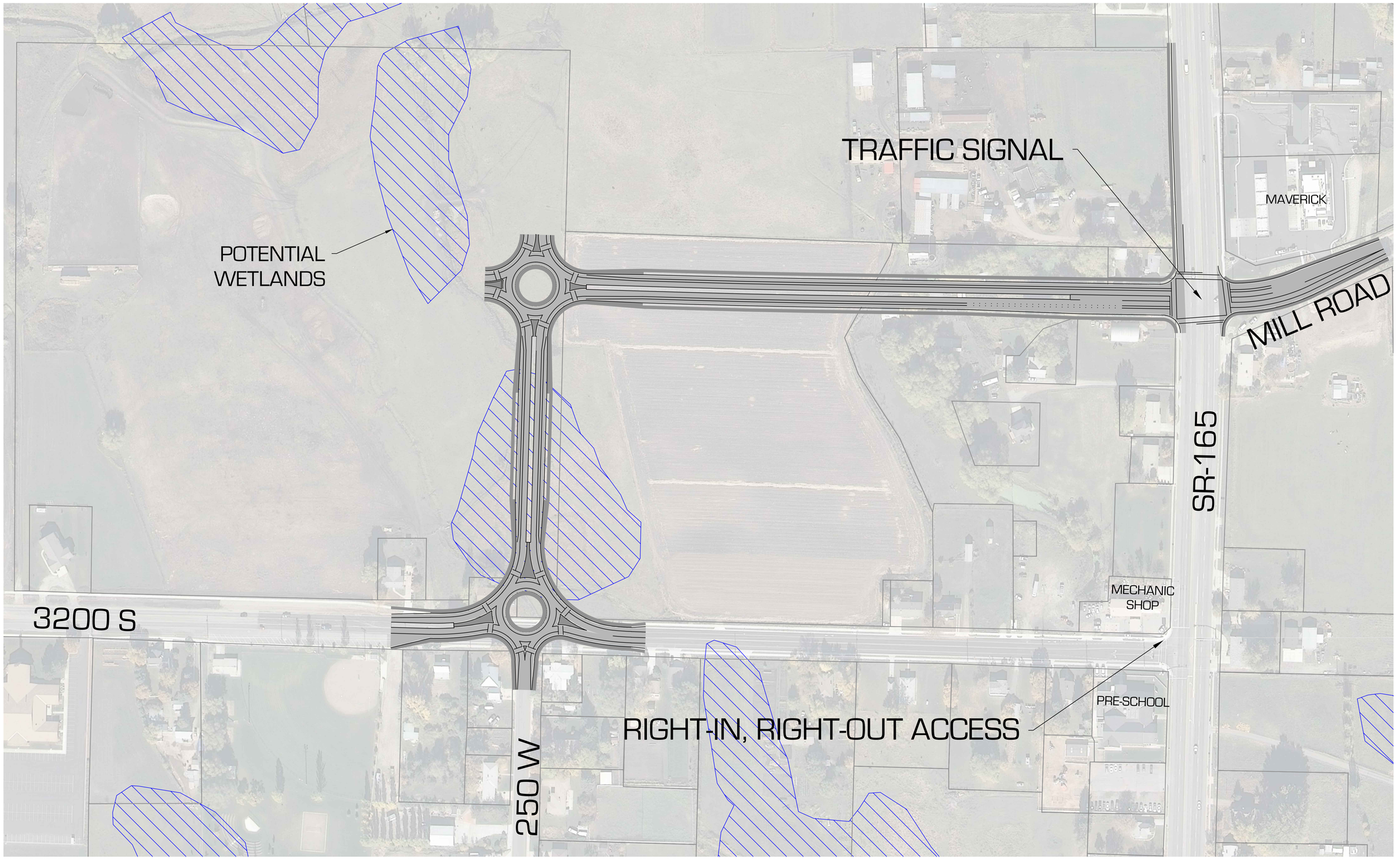
C-002

APPENDIX E: Engineering Drawings

SR-165 @ 3200 S & MILL RD
OPTION 1
SCALE: 1"=100'

N

0 100' 200'



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SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
NIBLEY, UTAH

MARK	DATE	DESCRIPTION

PROJECT #: 505-1401
DRAWN BY: M. TAYLOR
REVIEWED BY: D. MACFARLANE
ISSUED: 08.24.2014

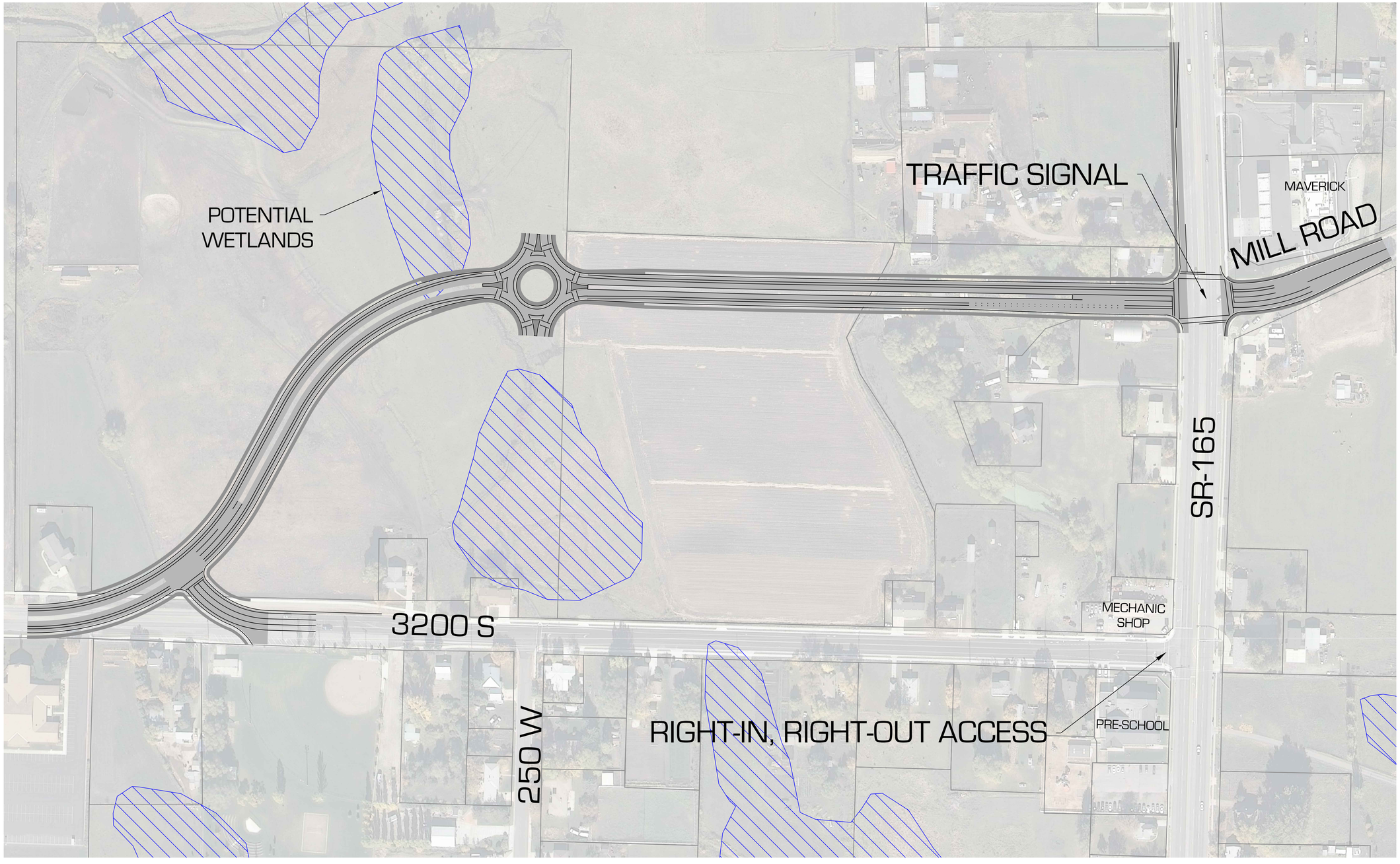
OPTION 1

C-101

SR-165 @ 3200 S & MILL RD
OPTION 2
SCALE: 1"=100'

N

0 100' 200'



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SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
NIBLEY, UTAH

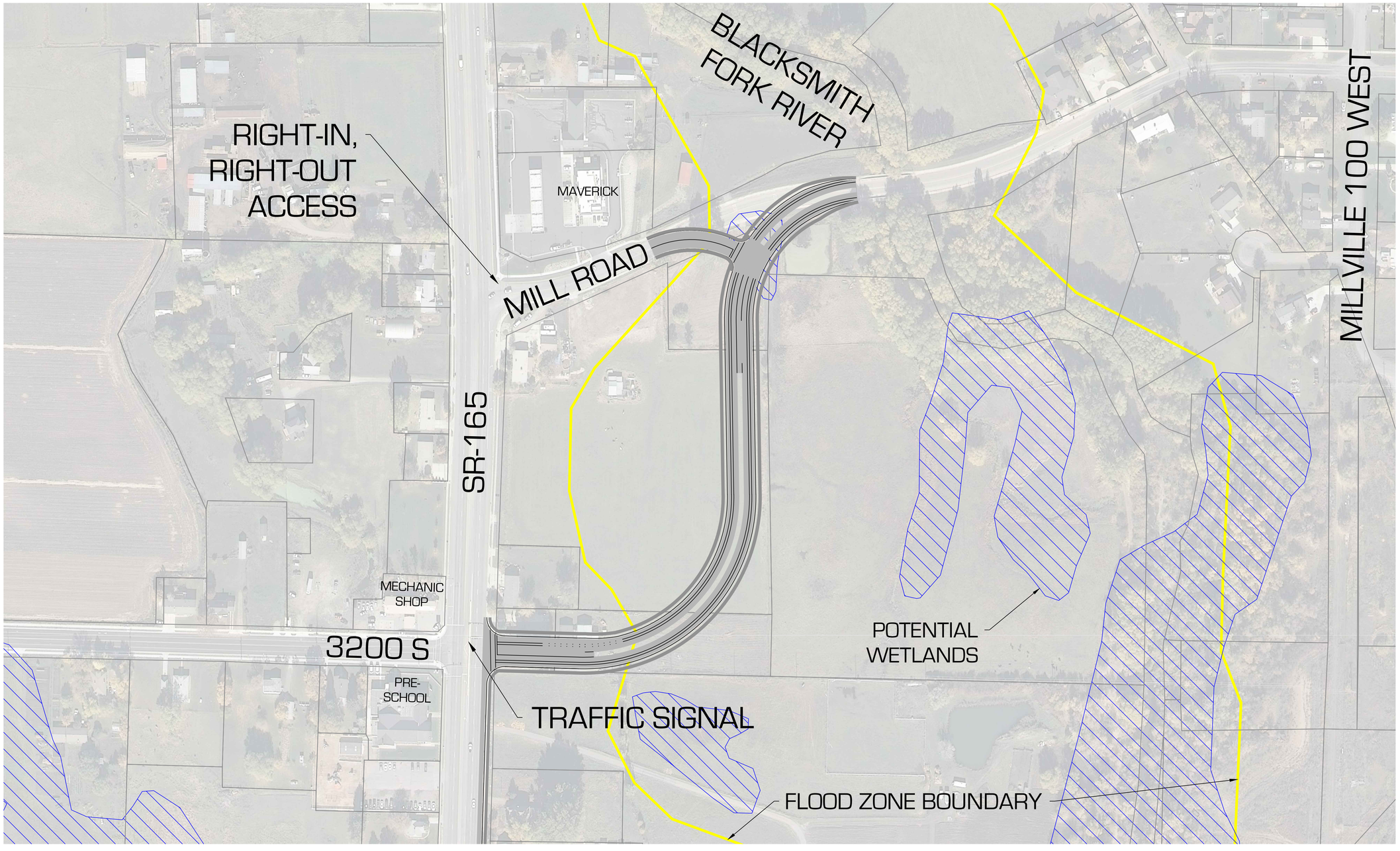
MARK	DATE	DESCRIPTION

PROJECT #:	505-1401
DRAWN BY:	M. TAYLOR
REVIEWED BY:	D. MACFARLANE
ISSUED:	08.24.2014

OPTION 2

C-102

SR-165 @ 3200 S & MILL RD
OPTION 3
SCALE: 1"=100'



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SR-165 @ 3200 S & MILL RD
EXISTING UTILITIES
NIBLEY, UTAH

MARK	DATE	DESCRIPTION

PROJECT #: 505-1401
DRAWN BY: M. TAYLOR
REVIEWED BY: D. MACFARLANE
ISSUED: 08.24.2014

OPTION 3

C-103

APPENDIX F: Property Owner Involvement

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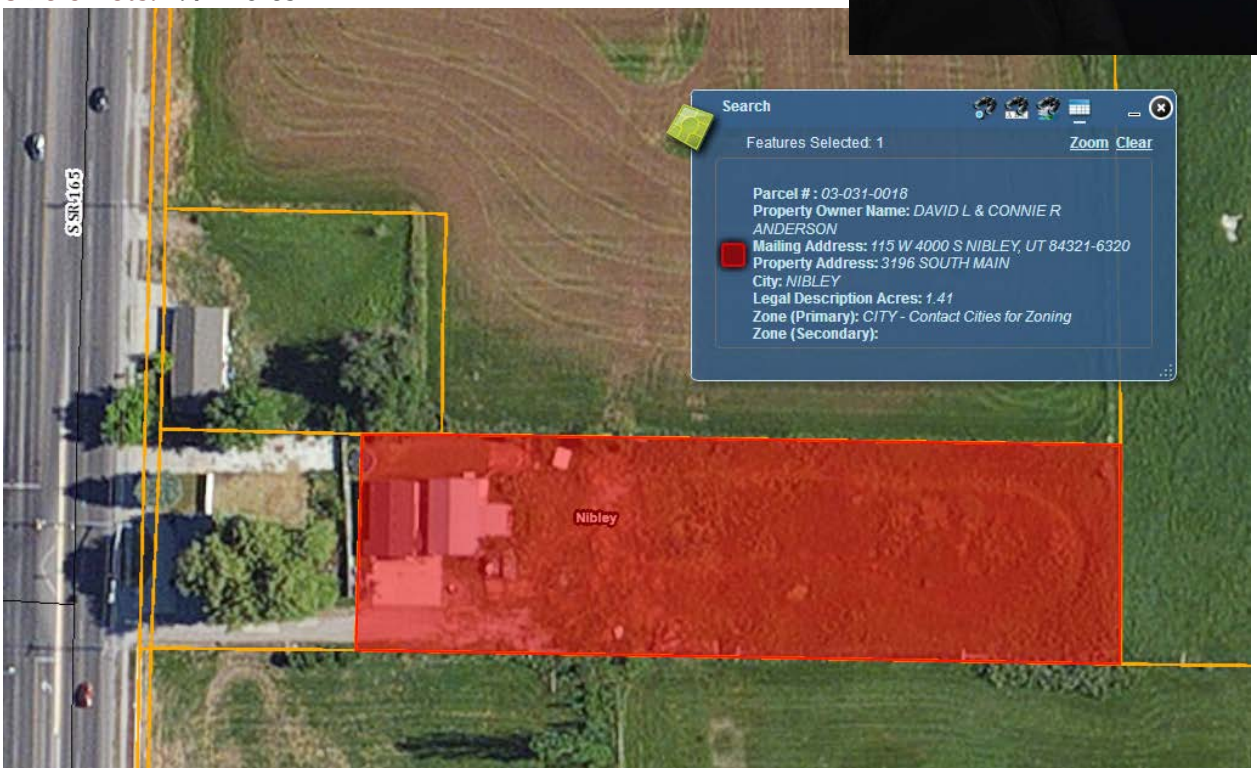
Leaders in sustainable engineering and planning

Property Owners: David and Connie Anderson
Affected Address: 3196 South Main Nibley UT
Owner Address: 115 W 4000 S Nibley UT
Owner phone number:

Size of lots: 1.41 Acres



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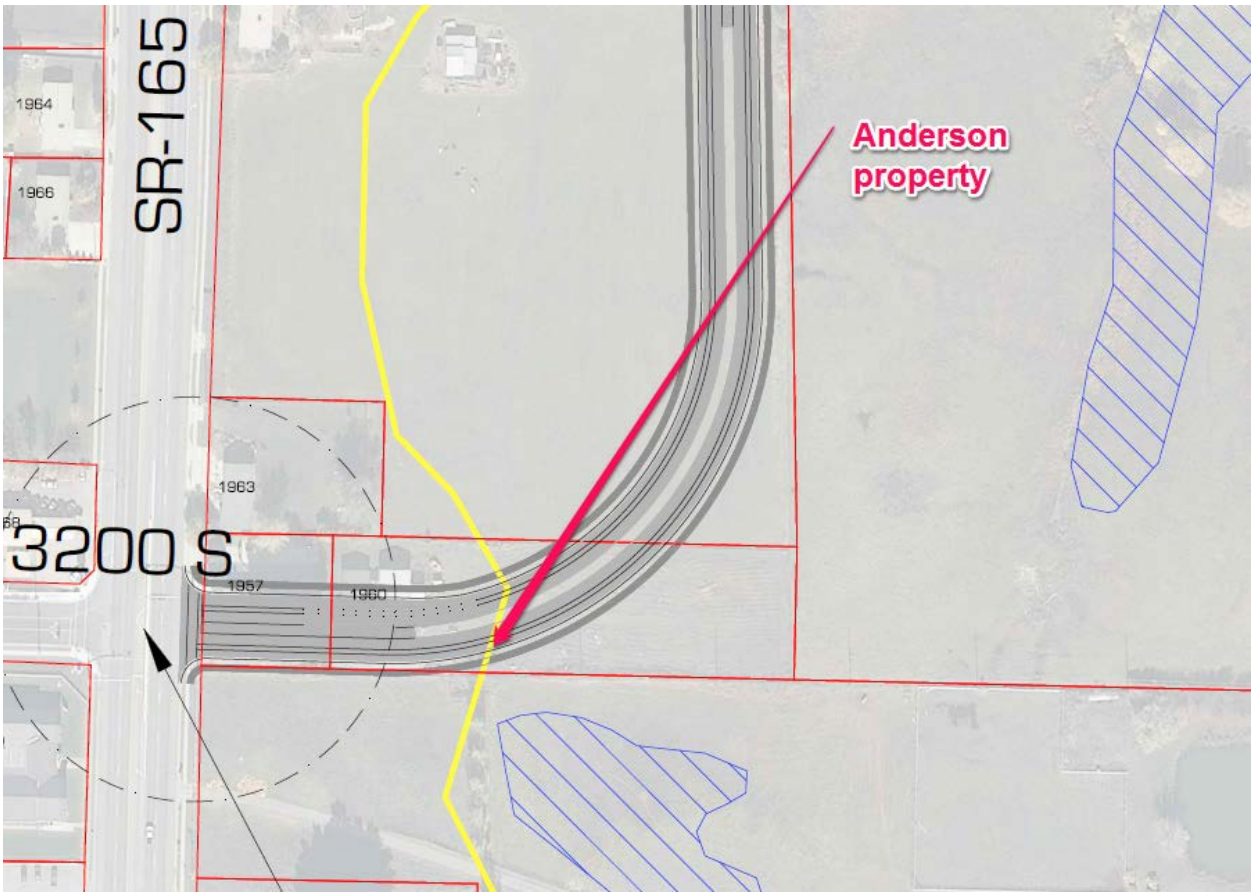
Leaders in sustainable engineering and planning

Which concepts would affect their property and how:
Concept 3 (east side) would go directly through their property. A home, shed and trees would have to be demolished.



Owner's input on changes coming to their area:
Agrees the intersection is dangerous and would like change.

Owner's willingess to work with city:
Willing to work with the city. Currently they rent the home and use the shed for a plumbing business and work.

Specific concerns with property and lot regarding new streets and commercial area:
The home, shed, trees and landscaping would have to be domlished. The lot also has sewer lines on the east side.

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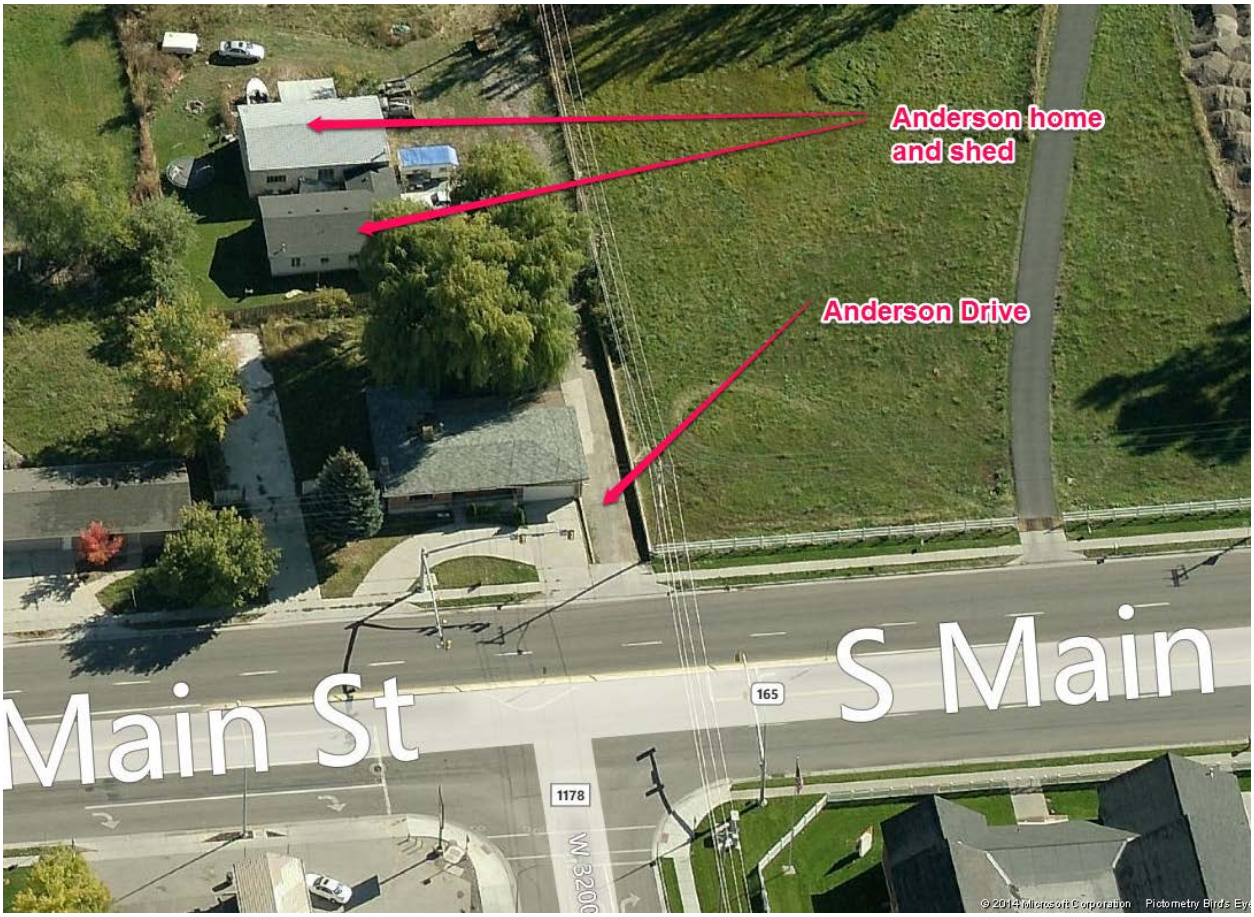
Leaders in sustainable engineering and planning

Pictures and images:



civilsolutionsgroup inc.

Leaders in sustainable engineering and planning

Property Owners: Doug and Linda Anderson
Affected Address: 2779 S. Main St., Nibley, UT
Owner Address: 40 East Mill Road, Nibley Utah
Owner phone number: 435-753-1167

Size of lot: 1.05 Acres

Which concepts would affect their property and how:
Concept 3 (east) affects the Owner. The proposed concept would have the street running directly through the east side of their property.

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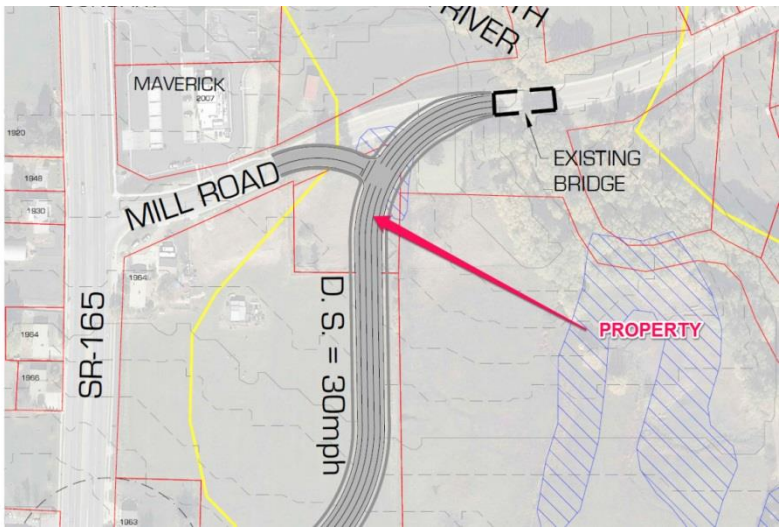
Leaders in sustainable engineering and planning



Owner's input on changes coming to their area:
Doug and Linda know 3200 South is extremely dangerous. Linda avoids the intersection and prefers to go around the block instead of left hand turns.

Owner's willingess to work with city:
Yes they are willing to discuss it with the city; however they say the city would have to purchase the entire lot because it is deemed unusable after new street is installed.

Specific concerns with property and lot regarding new streets and commercial area:
This area is prone to flooding. The lot previously had a home which was demolished after UDOT purchased the property to redo the intersection and bridge. Mill Road essentially serves as a dam and backs up water flooding onto the property. Redesign of the area drainage would be necessary if this route were chosen.

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Leaders in sustainable engineering and planning

Pictures and images:

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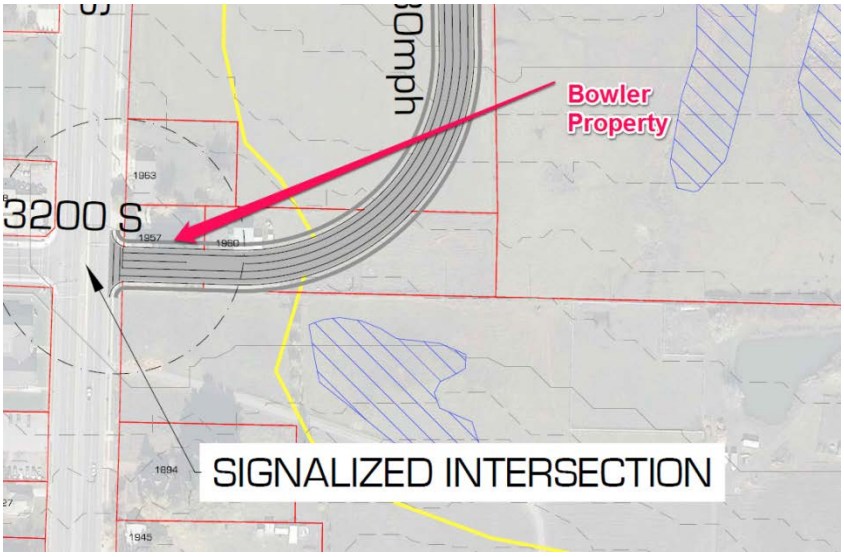
Leaders in sustainable engineering and planning

Property Owners: Stacy & Stephanie Bowler
Affected Address: 3196 S Main Street, Nibley UT
Owner Address: same as above
Owner phone number: 435-754-4464

Size of lot: 0.36 Acres

Which concepts would affect their property and how:
Concept 3 (east side) affects the Owner. The proposed concept 3 would go directly through home. The residential building and trees would need to be demolished. The city would need to purchase the entire property.



Owner's input on changes coming to their area:
Bowler's believe a necessary change is required for the area and safety. Stephanie frequently walks her children to the nearby Nibley park (while crossing 165). She has seen many people crossing the highway on foot and personally seen automobile crashes. They concur that the intersection is dangerous.

Owner's willingess to work with city:
Yes they are willing to discuss selling with the city.

Specific concerns with property and lot regarding new streets and commercial area:
They are thinking about moving in the future.

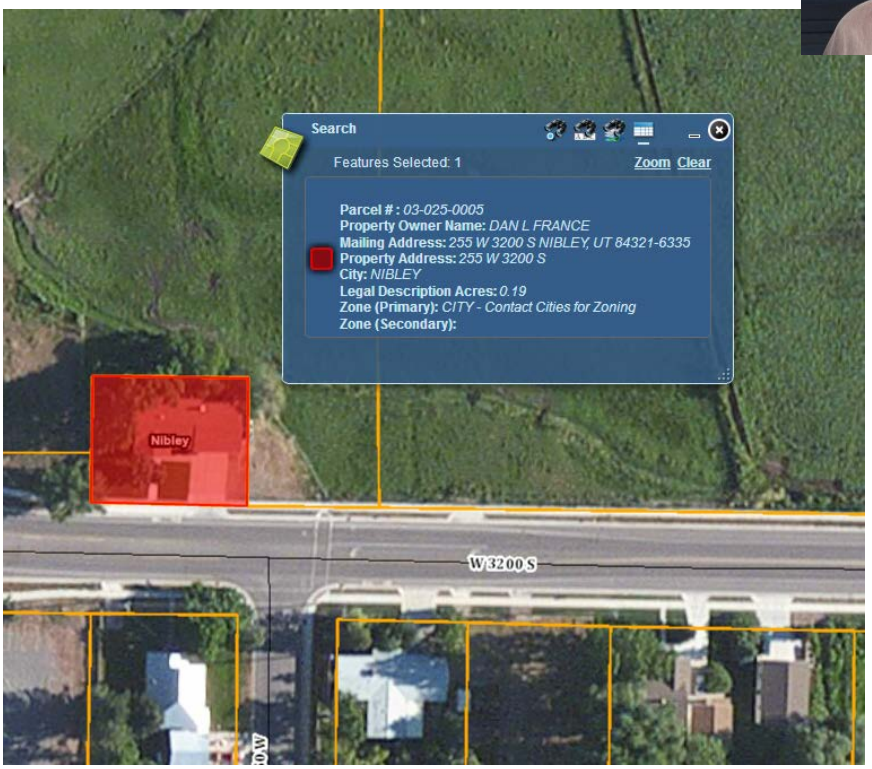
Pictures and images:

civilsolutionsgroup inc.

Leaders in sustainable engineering and planning

Property Owners: Dan France
Affected Address: 255 W 3200 S, Nibley UT
Owner Address: same as above
Owner phone number: 435-752-7811 (work)

Size of lot: 0.19 Acres



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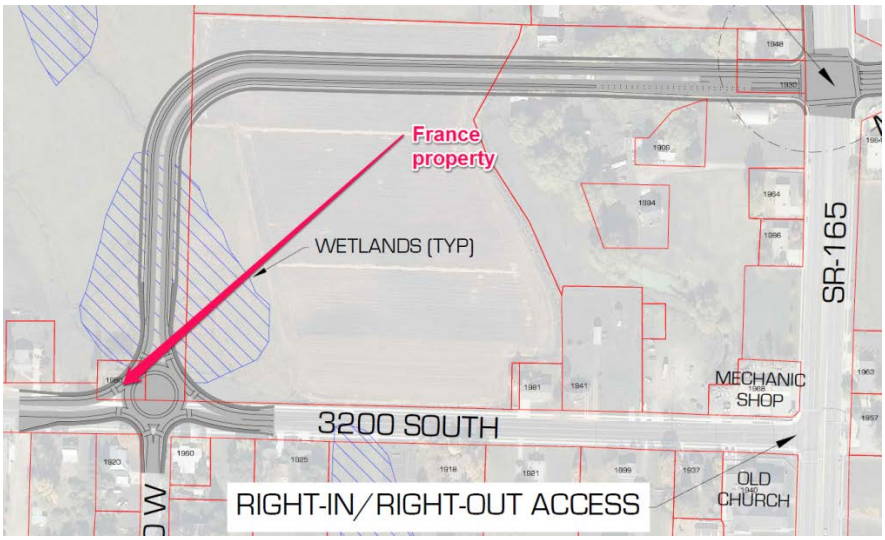
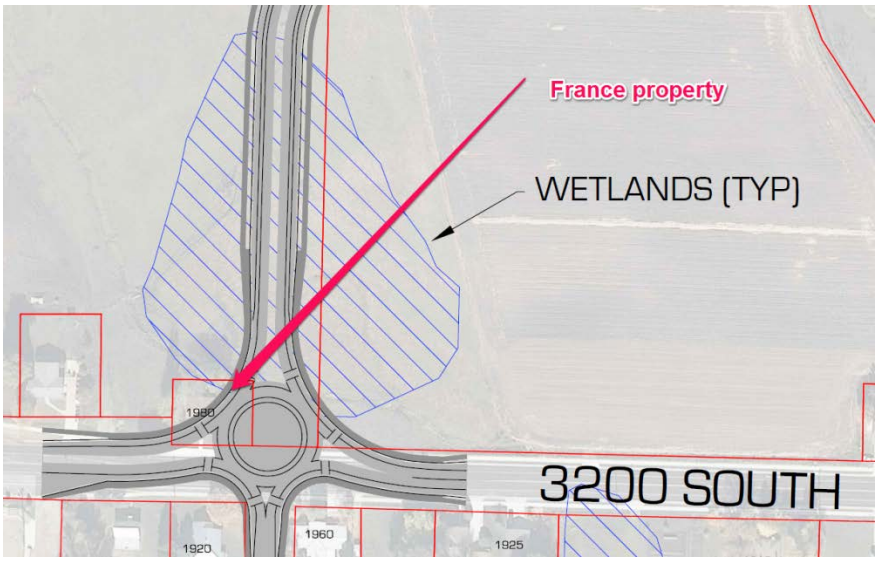
Leaders in sustainable engineering and planning

Which concepts would affect their property and how:

Concept one (west side round about) affects the Owner. If the round about were built as shown it would be necessary for Nibley City to purchase the entire property for the round about. This would include his home, landscape and lot. The round about was specifically moved northward to have major impact on one property and minimal impact on the two to the south.





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Owner's input on changes coming to their area:
Dan was not happy with thecurrent width of 3200 South and the taking of some of his lot/property to develop the new street. He felt the street is too wide. Dan does understand that the interestion is dangerous and that the area is developing and chaning. Dan would like to see the area remain rural.

Owner's willingess to work with city:
Yes he is wiling to talk with the city, but doesn't neccesarily want to give up his property. He doesn't want to move, but willing to do it if it is necessary and the area is going to develop and the new streets implemented.

Specific concerns with property and lot regarding new streets and commercial area:
The east setback on the home is very short and would put the home close to the sidewalk if a 4 way intersection was implemented and not a round about.

Pictures and images:

France home looking northeast

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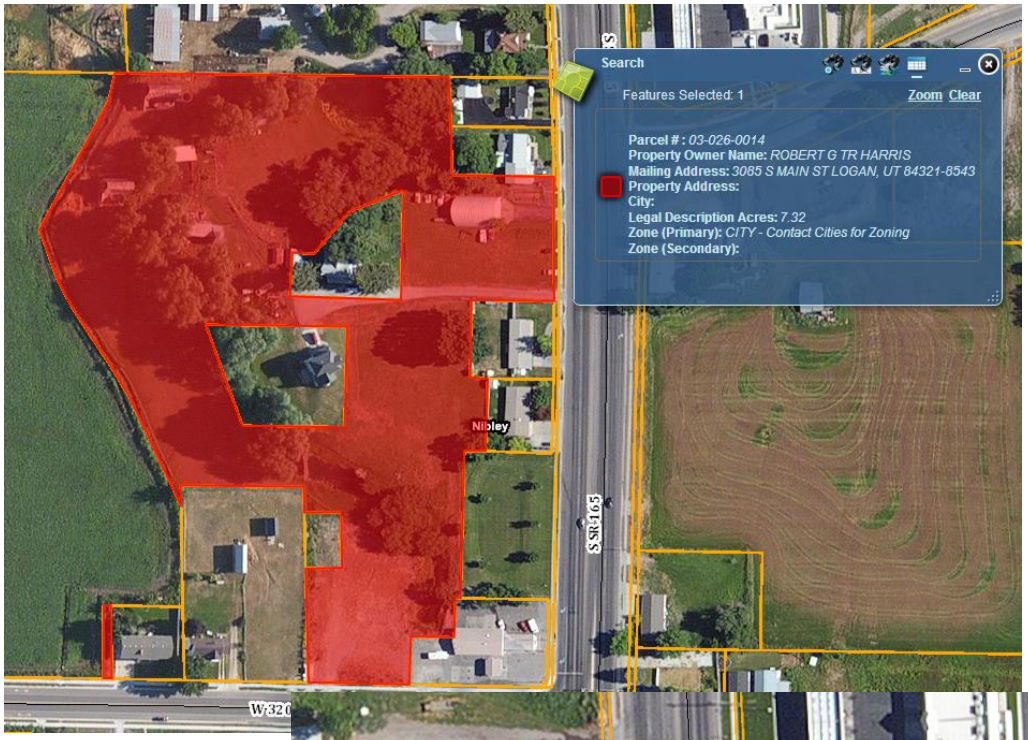
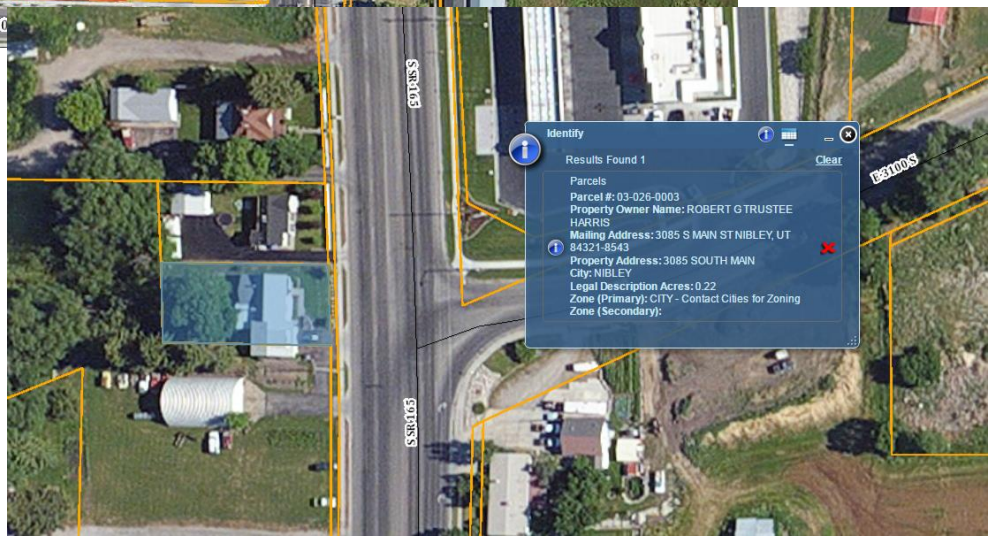
Leaders in sustainable engineering and planning

Property Owners: Robert & Virginia Harris
Affected Address: 3085 S Main Street, Nibley UT
Owner Address: same as above
Owner phone number: 435-752-1708

Size of lots: 8.40 Acres





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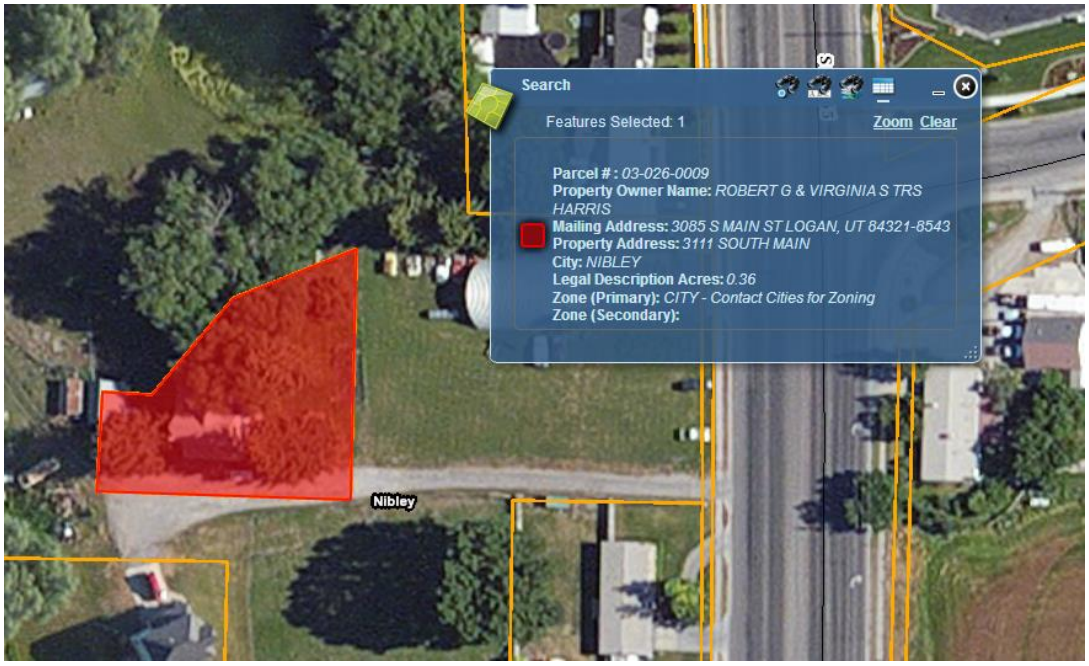

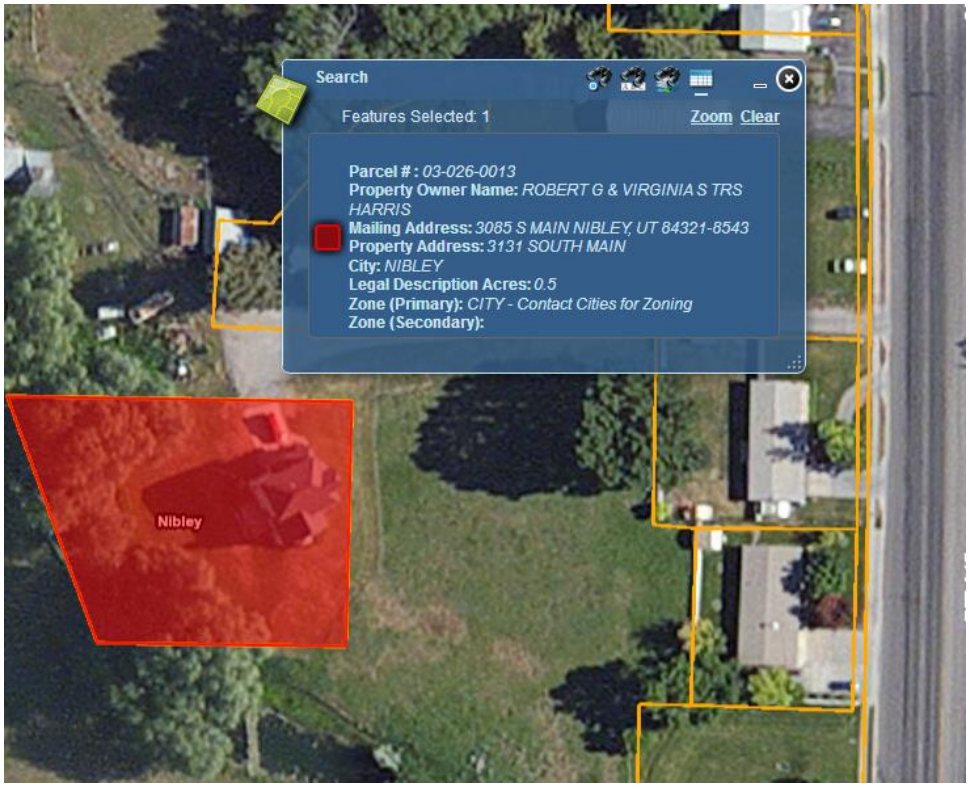

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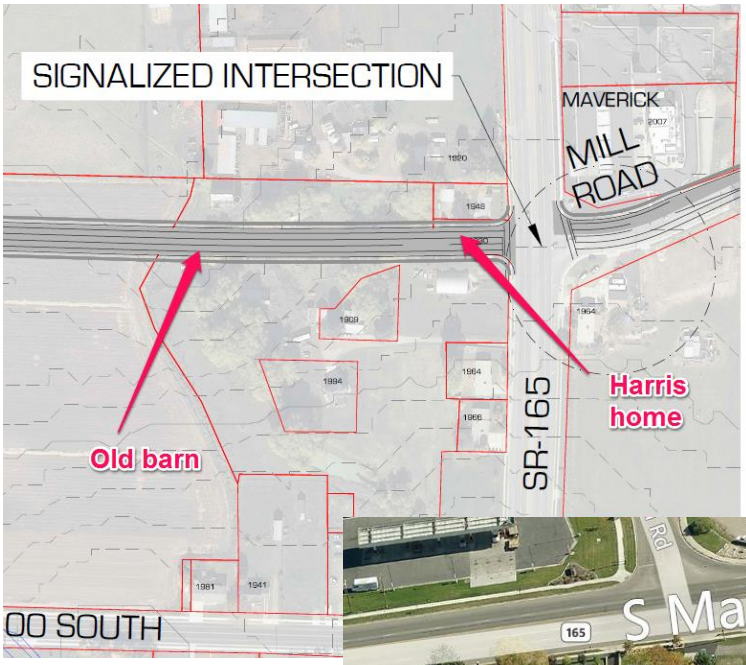
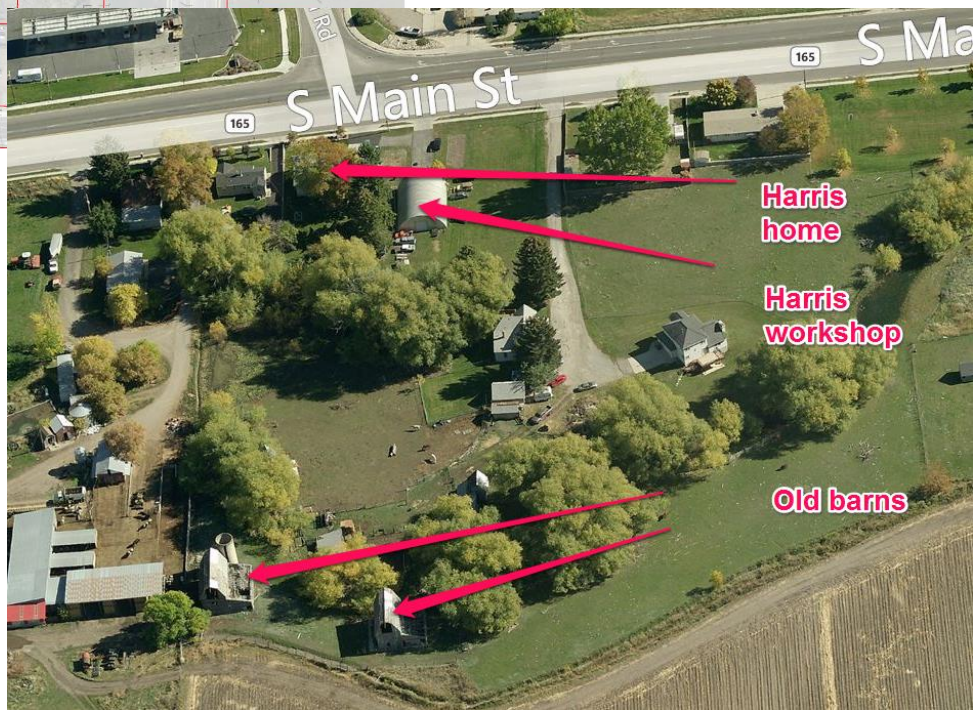
Leaders in sustainable engineering and planning

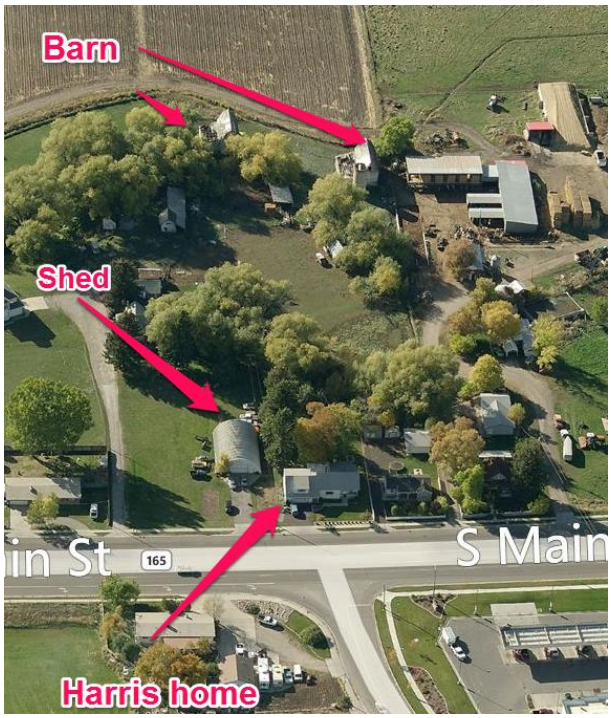
Which concepts would affect their property and how:

Concepts 1 and 2 directly affects the Owners. The proposed concepts would go west directly through their property. The residential building, large trees and at least one of the two barns would be required to be demolished or moved (house) if the street were to proceed west. Nibley City would need to purchase the land and building or move it. However, moving the home may prove difficult or impossible given that it has been added on to multiple times since the last time the home was moved several decades ago.

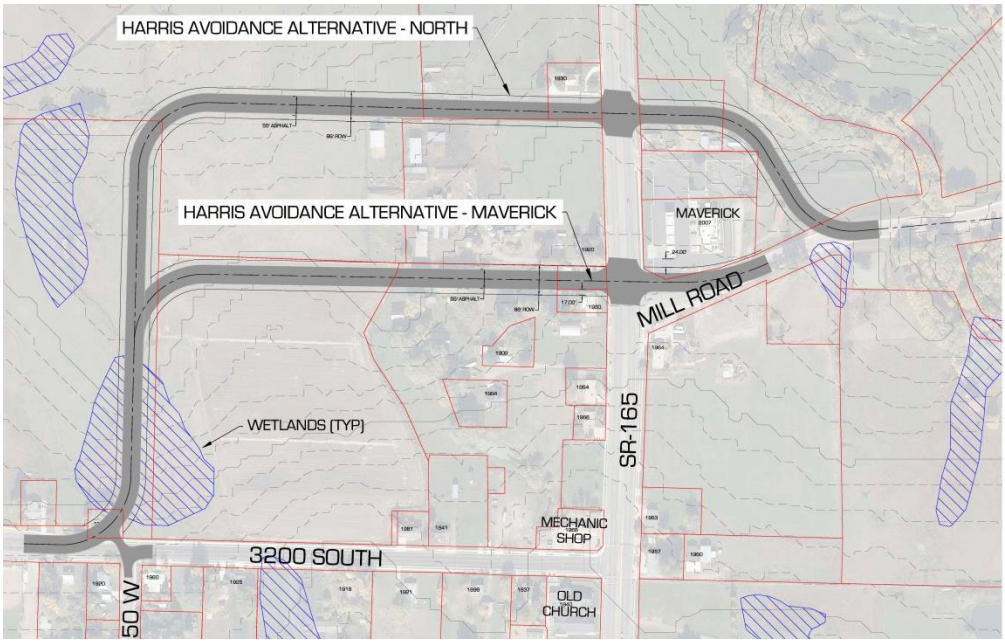




Owner's input on changes coming to their area:
Owner agrees that the High T intersection is dangerous. The Harris's have lived on this property for over 65 years. They have seen the road change from a dirt road to a 5 lane highway. They mentioned that currently it is dangerous to access their driveway from 165 and also they warn family/friends about visiting and parking on the highway. Bob (92) and Virginia (89) have strong roots in the area and have strong feelings about staying. CSG met twice with the Harris family, the first time with Bob and Virginia and the second time with them and their adult children.



Owner's willingess to work with city & Efforts to Mitigate:
Bob and Viriginia are not interested in selling. CSG has considered multiple concepts to work with the Harris's including shifting the road to the north and impacting the Casey Schenavar home and the Maverick as opposed too their own. However, they stated that they would rather have the home go straight through their own lot, than have to live next to a major road. CSG also considered the option of taking the road to the north around the Maverick using two 30mph curves and then heading the road west across SR-165 towards 2965 South, allowing the future connection of these two roads in a grid-like manner. However, this option not only added a significant of road length on to the project, but encroached on the one-mile spacing between this intersection and the proposed intersection at 2600 South. It also created a third intersection in the project area, thus compounding existing vehicular and pedestrian safety issues. It was ultimately decided by city officials to not pursue this option. A graphic of these two Harris Avoidance alternatives can be seen on the following page.



The Harris' explained that if the city did ultimately decide to take their home that they had family in the construction business that could custom build a new home to suit their needs somewhere else on large property, or they could move in with one of their many children who live close by. In either case they would hope that the auto-shop/hanger would be preserved as that is Mr. Harris' primary occupation and hobby.

Specific concerns with property and lot regarding new streets and commercial area:
The owner will need to have access to the shed, which is on the south side of the home. The home will need to be demolished. A number large trees and barn would also need to be demolished. There are wet soils and a spring west of the home.

Pictures and images:

Harris backyard.

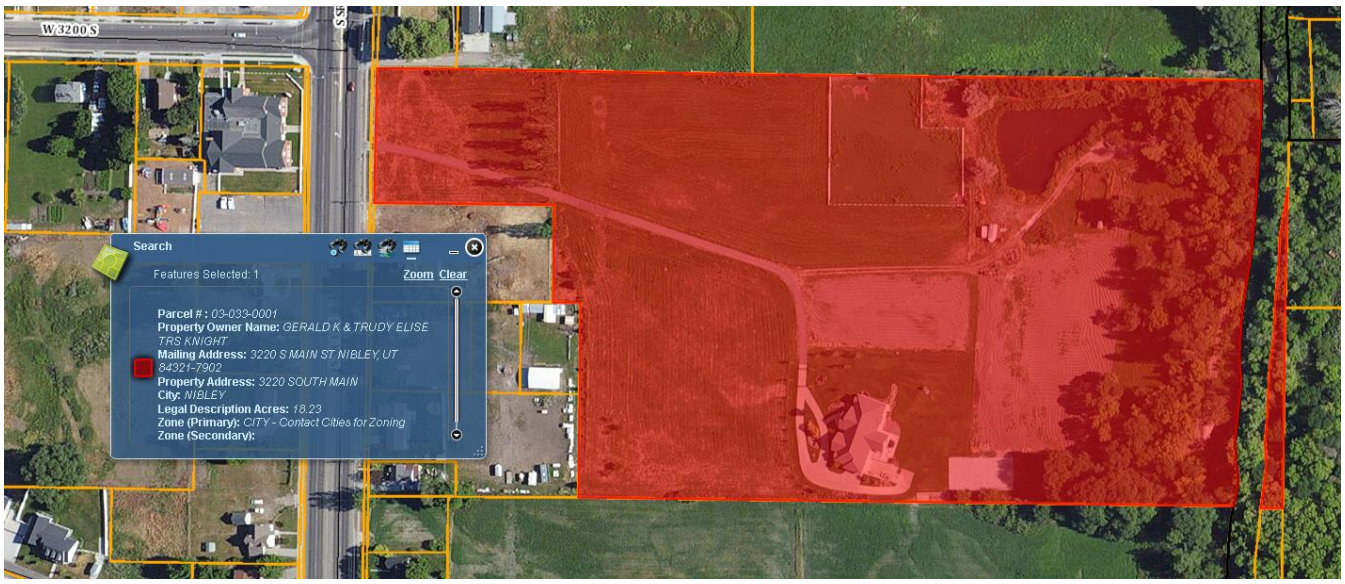
Harris home looking east.

civilsolutionsgroup inc.

Leaders in sustainable engineering and planning

Property Owners: Gerald & Trudy Knight
Affected Address: 3220 S. Main St., Nibley, UT
Owner Address: 3220 S Main St. Nibley, UT
Owner phone number: 435-755-9675

Size of lot: 18.23 Acres



Which concepts would affect their property and how:
Concept 3 (east side) affects the Owner's access with the addition of a right-turn deceleration lane, though given the wide ROW on SR-165, a strip take will most likely not be required. The home itself is at a distance of about 900 feet from the intersection.

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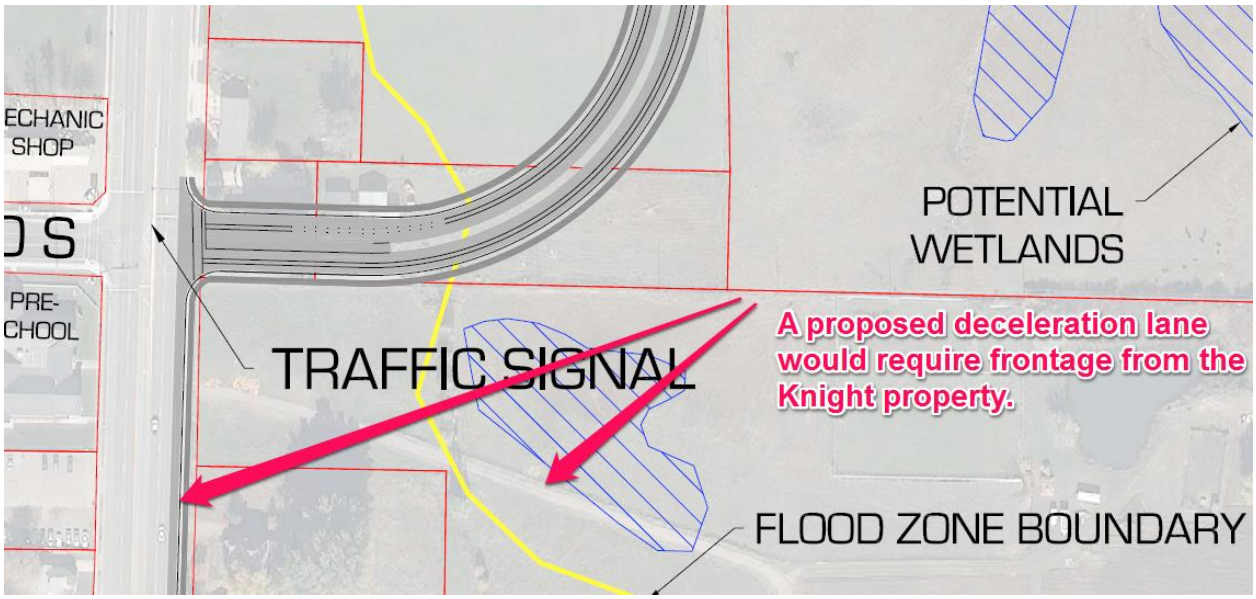
Leaders in sustainable engineering and planning

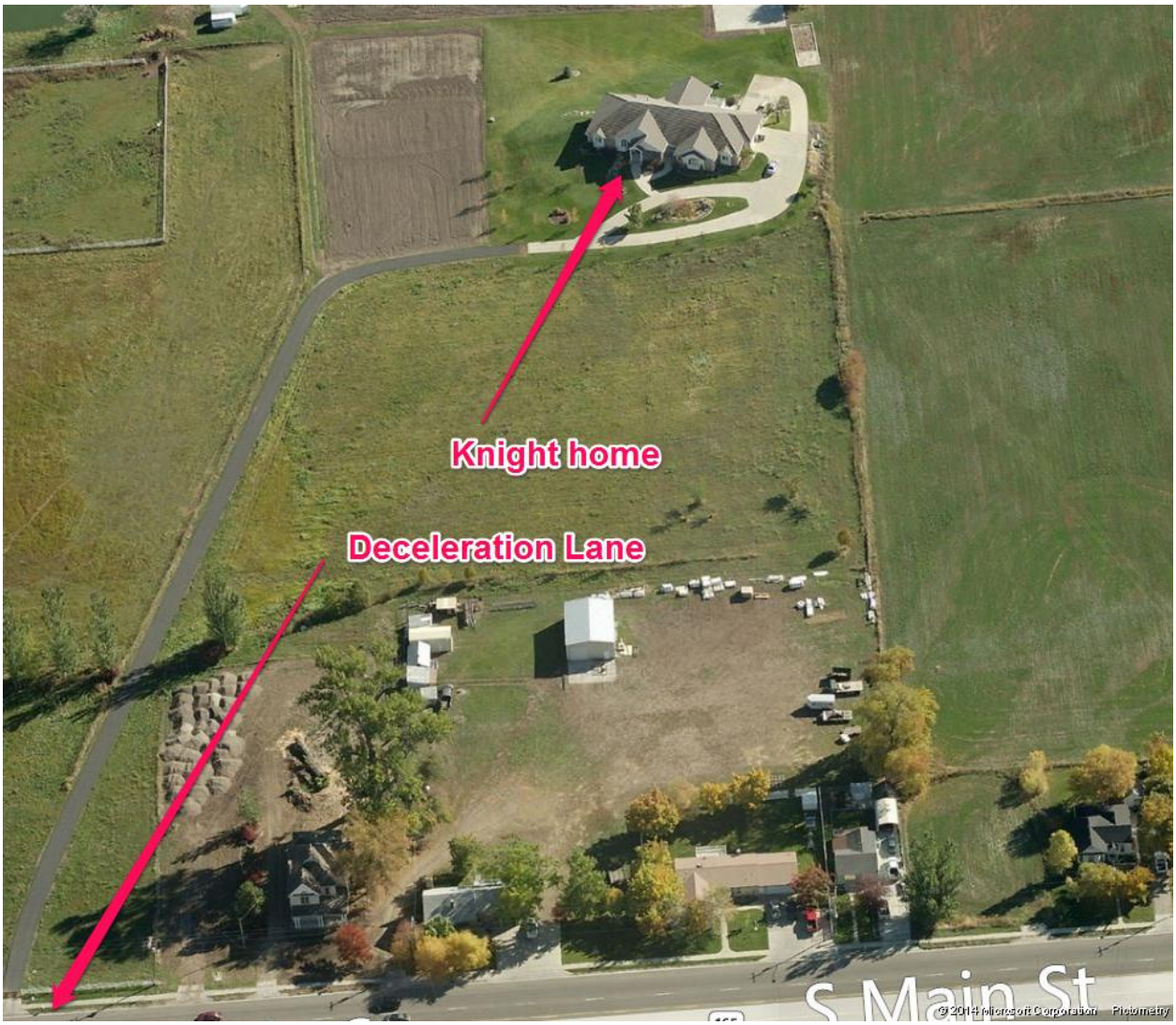


Owner's input on changes coming to their area:
Gerald completely agrees that the intersection change is necessary and the current configuration is dangerous. While serving as Mayor he studied the intersection and considered changes.

Owner's willingess to work with city:
Yes Gerald is willing to work with the city. Gerald discourages the use of right in right out for the Mill road.

Specific concerns with property and lot regarding new streets and commercial area:
Most of the property is is in green belt. Current access to the property is difficult and the Owner would like acces to the property and lot to be considered during design. Gerald would like to be informed of decisions and involved in the process.

Pictures and images:



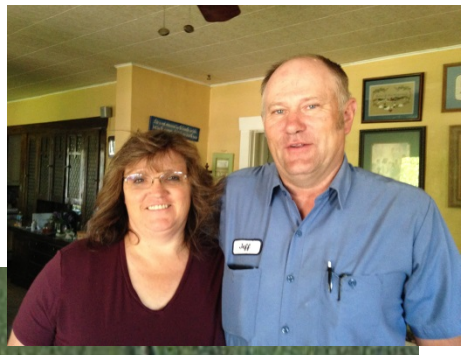
civilsolutionsgroup inc.

Leaders in sustainable engineering and planning

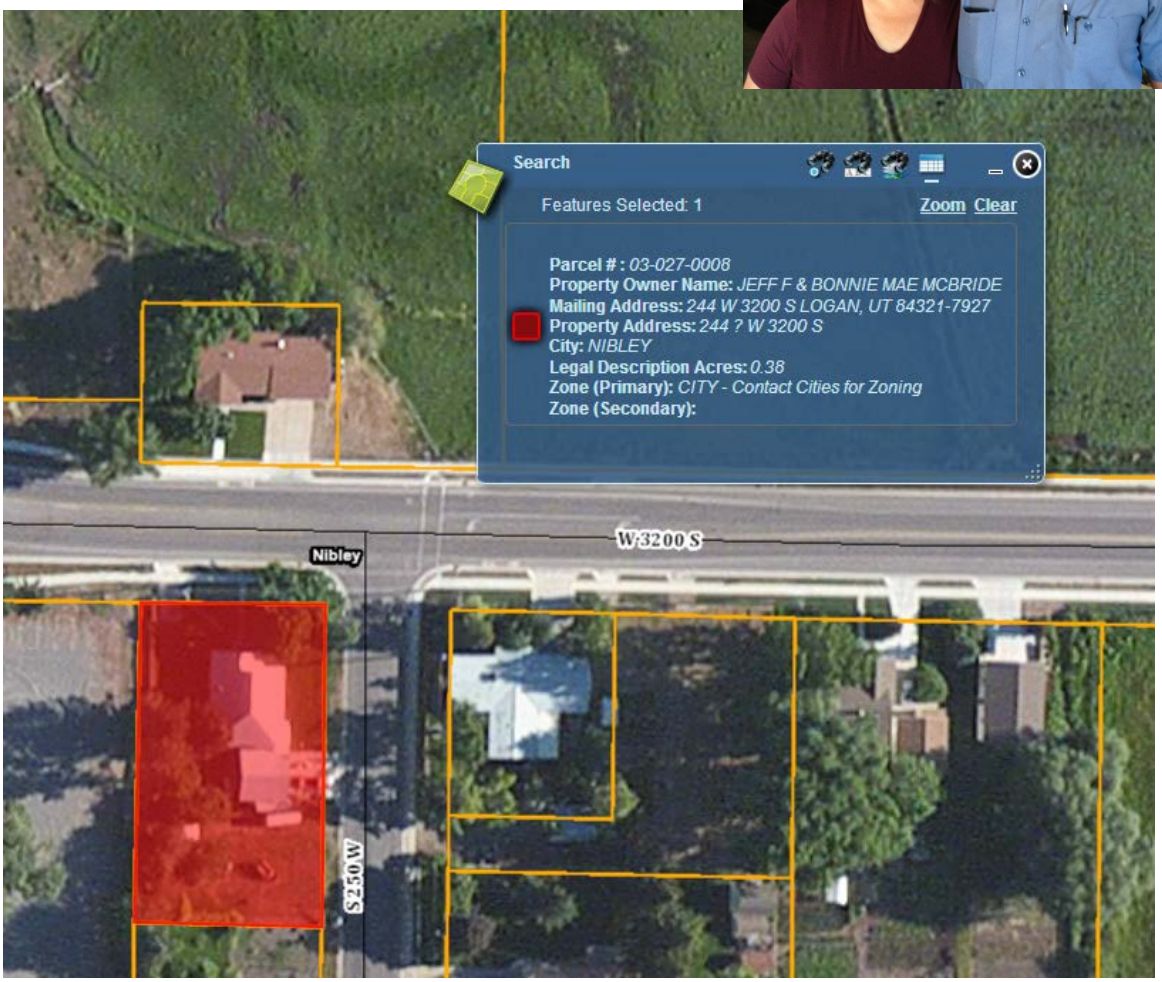
civilsolutionsgroup inc.

Leaders in sustainable engineering and planning

Property Owners: Jeff and Bonnie McBride
Affected Address: 244 W 3200 S, Nibley UT
Owner Address: same as above
Owner phone number: (435) 760-4478

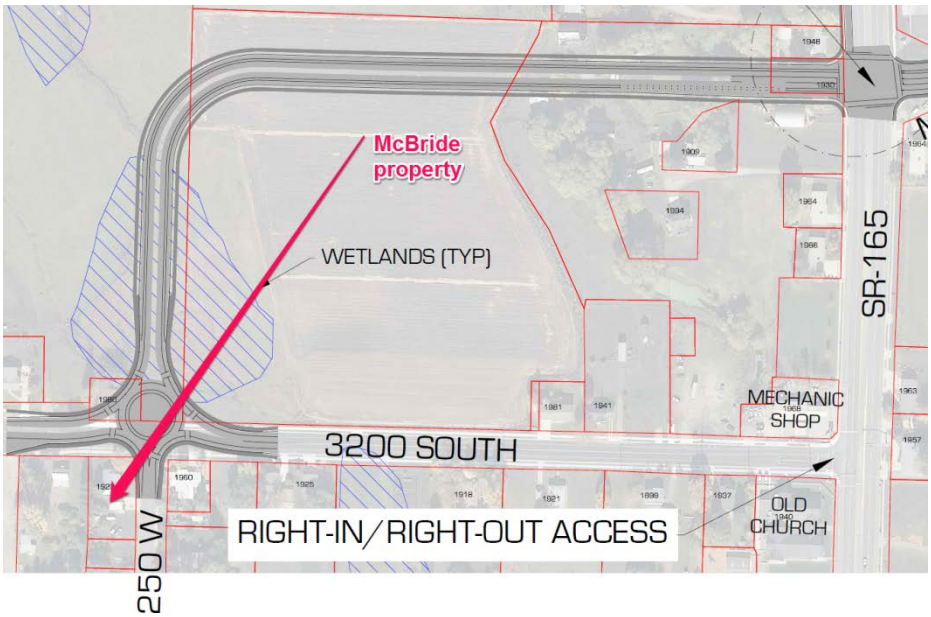


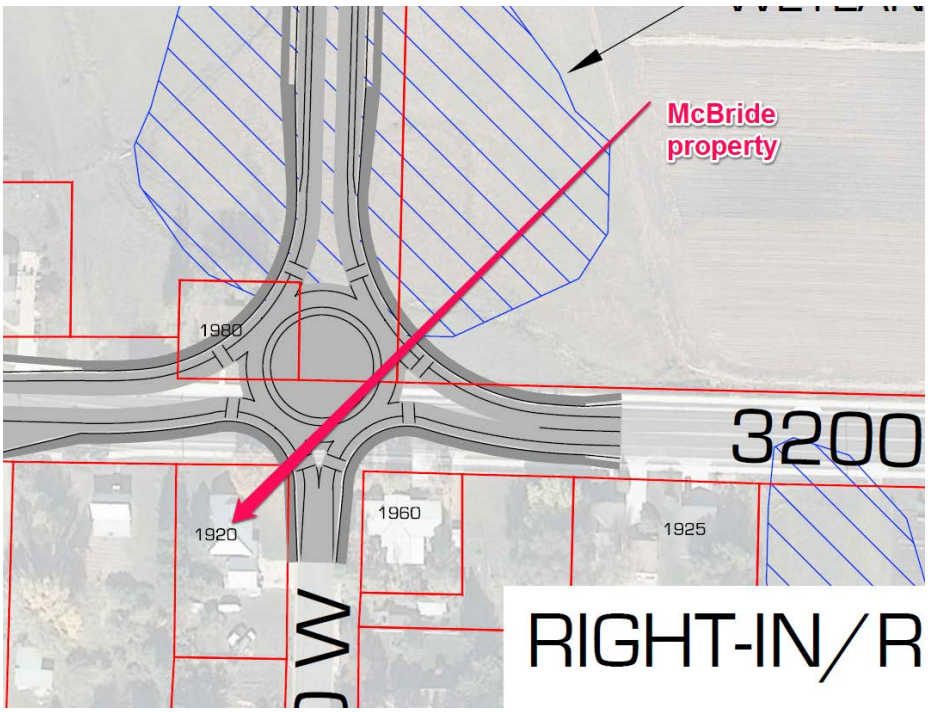
Size of lot: 0.38 Acres



Which concepts would affect their property and how:

Concept 1 (west round about) affects the Owners. If the round about were built as shown it would end up in front of their home in the 250 West/3200 South intersection. The current concept shows that minimal change would happen next to the lot, except sidewalk would be farther north and an increase in landscaping as buffer could happen.





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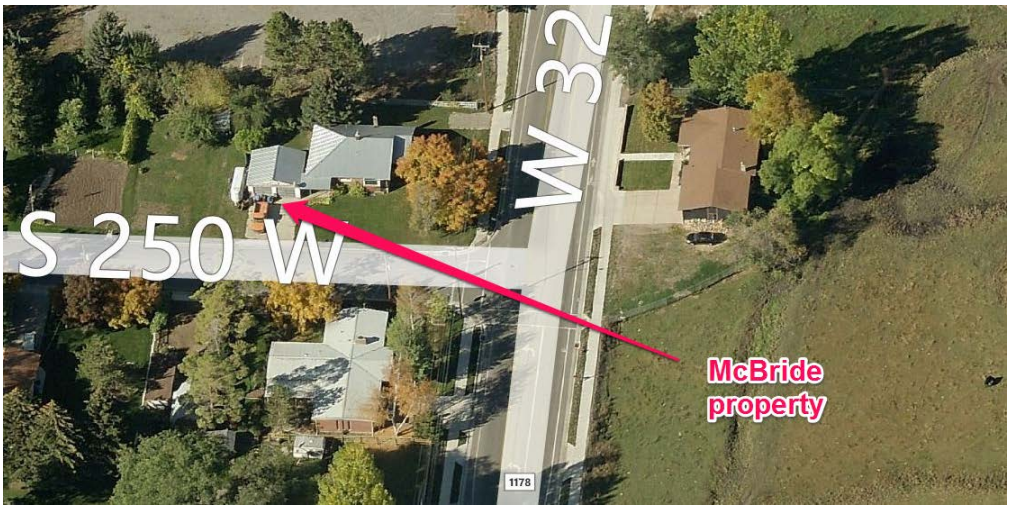
Owner's input on changes coming to their area:
McBrides have lived in their home since 1980's and have seen a lot of change during the decades. They understand that the intersection is dangerous and needs to change.

Owner's willingess to work with city:
The McBrides expect to be informed and part of the process if it directly involves the area around their home.

Specific concerns with property and lot regarding new streets and commercial area:
The driveway access is via 250 West and this would still work. Owner would like street parking but this is not possible.

Pictures and images:



McBride home

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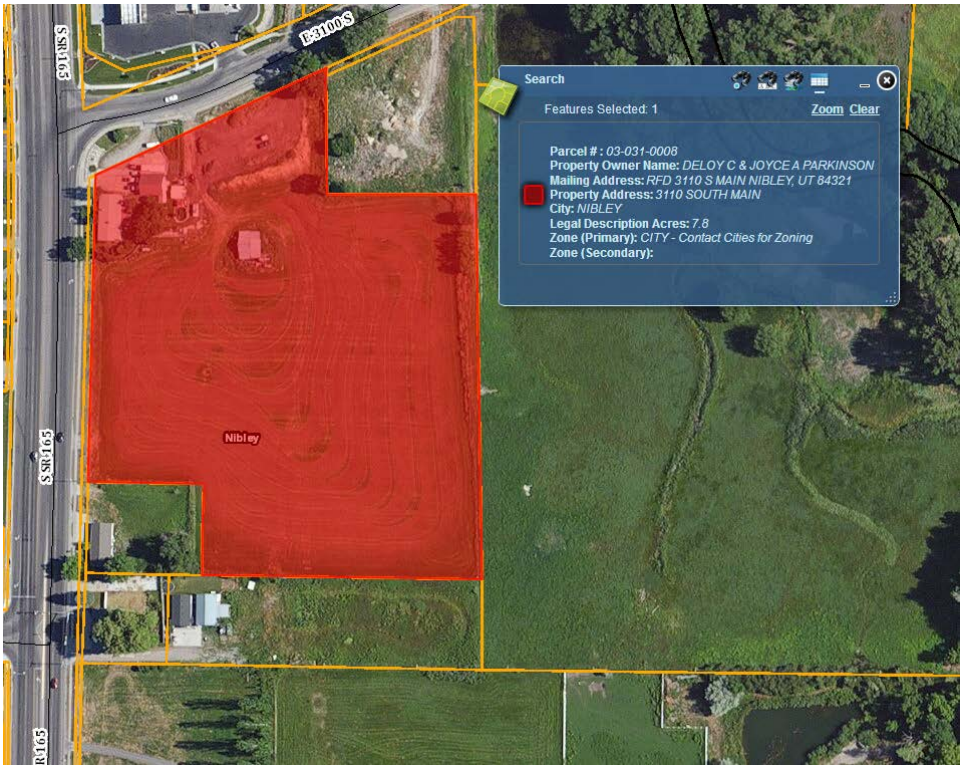
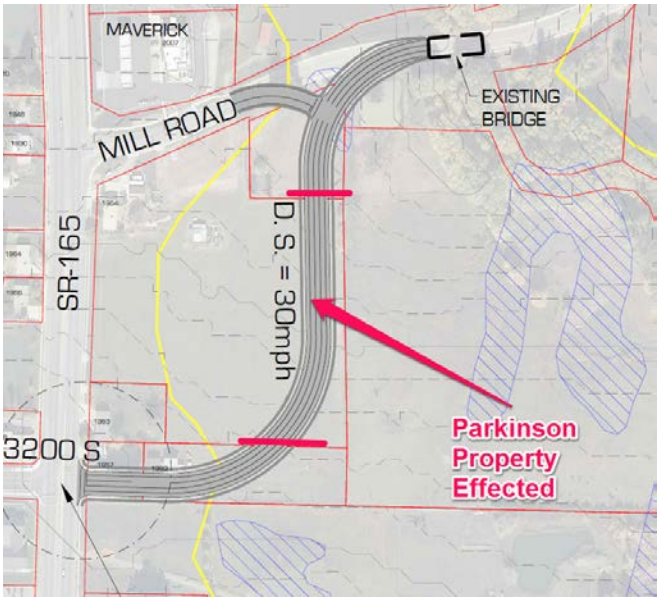
Property Owners: Deloy & Joyce Parkinson
Affected Address: 3110 S Main Street, Nibley UT
Owner Address: same as above
Owner phone number: 435-752-8602

Size of lot: 7.8 Acres



Which concepts would affect their property and how:
Concept 3 (east side) affects the Owner. The proposed concept would go on the east side of the property. The proposed concept would not require any structures to be removed. The new street would decrease the quantity of land to be farmed.



Owner's input on changes coming to their area:
Owner agrees that the High T intersection is dangerous. They see lots of accidents and believe the new High School will bring additional traffic. Deloy has noticed that semi trucks have a difficult time turning. Deloy said a cross walk is necessary. He said events like Top of Utah Marathon make it difficult to get in and out of his house.

Owner's willingess to work with city:
Yes they are willing to discuss it with the city, but do not particularly want to sell. Deloy requested that the street be as far east as possible on the property. He does not want to loose the property; however Deloy is interested in selling the whole piece for a large commercial project. During the Public Hearing Joyce made a strong voice of opposition to the street coming through their land.

Specific concerns with property and lot regarding new streets and commercial area:
Sewer lines and manholes would need to be addressed. There are also 5 drain lines in the property. The area does have water issues, but drains have helped. Concept 3 has been revised to move the street eastward on the lot and provide access to Maverik/Mill road. Concept 3 as shown would create additional drainage issues and require specific solutions.

Pictures and images:

Backyard and lot looking east.

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Property Owners: Ropelato Properties LC
Affected Address: Nibley UT
Owner Address: PO Box 272 Millville UT 84326-0272
Owner phone number: 435-770-5714

Size of lots: 43.03 Acres

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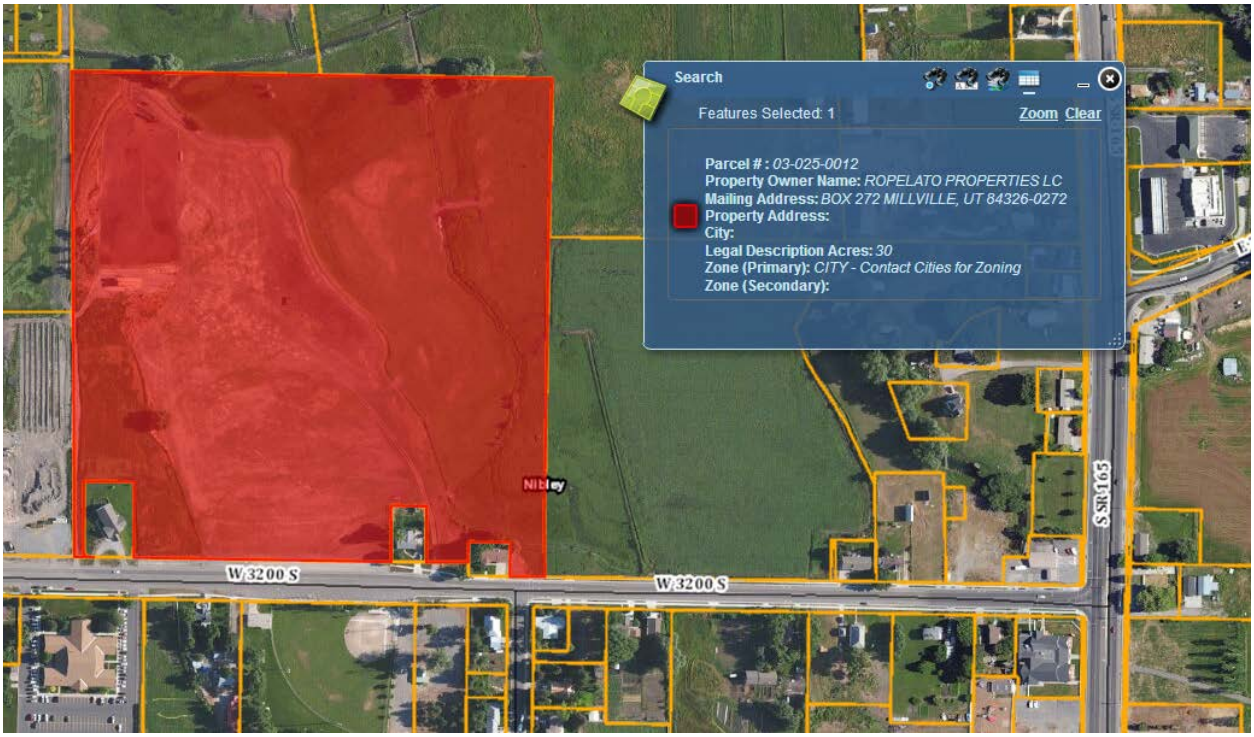

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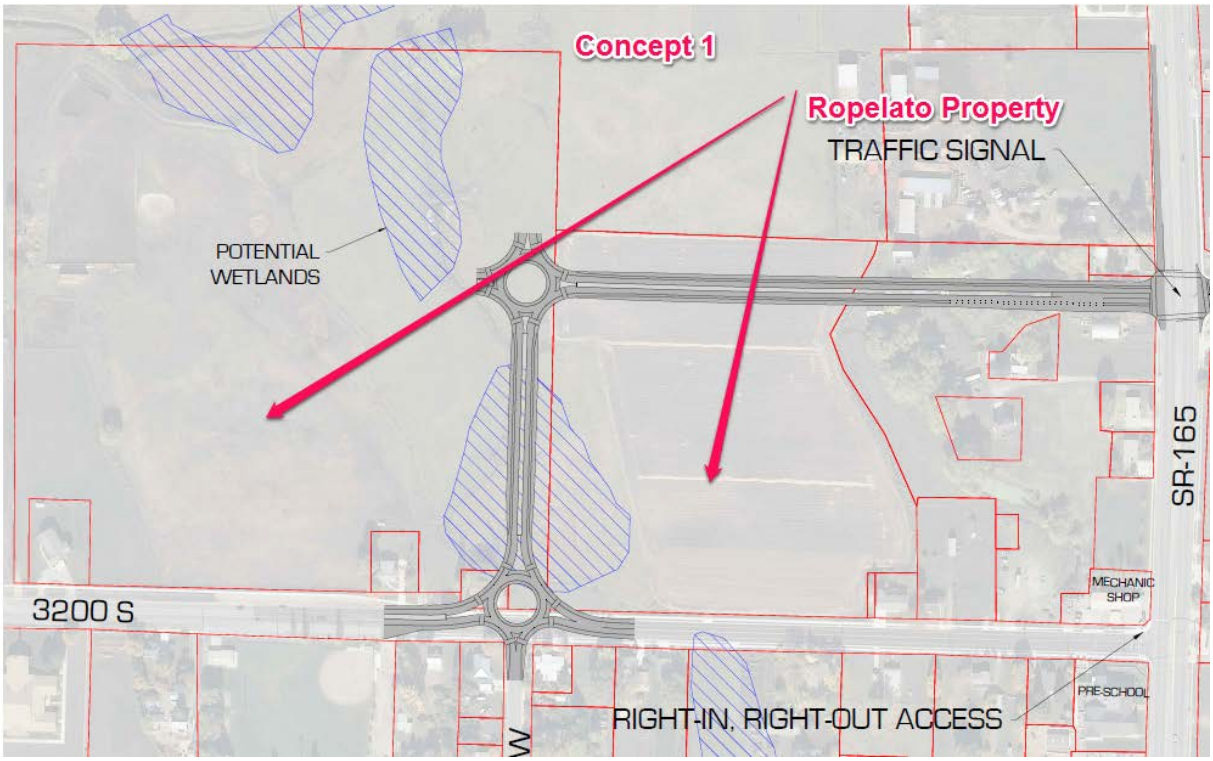
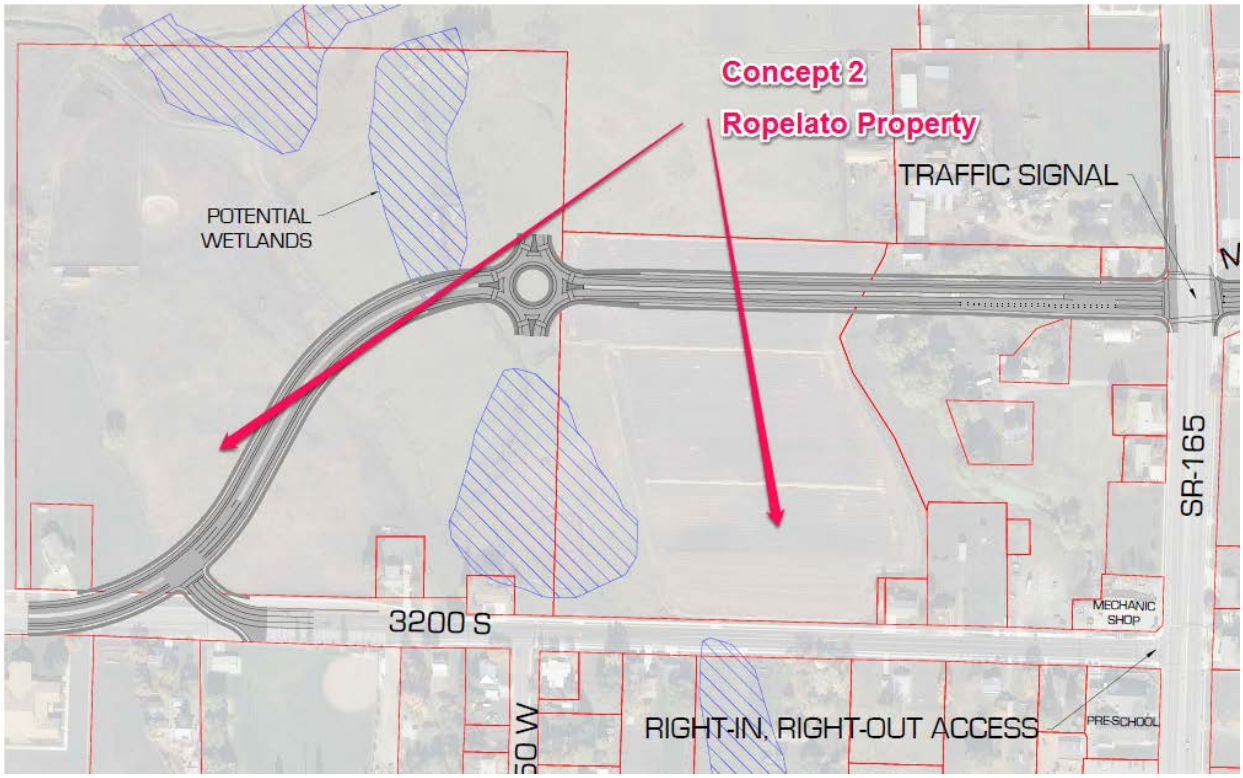
Which concepts would affect their property and how:

Conceptd 1 ot 2 (west side) directly affects the Owners. Botht the west S curve and west round about (1 and 2) concepts would pass over their property. The property is being is being farmed and has a dairy. The new street would interupt farming and dairy practices according to the Owner.





Owner's input on changes coming to their area:
Agrees the intersection is dangerous and would like to see a change.

Owner's willingess to work with city:
Willing to work with the city but, wants to sell the whole property at once. This would require the city rezone it to commercial so that the land owners may work with developers.

Specific concerns with property and lot regarding new streets and commercial area:
The property has springs and high water table. The property also has a large gravel pit on the West end. This part of th property does not have structures affection by the street design concepts.

Pictures and images:

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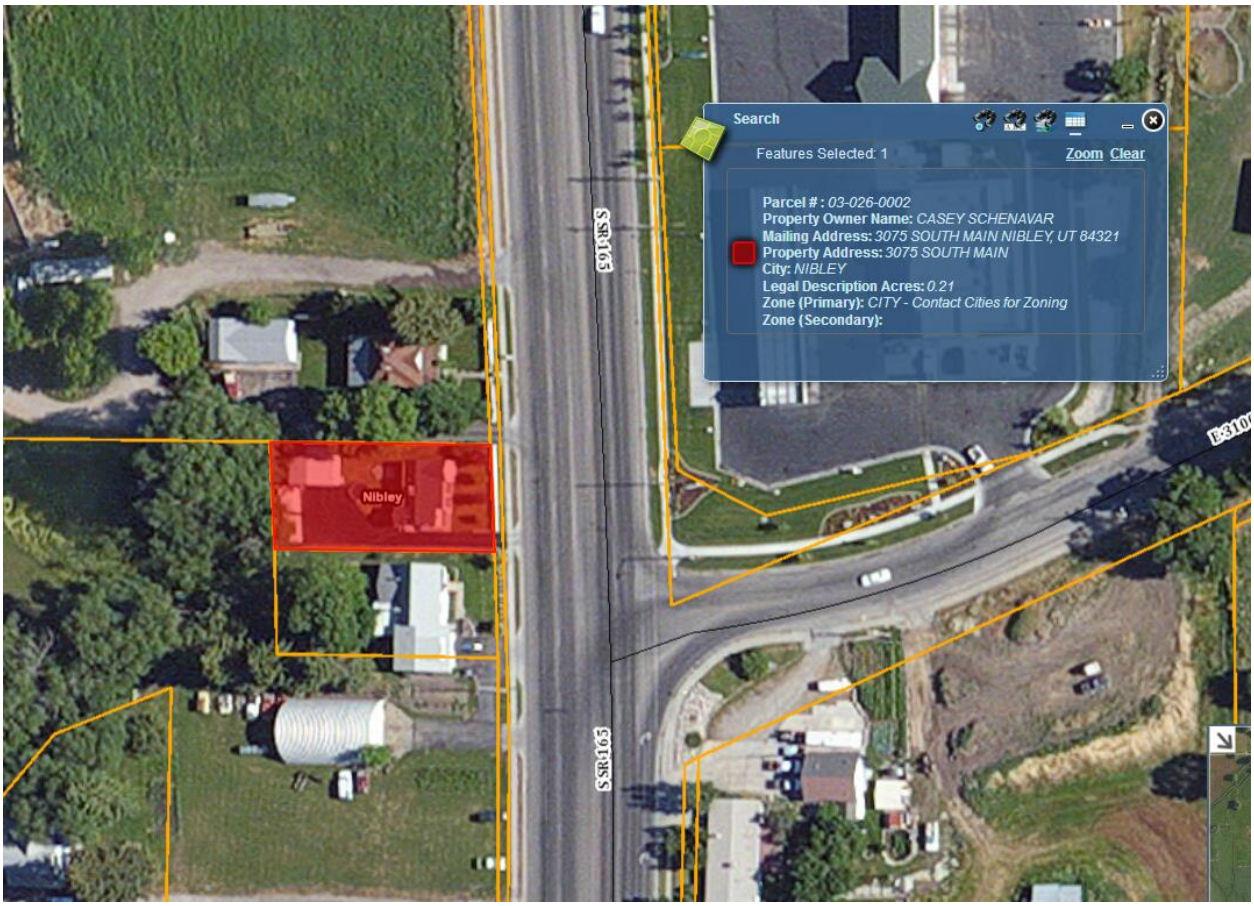
Property Owners: Casey Schenavar
Address: 3075 South Main, Nibley UT 84321
Owner phone number: 435-881-4399

Size of lot: 0.21 Acres



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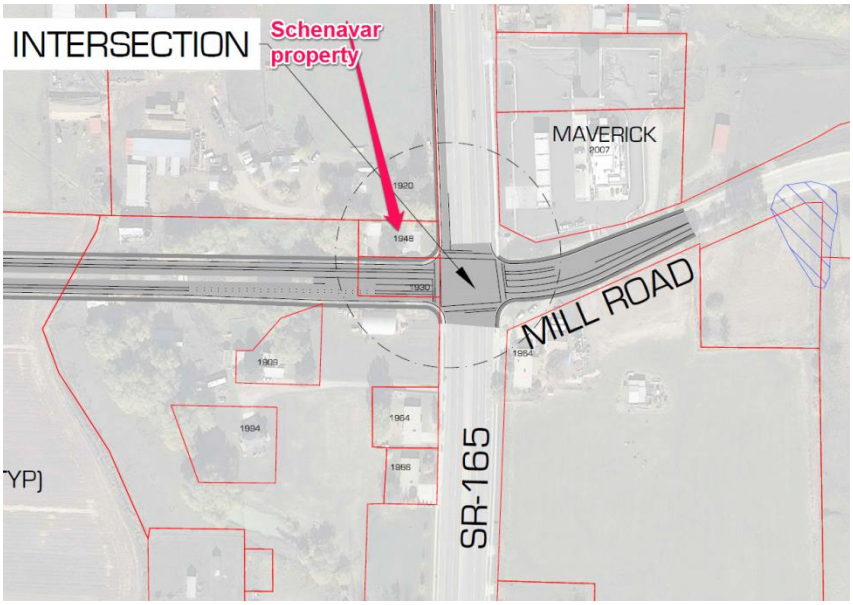
Which concepts would affect their property and how:
Concepts 1 or 2 (West) would run parralel to property. New intersection may require property corner for traffic signal pole. Also property access would be affected by new street.

Owner's input on changes coming to their area:
Casey said it is difficult to enter and exit the property from 165. He knows that accidents happen periodically and mentioned a recent one.

Owner's willingess to work with city:
Yes he is willing to talk with the city.

Specific concerns with property and lot regarding new streets and commercial area:
CSG discussed with Casey the potential change of the area becoming a town center and commercial businesses. He did not mention a major concern with this change. His shed is close to property line. Garage would be accessed from new street.

Pictures and images:



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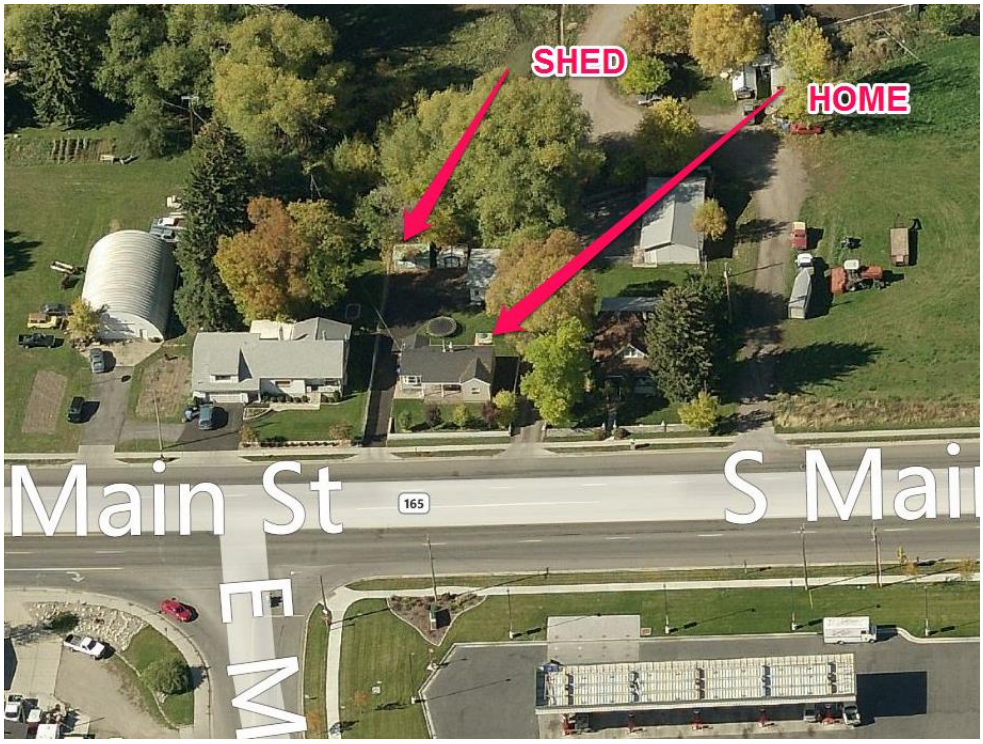

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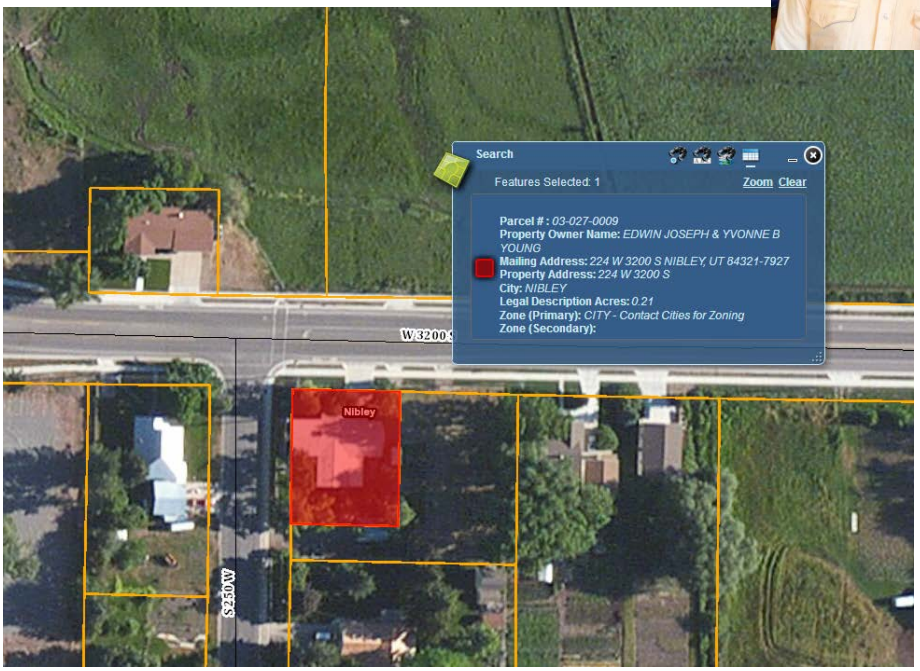
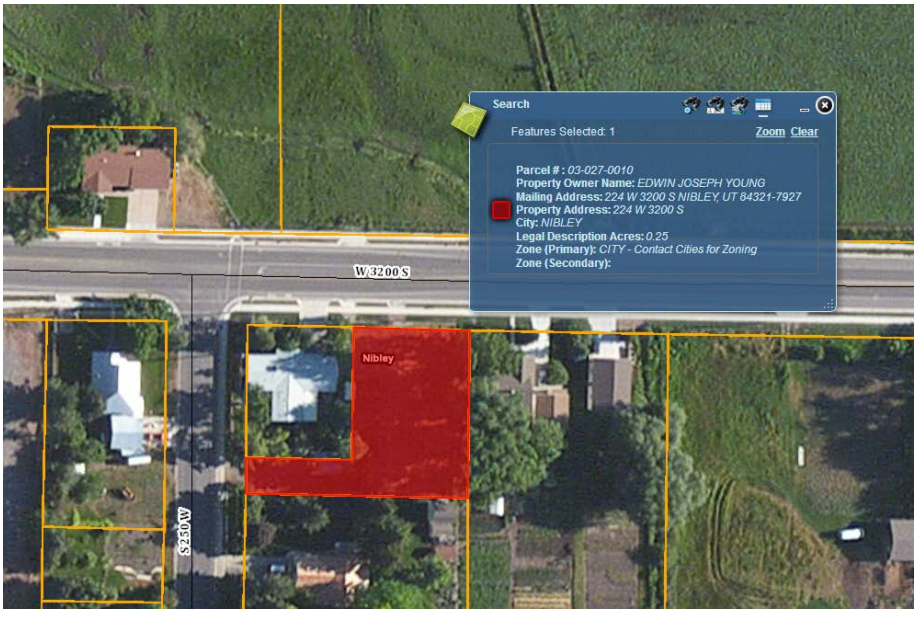
Property Owners: Joe & Yvonne Young
Affected Address: 224 W 3200 S, Nibley UT
Owner Address: same as above
Owner phone number: (435) 752-7918

Size of lot: 0.21 + 0.25 = 0.46 Acres





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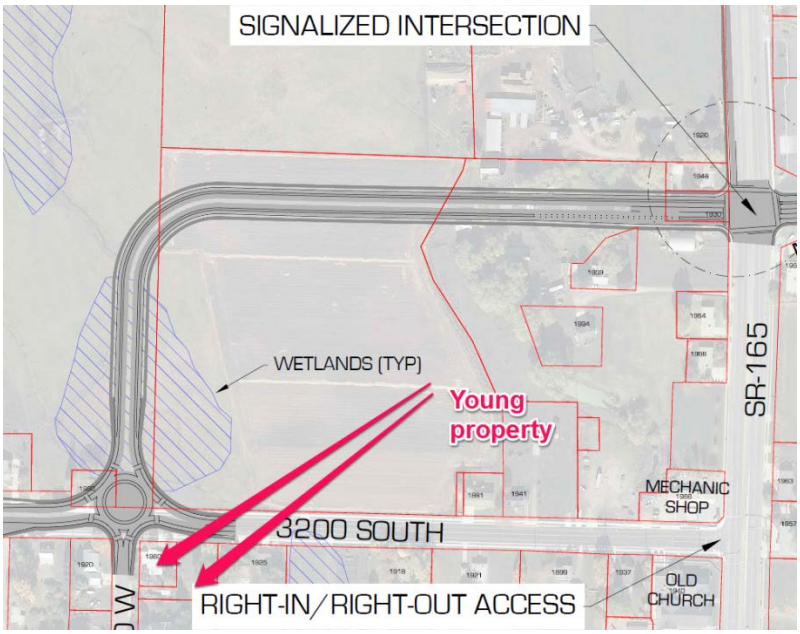
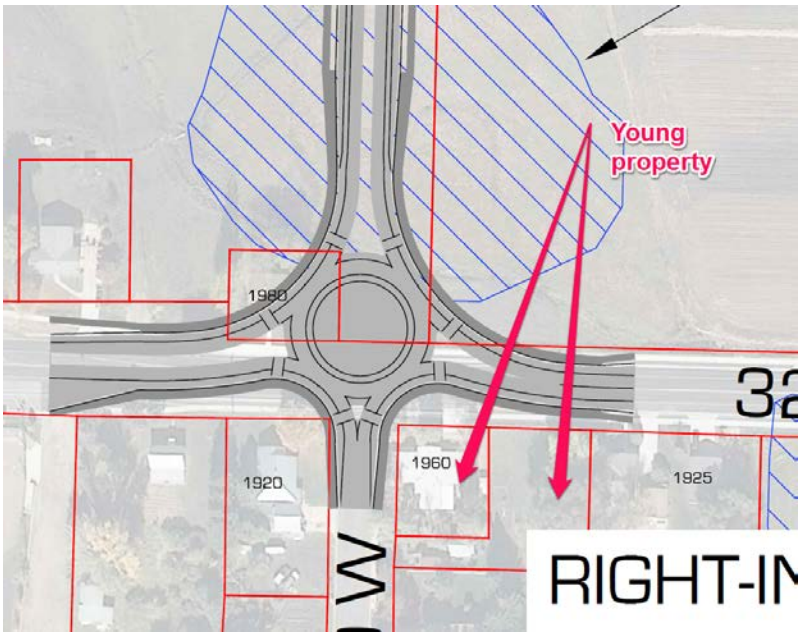
Which concepts would affect their property and how:

Concept 3 (west side round about) affects the Owner. If the round about were built as shown it would end up in front of their home in the 250 West/3200 South intersection. The current concept shows that minimal change would happen next to the lot, except sidewalk would be farther north and an increase in landscaping as buffer could happen. Driveway access would need to move east.





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Owner's input on changes coming to their area:
Young's would like not to see houses or development across their street, but understand Nibley is growing. They have lived in the home since 1960. They have personal history with highway 165 beig dangerous. In 1964 their first grade son died while crossing highway 165 (by current Maverik) on his way home from Millville elementary.

Owner's willingess to work with city:
They are not in favor of the round about or significant changes; however they understand the city needs to make some hard decicions.

Specific concerns with property and lot regarding new streets and commercial area:
The driveway access is via 3200 South. The new potential round about and street configuration would require specific design to accomdate driveway access or driveway access would come from the east part of side lot.

Pictures and images:

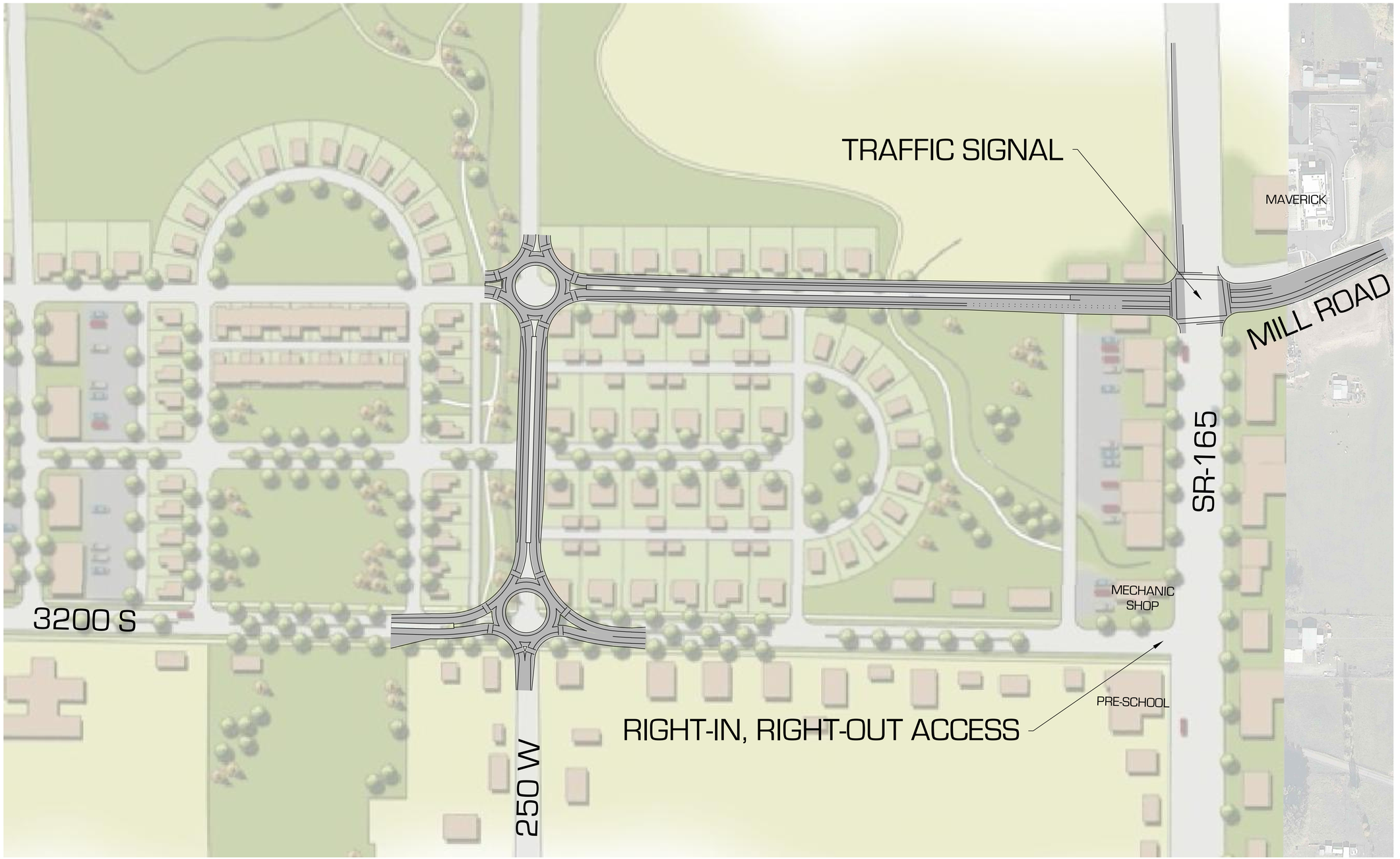
Photo of Young home looking southeast.

APPENDIX G: Town Center Concept Compatibility

SR-165 @ 3200 S & MILL RD
OPTION 1
SCALE: 1"=100'

N

0 100' 200'



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SR-165 @ 3200 S & MILL RD
PRELIMINARY CONCEPTS
NIBLEY, UTAH

MARK:	DATE:	DESCRIPTION:

PROJECT #: 505-1401
DRAWN BY: M. TAYLOR
REVIEWED BY: D. MACFARLANE
ISSUED: 08.24.2014

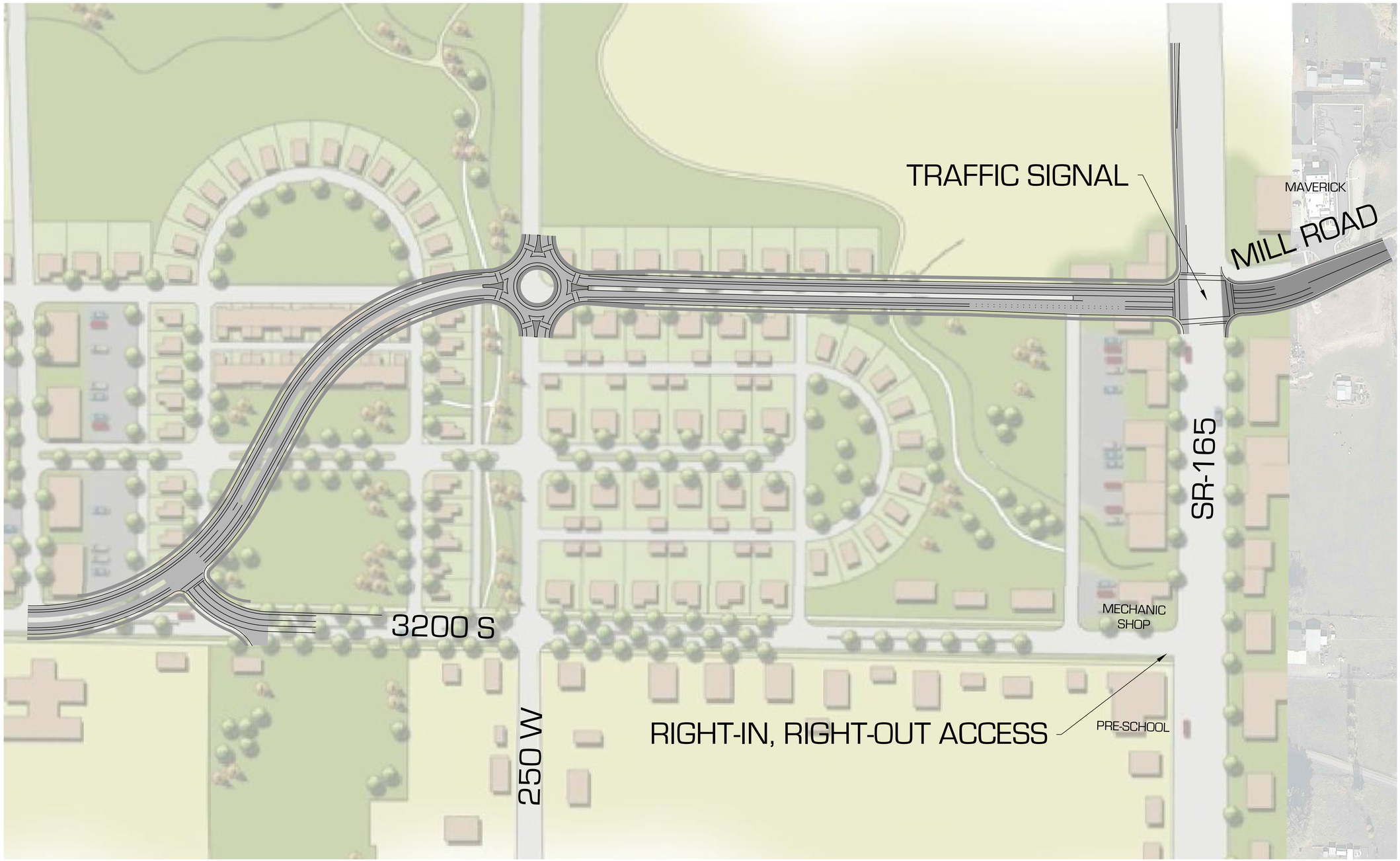
OPTION 1

C-101

SR-165 @ 3200 S & MILL RD
OPTION 2
SCALE: 1"=100'

N

0 100' 200'



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SR-165 @ 3200 S & MILL RD
PRELIMINARY CONCEPTS
NIBLEY, UTAH

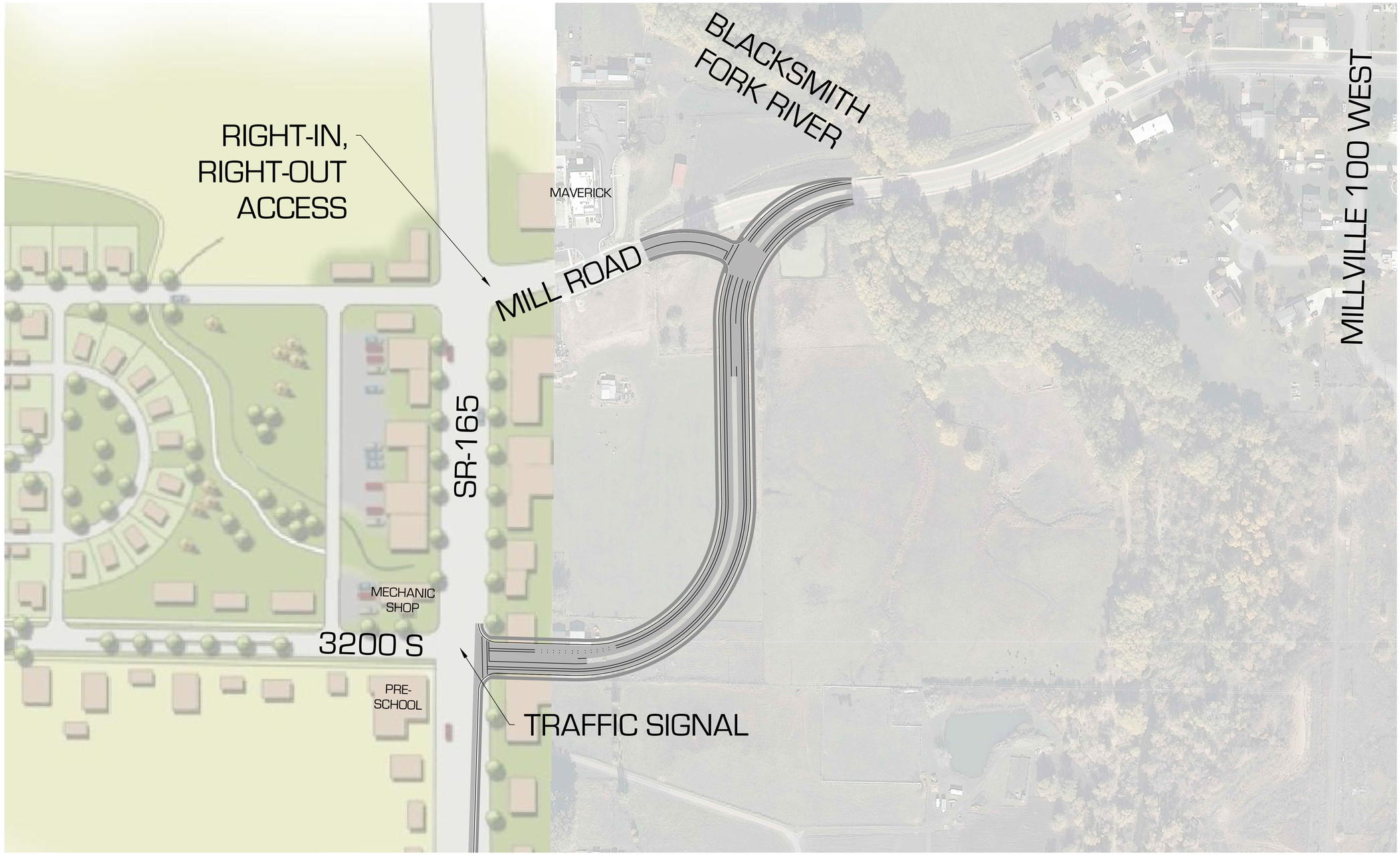
MARK	DATE	DESCRIPTION

PROJECT #:	505-1401
DRAWN BY:	M. TAYLOR
REVIEWED BY:	D. MACFARLANE
ISSUED:	08.24.2014

OPTION 2

C-102

SR-165 @ 3200 S & MILL RD
OPTION 3
SCALE: 1"=100'



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SR-165 @ 3200 S & MILL RD
PRELIMINARY CONCEPTS
NIBLEY, UTAH

MARK	DATE	DESCRIPTION

PROJECT #:	505-1401
DRAWN BY:	M. TAYLOR
REVIEWED BY:	D. MACFARLANE
ISSUED:	08.24.2014

OPTION 3

C-103

APPENDIX H: Economic Development Potential

SR-165 @ 3200 S & MILL RD.
NIBLEY UTAH
CONCEPT 1 - 9-3-2014

SYMBOL	NOTES	QTY	
	PK - PARKING	477,315 sf	10.96 acres
	CM - COMMERCIAL MEDIUM BOX	237,269 sf	5.45 acres
	CS - COMMERCIAL SMALL	158,408 sf	3.64 acres
	RH - RESIDENTIAL HOUSING	45,509 sf	1.04 acres
	HW 165 - HIGHWAY 165	227,632 sf	5.23 acres
	TS - TOWN SQUARE	106,660 sf	2.45 acres
	R.O.W.	223,306 sf	5.13 acres
	LANDSCAPED AREA	452,900 sf	10.40 acres

N

0 300 600 900 1200 feet

1" = 300'

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SR-165 @ 3200 S & MILL RD.
NIBLEY UTAH
CONCEPT 2 - 9-3-2014

SYMBOL	NOTES	QTY	COST	TOTAL
	PK - PARKING	591,419 sf	13.58 acres	
	CM - COMMERCIAL MEDIUM BOX	237,269 sf	5.45 acres	
	CS - COMMERCIAL SMALL	157,604 sf	3.62 acres	
	RH - RESIDENTIAL HOUSING	80,984 sf	1.86 acres	
	HW 165 - HIGHWAY 165	227,632 sf	5.23 acres	
	TS - TOWN SQUARE	278,728 sf	6.40 acres	
	R.O.W.	304,814 sf	7.00 acres	
	LANDSCAPED AREA	538,816 sf	12.37 acres	

N

0 300 600 900 1200 feet

1" = 300

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SR-165 @ 3200 S & MILL RD.
NIBLEY UTAH
CONCEPT 3 - 9-3-2014

SYMBOL	NOTES	QTY	
	PK - PARKING	133,029 sf	3.05 acres
	CM - COMMERCIAL MEDIUM BOX	93,600 sf	2.15 acres
	CS - COMMERCIAL SMALL	14,000 sf	0.32 acres
	HW 165 - HIGHWAY 165	227,632 sf	5.23 acres
	LANDSCAPED AREA	140,336 sf	3.22 acres
	SWP - STORM WATER POND	20,313 sf	0.47 acres

N

0 300 600 900 1200 feet

1" = 300'

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APPENDIX I: Cost Estimates

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 1
Cost Estimate - Concept Level

Prepared By: Michael Taylor **Date** 10/13/2014

Proposed Project Scope: **Construction of new road from intersection of 250 West and 3200 South to intersection of SR-165 and Mill Road**

Approximate Route Reference Mile Post (BEGIN) =	7.760	(END) =	7.900
Project Length =	0.606	miles	
Current FY Year (July-June) =	2014		
Assumed Construction FY Year =	2017		
Construction Items Inflation Factor =	1.17	3 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	2.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	0.0%		
Construction Engineering (% of Construction + Incentives) =	6.0%		

Construction Items		**Cost**	**Remarks**
Pulic Information Services		$0	
Roadway and Drainage		$1,604,558	
Traffic and Safety		$75,000	
Structures		$0	
Environmental Mitigation		$176,406	
ITS		$0	
	Subtotal	$1,855,964	
	Items not Estimated (20%)	$371,193	
	Construction Subtotal	**$2,227,157**	
P.E. Cost	**P.E. Subtotal**	**$0**	0%
C.E. Cost	**C.E. Subtotal**	**$133,629**	6%
Right of Way	**Right of Way Subtotal**	$535,226	
Utilities	**Utilities Subtotal**	$160,000	
Incentives	**Incentives Subtotal**	$0	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		**2014**		**2017**	
P.E.			**$0**		**$0**
Right of Way			**$535,000**		**$568,000**
Utilities			**$160,000**		**$187,000**
Construction			**$2,227,000**		**$2,603,000**
C.E.			**$134,000**		**$146,000**
Incentives			**$0**		**$0**
Aesthetics	**0.75%**		**$17,000**		**$20,000**
Change Order Contingency	**5.00%**		**$112,000**		**$131,000**
UDOT Oversight			**$0**		**$0**
Miscellaneous			**$0**		**$0**
		TOTAL	**$3,185,000**	**TOTAL**	**$3,655,000**

PROPOSED COMMISSION REQUEST	**TOTAL**	**$3,185,000**	**TOTAL**	**$3,655,000**

Inflation

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Year	Rate	Recommended Rate	Cumulative Inflation Factor
2014	5.0%	0.0%	1.00
2015	5.5%	5.5%	1.06
2016	5.5%	5.5%	1.11
2017	5.0%	5.0%	1.17
2018	4.5%	4.5%	1.22
2019	4.5%	4.5%	1.28
2020	4.5%	4.5%	1.33
2021	4.5%	4.5%	1.39
2022	4.5%	4.5%	1.46
2023	4.5%	4.5%	1.52
2024	4.5%	4.5%	1.59
2025	4.5%	4.5%	1.66
2026	4.5%	4.5%	1.74
2027	4.5%	4.5%	1.81
2028	4.5%	4.5%	1.90
2029	4.5%	4.5%	1.98
2030	4.5%	4.5%	2.07
2031	4.5%	4.5%	2.16
2032	4.5%	4.5%	2.26
2033	4.5%	4.5%	2.36
2034	4.5%	4.5%	2.47
2035	4.5%	4.5%	2.58
2036	4.5%	4.5%	2.70
2037	4.5%	4.5%	2.82
2038	4.5%	4.5%	2.95
2039	4.5%	4.5%	3.08
2040	4.5%	4.5%	3.22
2041	4.5%	4.5%	3.36
2042	4.5%	4.5%	3.51
2043	4.5%	4.5%	3.67

Projected inflation rate awaiting final approval.

Please contact UDOT Estimate Support with any questions (801-965-4708).

Roadway and Drainage

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 1

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$112,000.00	$112,000.00	Usually 7-10% of construction
015540005	Traffic Control	1	Lump	$56,000.00	$56,000.00	Usually 3-5% of construction
01557001*	Maintenance of Traffic	1	Lump	$14,000.00	$14,000.00	Usually 1% of construction
	Overexcavation	6,689	cu yd	$12.00	$80,268.00	Assumed through wet areas
020560015	Granular Borrow (Plan Quantity)	8,452	cu yd	$25.00	$211,300.00	18" assumed
022310010	Clearing and Grubbing	1	Lump	$50,000.00	$50,000.00	
027210020	Untreated Base Course (Plan Quantity)	2,348	cu yd	$30.00	$70,440.00	5" assumed
027350010	Micro-Surfacing	16,903	sq yd	$3.00	$50,710.00	
027410060	HMA - 3/4 Inch	2,348	Ton	$75.00	$176,100.00	4" assumed
027710025	Concrete Curb and Gutter Type B1	6,256	ft	$16.00	$100,096.00	
027710035	Concrete Curb and Gutter Type M1	1,548	ft	$16.00	$24,768.00	
027710017	Concrete Curb and Gutter Type B5	3,190	ft	$10.00	$31,900.00	
027710058	Pedestrian Access Ramp	36	Each	$1,500.00	$54,000.00	
	Concrete Driveway	7	Each	$2,000.00	$14,000.00	20' wide by 15' long driveway
027760010	Concrete Sidewalk	51,919	sq ft	$4.00	$207,676.00	Includes flatwork
Roadway Subtotal					**$1,253,258**	
Drainage						
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	3,564	ft	$75.00	$267,300.00	Assumes single trunk line & laterals
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	24	Each	$3,500.00	$84,000.00	Catch basins every 400', plus 4 extra at each roundabout
Drainage Subtotal					**$351,300**	

Traffic, Safety & ITS

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 1

Item #	Item	Quantity	Units	Price	Cost	Remarks
Signals						
02892001D	Traffic Signal System	1	Lump	$75,000.00	$75,000.00	
Traffic and Safety Subtotal					**$75,000**	

Environmental and Landscaping

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 1

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	0.96	acre	$50,000.00	$48,000.00	
Landscaping						
	Landscaping	42,802	sq ft	$3.00	$128,406.00	
Environmental Mitigation Subtotal					**$176,406**	

Utilities, Right of Way, and Incentives

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 1

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Water and Sewer Line	1	Lump	$160,000.00	$160,000.00	
Utilities Subtotal					**$160,000**	
Right-of-way						
	ROW Ropelato Land	138,085	sq ft	$0.50	$69,042.50	
	ROW Harris Land	86,382	sq ft	$0.50	$43,191.00	This is land owned by Harris' outside of the 0.22 acre parcel upon which the house itself rests.
	ROW McBride Land	748	sq ft	$4.00	$2,992.00	
	ROW Dan France Land & House & Relocation Package	1	Each	$210,000.00	$210,000.00	Assumes $30K for relocation package
	ROW Harris Land & House & Relocation Package	1	Each	$210,000.00	$210,000.00	Assumes $30K for relocation package
Right-of-Way Subtotal					**$535,226**	

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 2
Cost Estimate - Concept Level

Prepared By: Michael Taylor **Date** 10/13/2014

Proposed Project Scope: **Construction of new road from Nibley City Building to intersection of SR-165 and Mill Road**

Approximate Route Reference Mile Post (BEGIN) =	7.760	(END) =	7.900
Project Length =	0.606	miles	
Current FY Year (July-June) =	2014		
Assumed Construction FY Year =	2017		
Construction Items Inflation Factor =	1.17	3 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	2.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	0.0%		
Construction Engineering (% of Construction + Incentives) =	6.0%		

Construction Items		Cost	Remarks
Pulic Information Services		$0	
Roadway and Drainage		$1,746,417	
Traffic and Safety		$75,000	
Structures		$0	
Environmental Mitigation		$170,950	
ITS		$0	
	Subtotal	$1,992,367	
	Items not Estimated (20%)	$398,473	
	Construction Subtotal	**$2,390,840**	
P.E. Cost	**P.E. Subtotal**	**$0**	0%
C.E. Cost	**C.E. Subtotal**	**$143,450**	6%
Right of Way	**Right of Way Subtotal**	$344,323	
Utilities	**Utilities Subtotal**	$200,000	
Incentives	**Incentives Subtotal**	$0	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		2014		2017	
P.E.			**$0**		**$0**
Right of Way			**$344,000**		**$365,000**
Utilities			**$200,000**		**$234,000**
Construction			**$2,391,000**		**$2,794,000**
C.E.			**$143,000**		**$156,000**
Incentives			**$0**		**$0**
Aesthetics	**0.75%**		**$18,000**		**$21,000**
Change Order Contingency	**5.00%**		**$120,000**		**$140,000**
UDOT Oversight			**$0**		**$0**
Miscellaneous			**$0**		**$0**
		TOTAL	**$3,216,000**	**TOTAL**	**$3,710,000**

PROPOSED COMMISSION REQUEST	**TOTAL**	**$3,216,000**	**TOTAL**	**$3,710,000**

Inflation

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Year	Rate	Recommended Rate	Cumulative Inflation Factor
2014	5.0%	0.0%	1.00
2015	5.5%	5.5%	1.06
2016	5.5%	5.5%	1.11
2017	5.0%	5.0%	1.17
2018	4.5%	4.5%	1.22
2019	4.5%	4.5%	1.28
2020	4.5%	4.5%	1.33
2021	4.5%	4.5%	1.39
2022	4.5%	4.5%	1.46
2023	4.5%	4.5%	1.52
2024	4.5%	4.5%	1.59
2025	4.5%	4.5%	1.66
2026	4.5%	4.5%	1.74
2027	4.5%	4.5%	1.81
2028	4.5%	4.5%	1.90
2029	4.5%	4.5%	1.98
2030	4.5%	4.5%	2.07
2031	4.5%	4.5%	2.16
2032	4.5%	4.5%	2.26
2033	4.5%	4.5%	2.36
2034	4.5%	4.5%	2.47
2035	4.5%	4.5%	2.58
2036	4.5%	4.5%	2.70
2037	4.5%	4.5%	2.82
2038	4.5%	4.5%	2.95
2039	4.5%	4.5%	3.08
2040	4.5%	4.5%	3.22
2041	4.5%	4.5%	3.36
2042	4.5%	4.5%	3.51
2043	4.5%	4.5%	3.67

Projected inflation rate awaiting final approval.

Please contact UDOT Estimate Support with any questions (801-965-4708).

Roadway and Drainage

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 2

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$128,000.00	$128,000.00	Usually 7-10% of construction
015540005	Traffic Control	1	Lump	$64,000.00	$64,000.00	Usually 3-5% of construction
01557001*	Maintenance of Traffic	1	Lump	$16,000.00	$16,000.00	Usually 1% of construction
	Overexcavation	5,415	cu yd	$12.00	$64,980.00	Assumed through wet areas
020560015	Granular Borrow (Plan Quantity)	9,417	cu yd	$25.00	$235,425.00	18" assumed
022310010	Clearing and Grubbing	1	Lump	$50,000.00	$50,000.00	
027210020	Untreated Base Course (Plan Quantity)	2,616	cu yd	$30.00	$78,480.00	5" assumed
027350010	Micro-Surfacing	18,834	sq yd	$3.00	$56,503.33	
027410060	HMA - 3/4 Inch	4,125	Ton	$75.00	$309,375.00	4" assumed
027710025	Concrete Curb and Gutter Type B1	7,400	ft	$16.00	$118,400.00	
027710035	Concrete Curb and Gutter Type M1	701	ft	$16.00	$11,216.00	
027710017	Concrete Curb and Gutter Type B5	4,153	ft	$10.00	$41,530.00	
027710058	Pedestrian Access Ramp	22	Each	$1,500.00	$33,000.00	
	Concrete Driveway	7	Each	$2,000.00	$14,000.00	20' wide by 15' long driveway
027760010	Concrete Sidewalk	47,052	sq ft	$4.00	$188,208.00	Includes flatwork
Roadway Subtotal					**$1,409,117**	
Drainage						
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	3,564	ft	$75.00	$267,300.00	Assumes single trunk line & laterals
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	20	Each	$3,500.00	$70,000.00	Catch basins every 400' plus 4 extra at the roundabout
Drainage Subtotal					**$337,300**	

Traffic, Safety & ITS

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 2

Item #	Item	Quantity	Units	Price	Cost	Remarks
Signals						
02892001D	Traffic Signal System	1	Lump	$75,000.00	$75,000.00	
Traffic and Safety Subtotal					**$75,000**	

Environmental and Landscaping

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 2

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	0.08	acre	$50,000.00	$4,000.00	
Landscaping						
	Landscaping	55,650	sq ft	$3.00	$166,950.00	
Environmental Mitigation Subtotal					**$170,950**	

Utilities, Right of Way, and Incentives

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 2

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Water and Sewer Line	1	Lump	$200,000.00	$200,000.00	
Utilities Subtotal					**$200,000**	
Right-of-way						
	ROW Ropelato Land	182,263	sq ft	$0.50	$91,131.50	
	ROW Harris Land	86,382	sq ft	$0.50	$43,191.00	This is land owned by Harris' outside of the 0.22 acre parcel upon which the house itself rests.
	ROW Harris Land & House & Relocation Package	1	Each	$210,000.00	$210,000.00	Assumes $30K for relocation package
Right-of-Way Subtotal					**$344,323**	

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3
Cost Estimate - Concept Level

Prepared By: Michael Taylor **Date** 10/13/2014

Proposed Project Scope: **Construction of new road from intersection of SR-165 and 3200 South to Mill Road at Blacksmithfork River Bridge**

Approximate Route Reference Mile Post (BEGIN) =	7.760	(END) =	7.900
Project Length =	0.383	miles	
Current FY Year (July-June) =	2014		
Assumed Construction FY Year =	2017		
Construction Items Inflation Factor =	1.17	3 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.0%		
Assumed Yearly Inflation for Right of Way (%/yr) =	2.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	0.0%		
Construction Engineering (% of Construction + Incentives) =	6.0%		

Construction Items		**Cost**	**Remarks**
Pulic Information Services		$0	
Roadway and Drainage		$899,564	
Traffic and Safety		$75,000	
Structures		$0	
Environmental Mitigation		$100,026	
ITS		$0	
	Subtotal	$1,074,590	
	Items not Estimated (20%)	$214,918	
	Construction Subtotal	**$1,289,508**	
P.E. Cost	**P.E. Subtotal**	**$0**	0%
C.E. Cost	**C.E. Subtotal**	**$77,370**	6%
Right of Way	**Right of Way Subtotal**	$452,425	
Utilities	**Utilities Subtotal**	$125,000	
Incentives	**Incentives Subtotal**	$0	
Miscellaneous	**Miscellaneous Subtotal**	**$0**	

Cost Estimate (ePM screen 505)		**2014**		**2017**	
P.E.			**$0**		**$0**
Right of Way			**$452,000**		**$480,000**
Utilities			**$125,000**		**$146,000**
Construction			**$1,290,000**		**$1,508,000**
C.E.			**$77,000**		**$84,000**
Incentives			**$0**		**$0**
Aesthetics	**0.75%**		**$10,000**		**$12,000**
Change Order Contingency	**5.00%**		**$65,000**		**$76,000**
UDOT Oversight			**$0**		**$0**
Miscellaneous			**$0**		**$0**
		TOTAL	**$2,019,000**	**TOTAL**	**$2,306,000**

PROPOSED COMMISSION REQUEST	**TOTAL**	**$2,019,000**	**TOTAL**	**$2,306,000**

Inflation

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Year	Rate	Recommended Rate	Cumulative Inflation Factor
2014	5.0%	0.0%	1.00
2015	5.5%	5.5%	1.06
2016	5.5%	5.5%	1.11
2017	5.0%	5.0%	1.17
2018	4.5%	4.5%	1.22
2019	4.5%	4.5%	1.28
2020	4.5%	4.5%	1.33
2021	4.5%	4.5%	1.39
2022	4.5%	4.5%	1.46
2023	4.5%	4.5%	1.52
2024	4.5%	4.5%	1.59
2025	4.5%	4.5%	1.66
2026	4.5%	4.5%	1.74
2027	4.5%	4.5%	1.81
2028	4.5%	4.5%	1.90
2029	4.5%	4.5%	1.98
2030	4.5%	4.5%	2.07
2031	4.5%	4.5%	2.16
2032	4.5%	4.5%	2.26
2033	4.5%	4.5%	2.36
2034	4.5%	4.5%	2.47
2035	4.5%	4.5%	2.58
2036	4.5%	4.5%	2.70
2037	4.5%	4.5%	2.82
2038	4.5%	4.5%	2.95
2039	4.5%	4.5%	3.08
2040	4.5%	4.5%	3.22
2041	4.5%	4.5%	3.36
2042	4.5%	4.5%	3.51
2043	4.5%	4.5%	3.67

Projected inflation rate awaiting final approval.

Please contact UDOT Estimate Support with any questions (801-965-4708).

Roadway and Drainage

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Roadway						
012850010	Mobilization	1	Lump	$64,000.00	$64,000.00	Usually 7-10% of construction
015540005	Traffic Control	1	Lump	$32,000.00	$32,000.00	Usually 3-5% of construction
01557001*	Maintenance of Traffic	1	Lump	$8,000.00	$8,000.00	Usually 1% of construction
	Over-Excavation	4,778	cu yd	$12.00	$57,336.00	Assumed through wet areas
020560015	Granular Borrow (Plan Quantity)	4,722	cu yd	$25.00	$118,050.00	18" assumed
022310010	Clearing and Grubbing	1	Lump	$20,000.00	$20,000.00	
027210020	Untreated Base Course (Plan Quantity)	1,312	cu yd	$30.00	$39,360.00	5" assumed
027350010	Micro-Surfacing	9,445	sq yd	$3.00	$28,334.67	
027410060	HMA - 3/4 Inch	2,068	Ton	$75.00	$155,100.00	4" assumed
027710025	Concrete Curb and Gutter Type B1	3,919	ft	$16.00	$62,704.00	
027710035	Concrete Curb and Gutter Type M1	0	ft	$16.00	$0.00	
027710017	Concrete Curb and Gutter Type B5	1,550	ft	$10.00	$15,500.00	
027710058	Pedestrian Access Ramp	4	Each	$1,500.00	$6,000.00	
	Concrete Driveway	0	Each	$2,000.00	$0.00	20' wide by 15' long driveway
027760010	Concrete Sidewalk	22,301	sq ft	$4.00	$89,204.00	Includes flatwork
Roadway Subtotal					**$695,589**	
Drainage						
026101386	18 Inch Irrigation/Storm Drain, Class C, smooth	2,253	ft	$75.00	$168,975.00	Assumes single trunk line & laterals
026330130	Concrete Drainage Structure 5 ft to 7 ft deep - CB 9	10	Each	$3,500.00	$35,000.00	Catch basins every 400'
Drainage Subtotal					**$203,975**	

Traffic, Safety & ITS

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Signals						
02892001D	Traffic Signal System	1	Lump	$75,000.00	$75,000.00	
Traffic and Safety Subtotal					**$75,000**	

Environmental and Landscaping

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Environmental						
	Wetland Mitigation	0.33	acre	$50,000.00	$16,500.00	
Landscaping						
	Landscaping	27,842	sq ft	$3.00	$83,526.00	
Environmental Mitigation Subtotal					**$100,026**	

Utilities, Right of Way, and Incentives

PROJECT NAME: SR-165 @ 3200 S & MILL RD, OPTION 3

Item #	Item	Quantity	Units	Price	Cost	Remarks
Utilities						
	New Water and Sewer Line	1	Each	$125,000.00	$125,000.00	
Utilities Subtotal					**$125,000**	
Right-of-way						
	ROW Linda Anderson Land	23,431		$0.50	$11,715.50	
	ROW David and Connie Anderson Land	61,420	sq ft	$0.50	$30,709.80	
	ROW David and Connie Anderson Home	1	Each	$200,000.00	$200,000.00	This includes the home and the land, no relocation package
	ROW Bowler Land & House & Relocation Package	1	Each	$210,000.00	$210,000.00	Assumes $30K for relocation package
Right-of-Way Subtotal					**$452,425**	

APPENDIX J: Traffic Counts

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

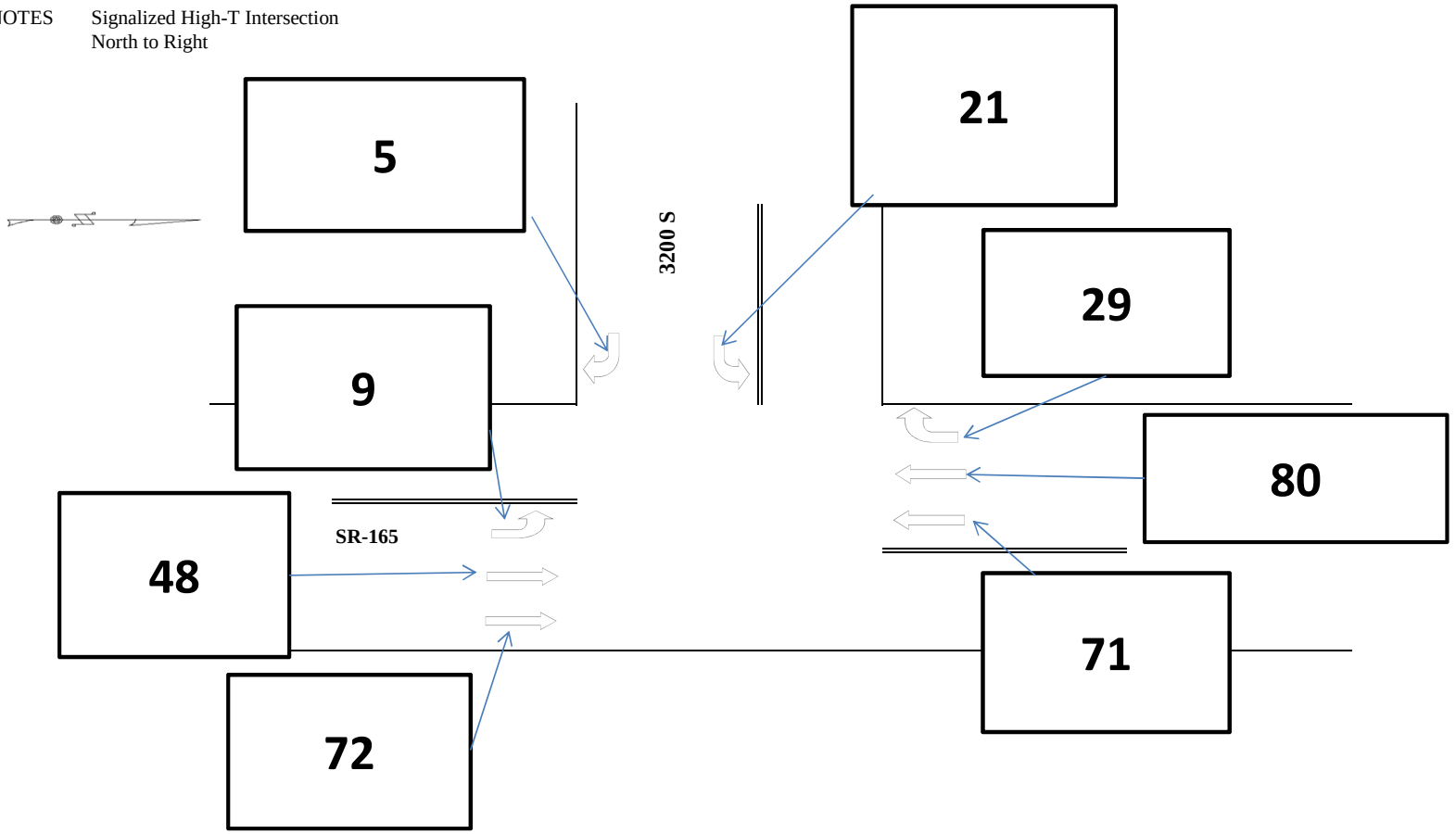
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 4:00 TO 4:15

NOTES Signalized High-T Intersection
North to Right



Bike: 3
Ped. Adult: 2
Ped. Child: 0
Semi: 8

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

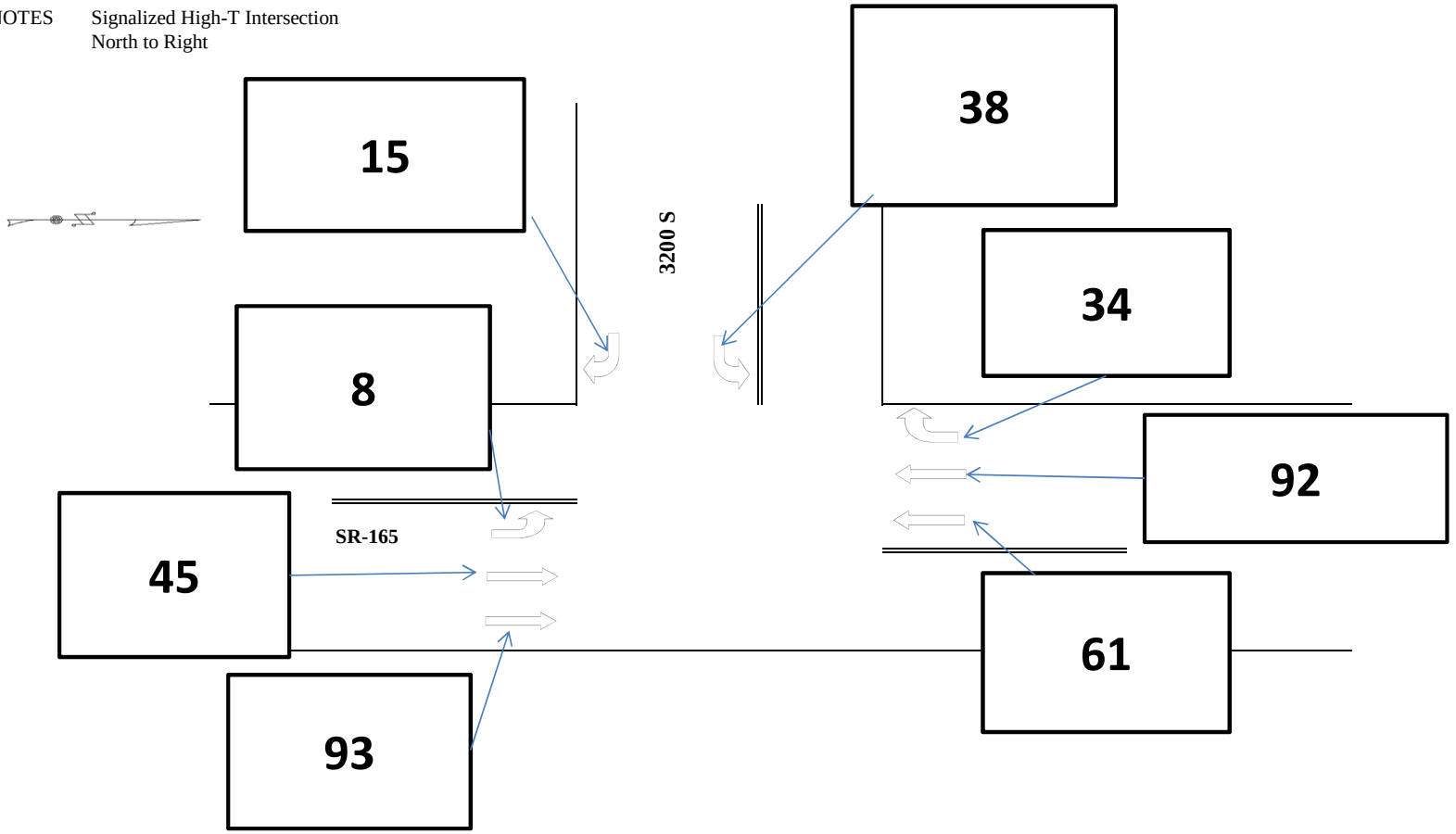
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 4:15 TO 4:30

NOTES Signalized High-T Intersection
North to Right



Bike: 2
Ped. Adult: 4
Ped. Child: 0
Semi: 8

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

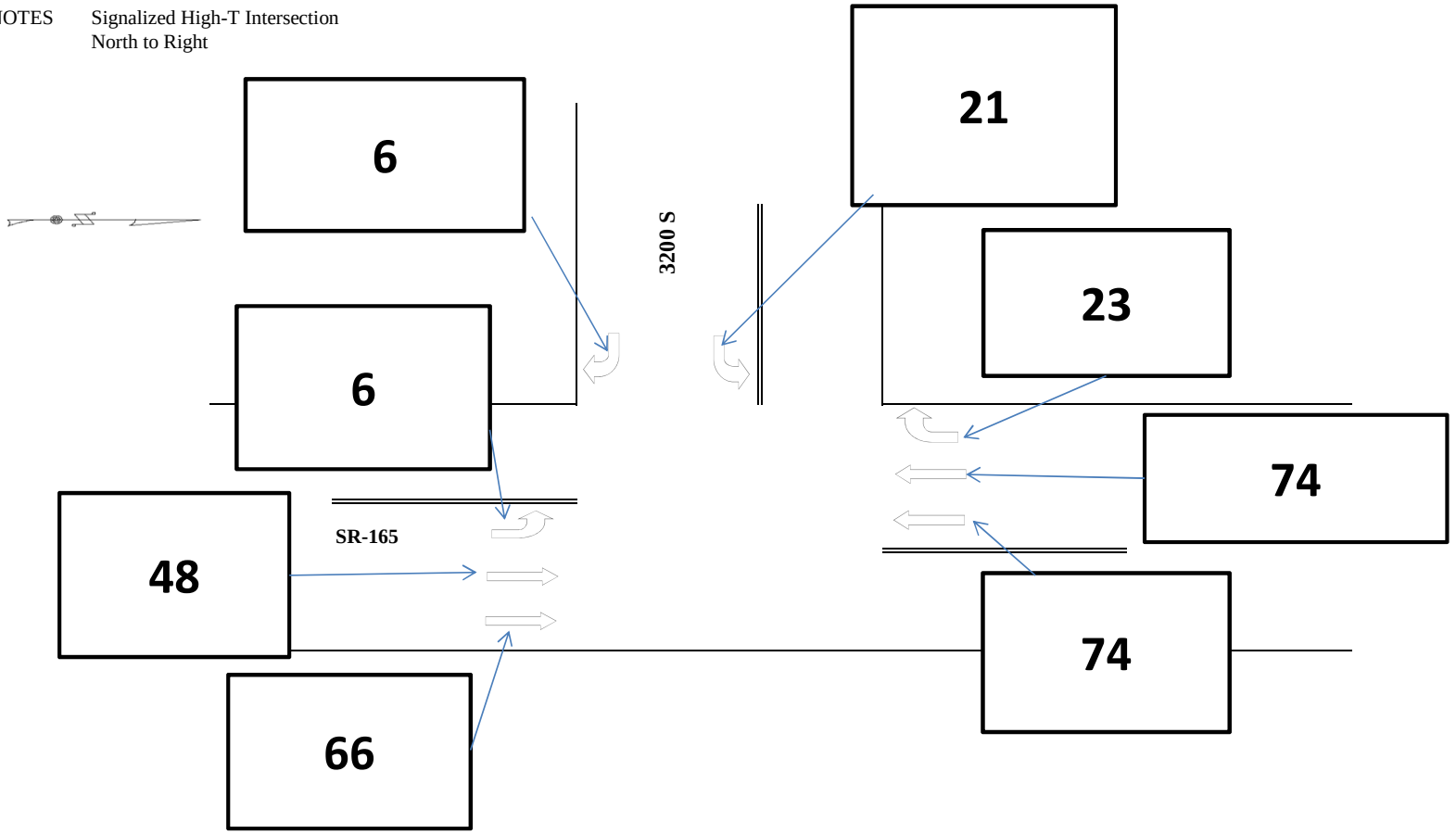
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 4:30 TO 4:45

NOTES Signalized High-T Intersection
North to Right



Bike: 4
Ped. Adult: 2
Ped. Child: 0
Semi: 6

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

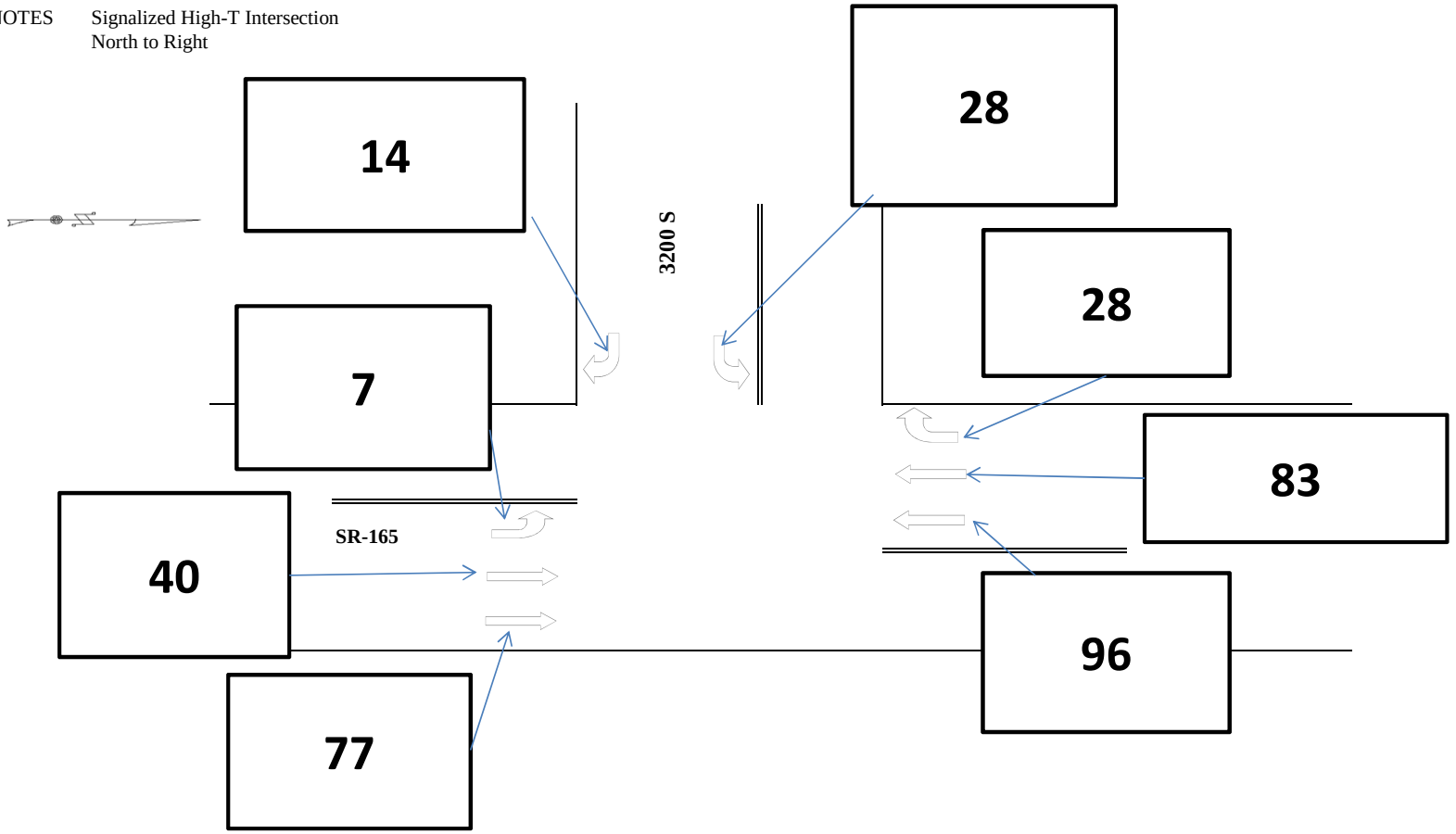
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 4:45 TO 5:00

NOTES Signalized High-T Intersection
North to Right



Bike: 6
Ped. Adult: 0
Ped. Child: 0
Semi: 1

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

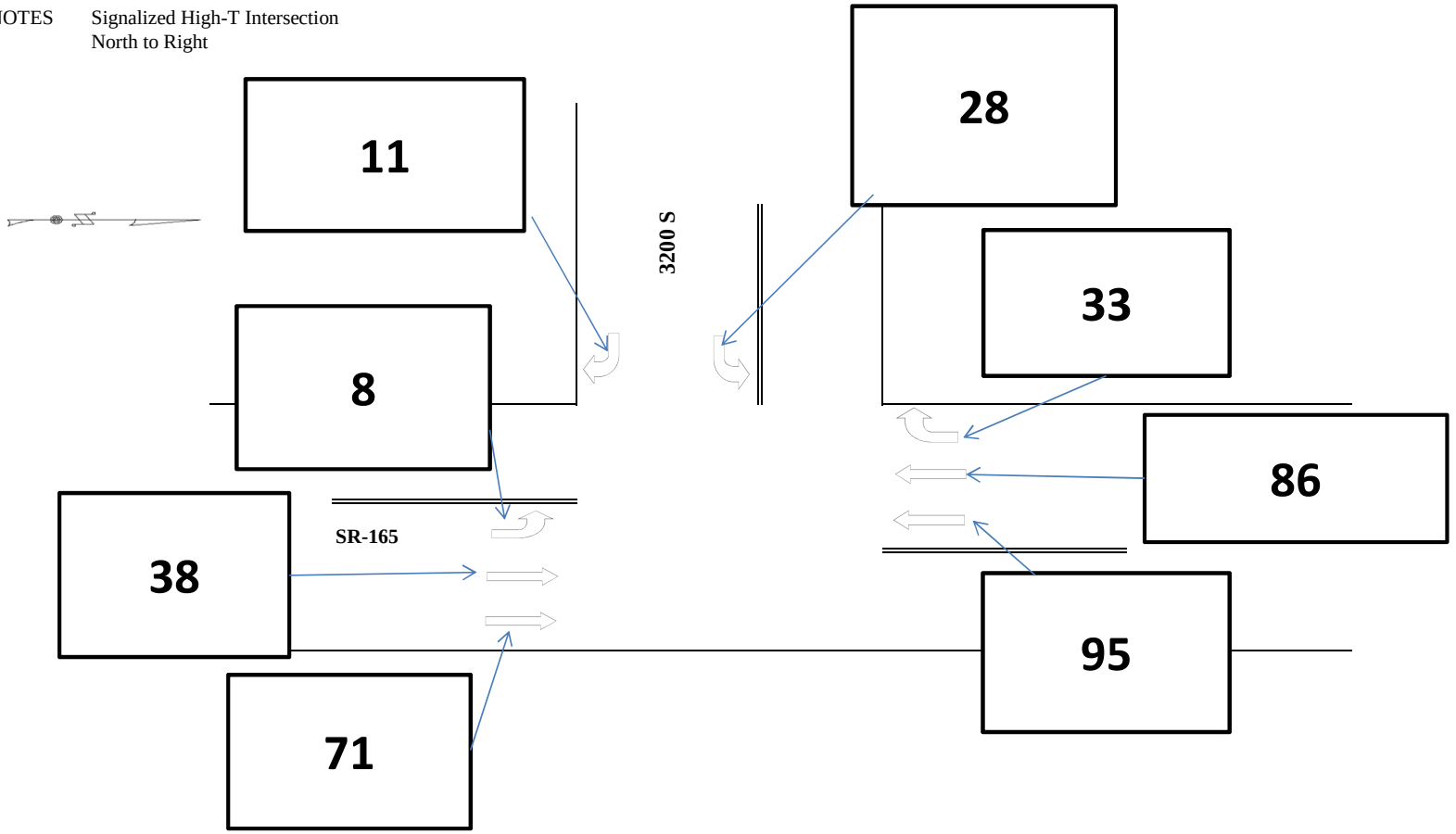
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 5:00 TO 5:15

NOTES Signalized High-T Intersection
North to Right



Bike: 11
Ped. Adult: 0
Ped. Child: 1
Semi: 1

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

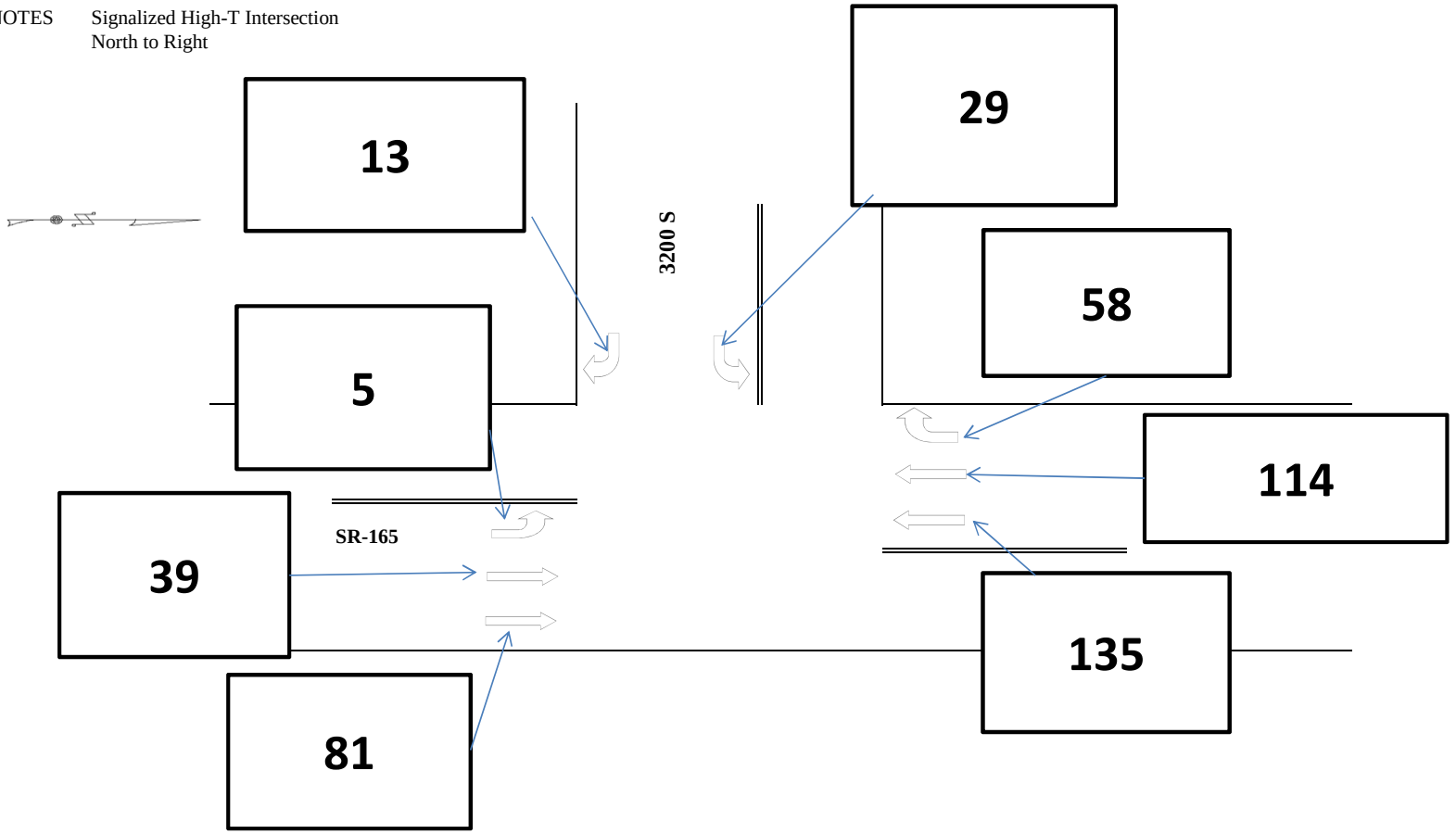
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 5:15 TO 5:30

NOTES Signalized High-T Intersection
North to Right



Bike: 11
Ped. Adult: 0
Ped. Child: 0
Semi: 0

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

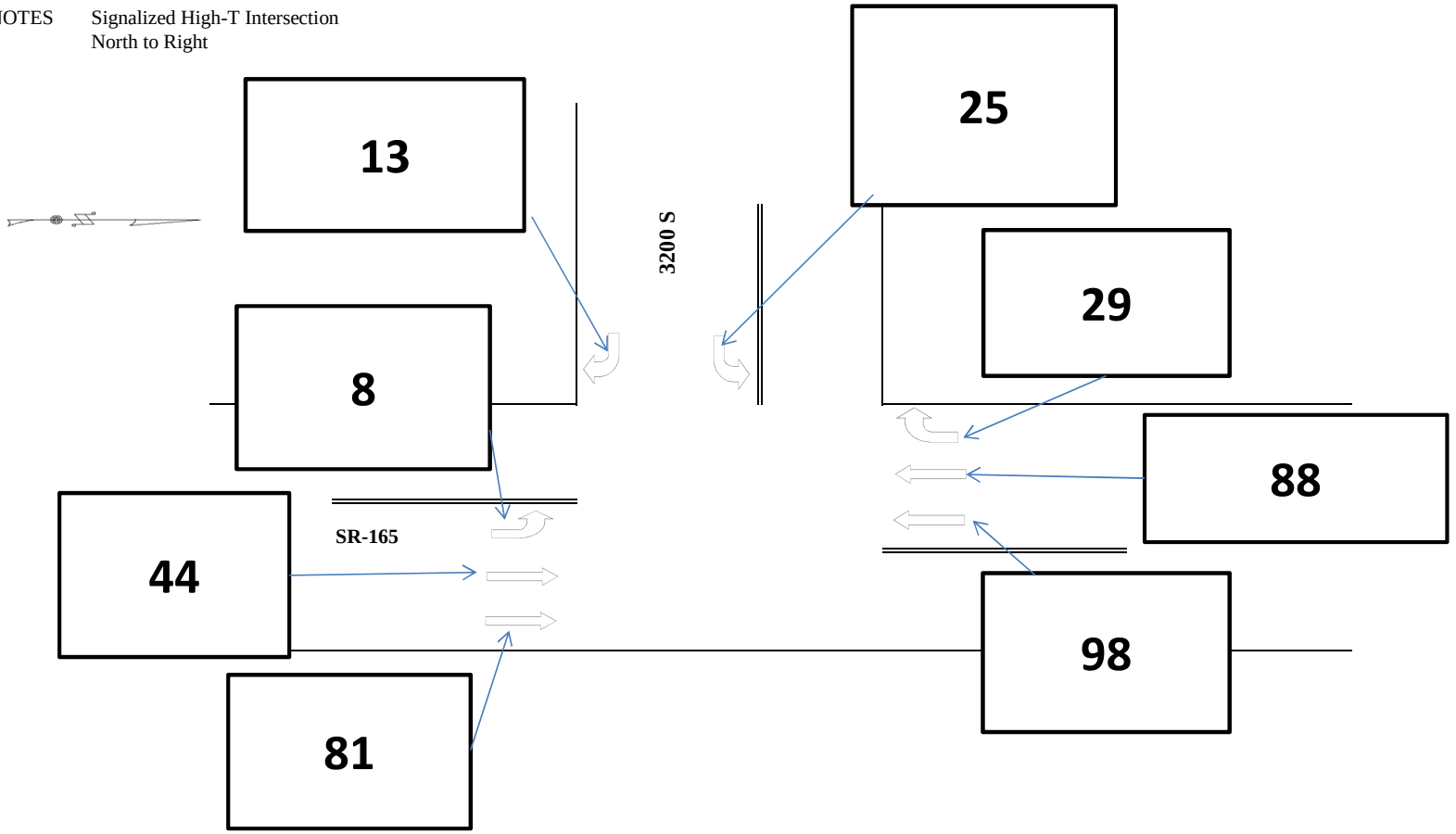
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 5:30 TO 5:45

NOTES Signalized High-T Intersection
North to Right



Bike: 38
Ped. Adult: 1
Ped. Child: 1
Semi: 11

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

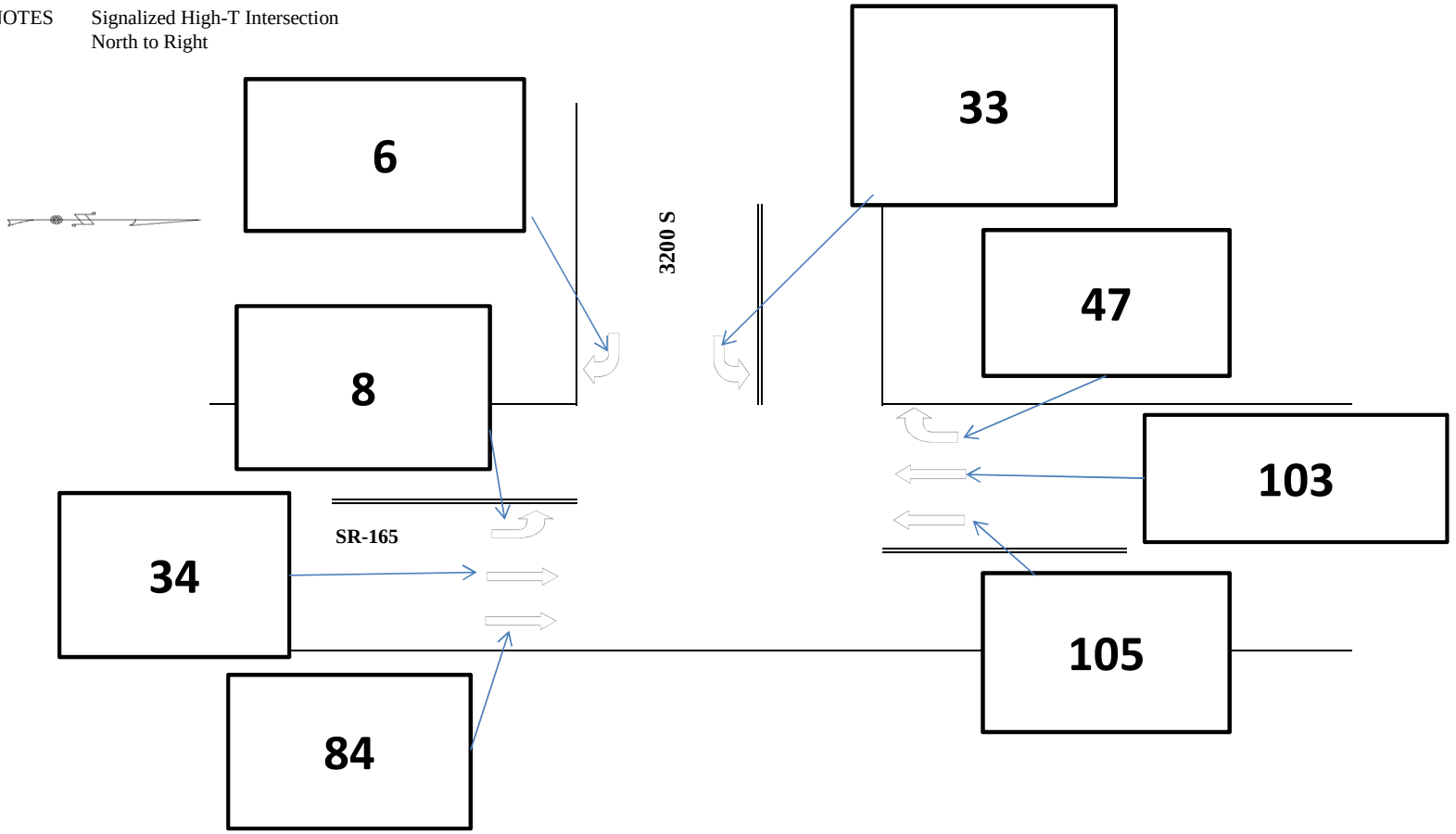
Sample Info

Intersection
N-S STREET SR-165
E-W STREET 3200 S

COUNT DATE 08.12.2014

PM PEAK 5:45 TO 6:00

NOTES Signalized High-T Intersection
North to Right



Bike: 5
Ped. Adult: 0
Ped. Child: 1
Semi: 1

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

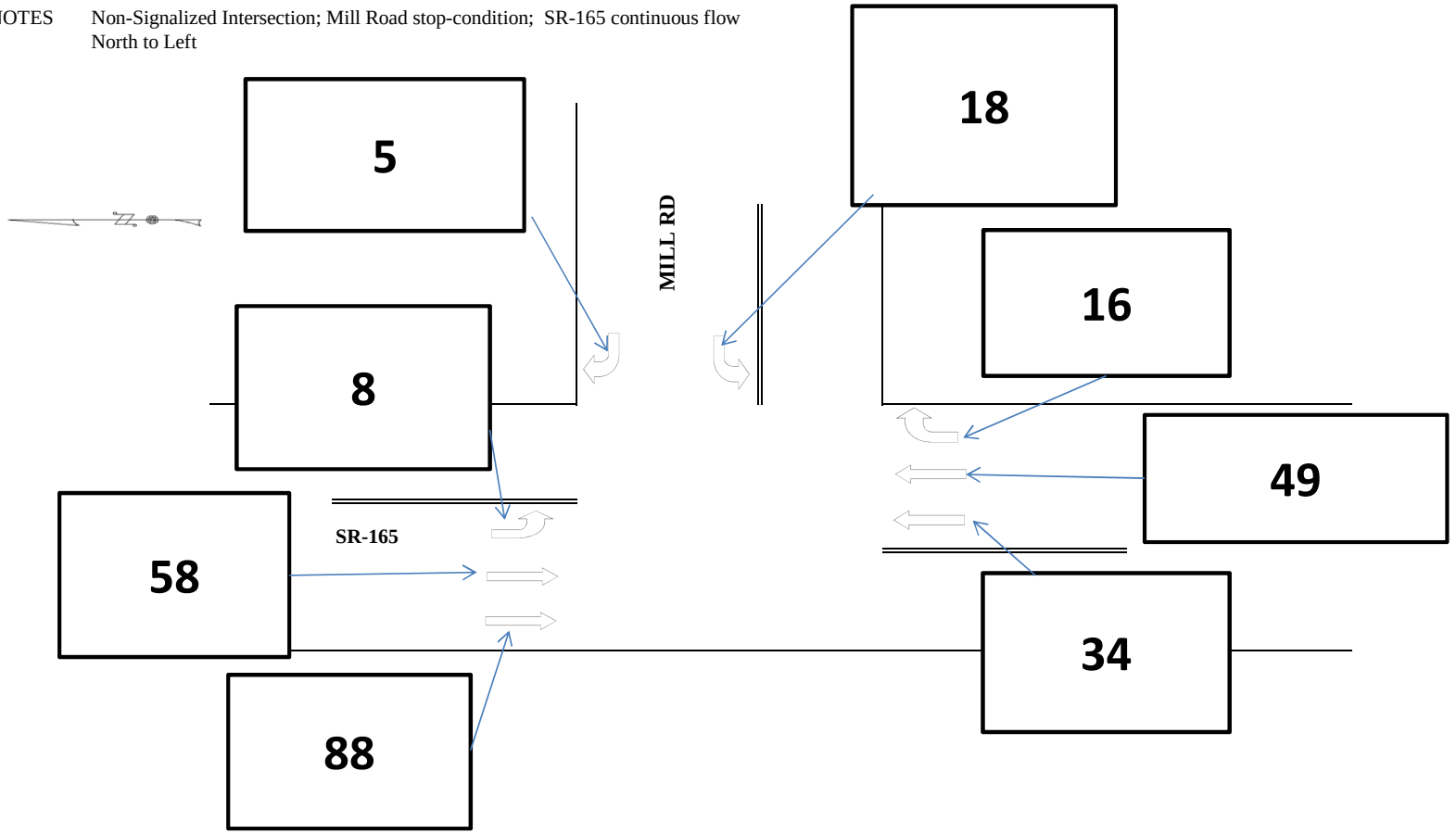
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 4:00 TO 4:15

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 3
Ped. Adult: 0
Ped. Child: 0
Semi: 7

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

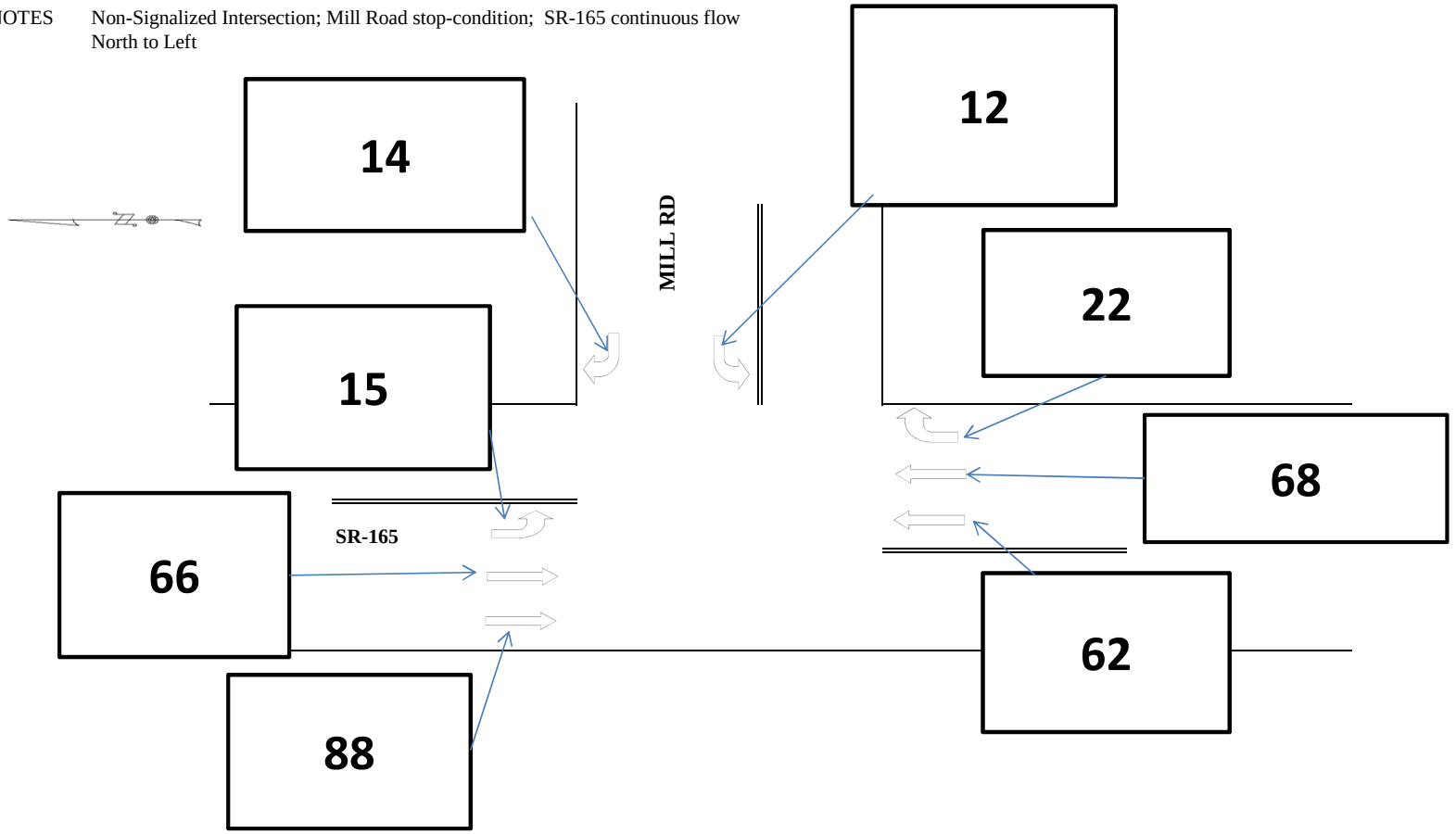
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 4:15 TO 4:30

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 4
Ped. Adult: 0
Ped. Child: 0
Semi: 7

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

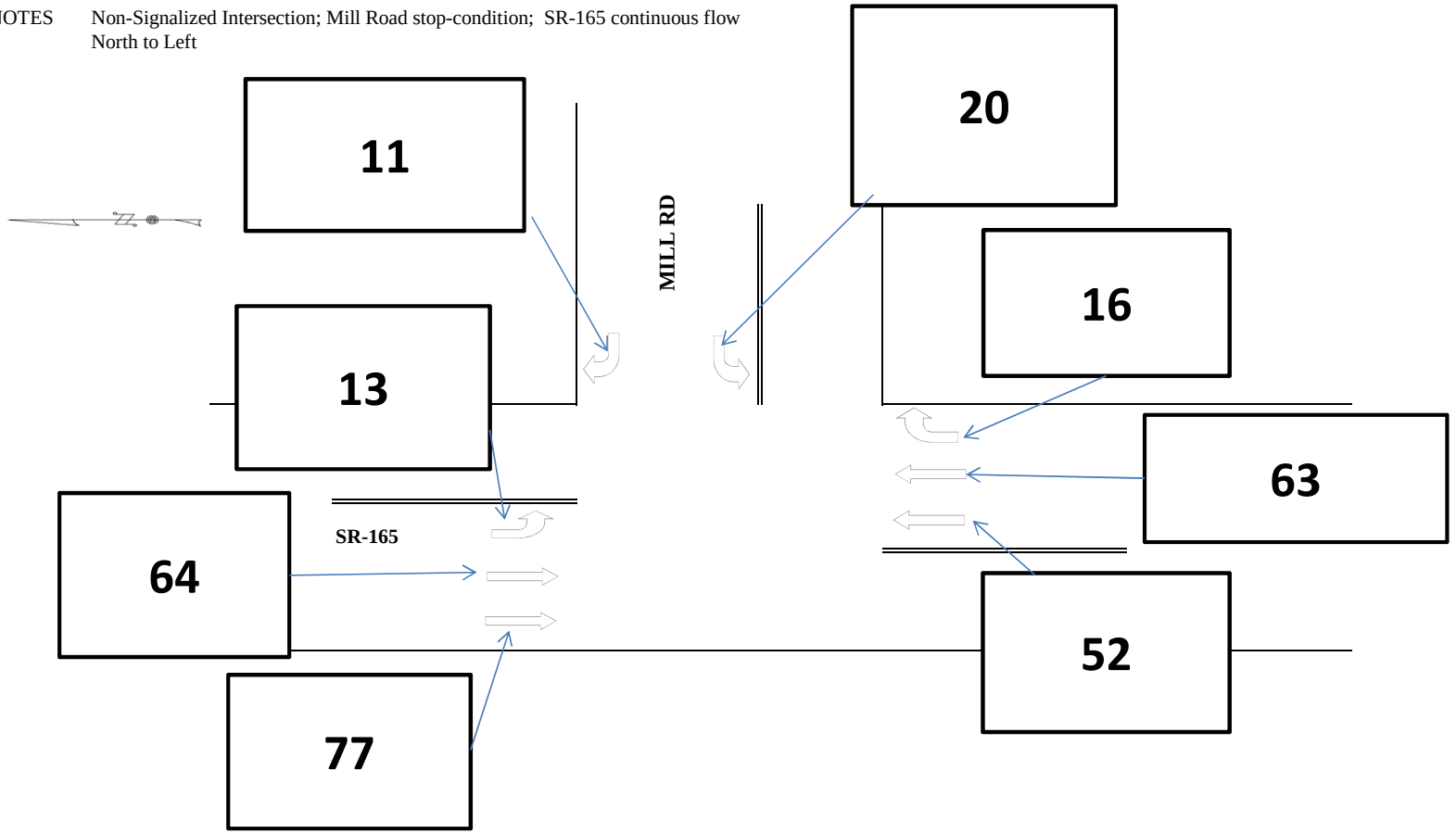
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 4:30 TO 4:45

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 1
Ped. Adult: 0
Ped. Child: 0
Semi: 7

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

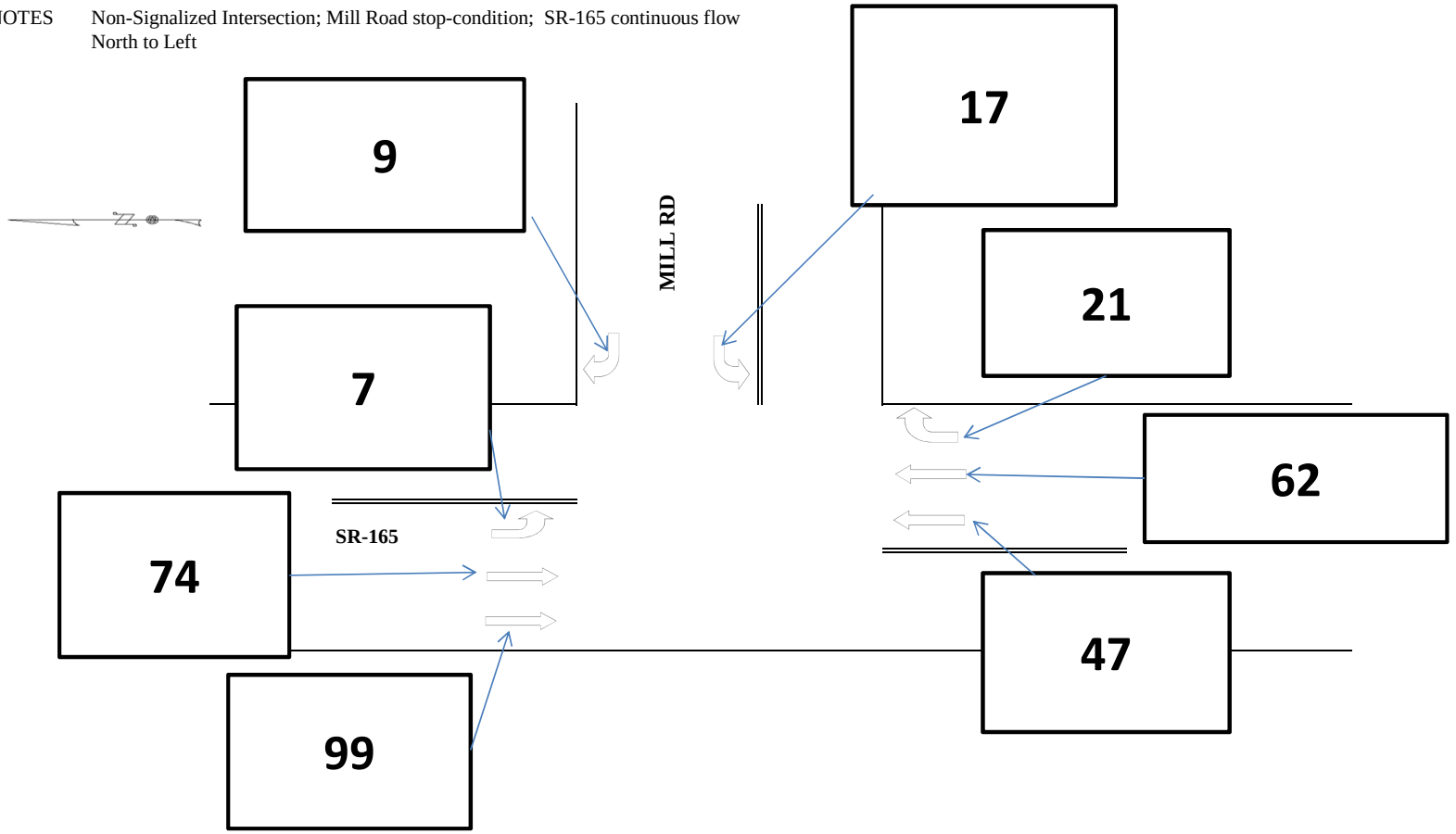
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 4:45 TO 5:00

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 2
Ped. Adult: 0
Ped. Child: 0
Semi: 0

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

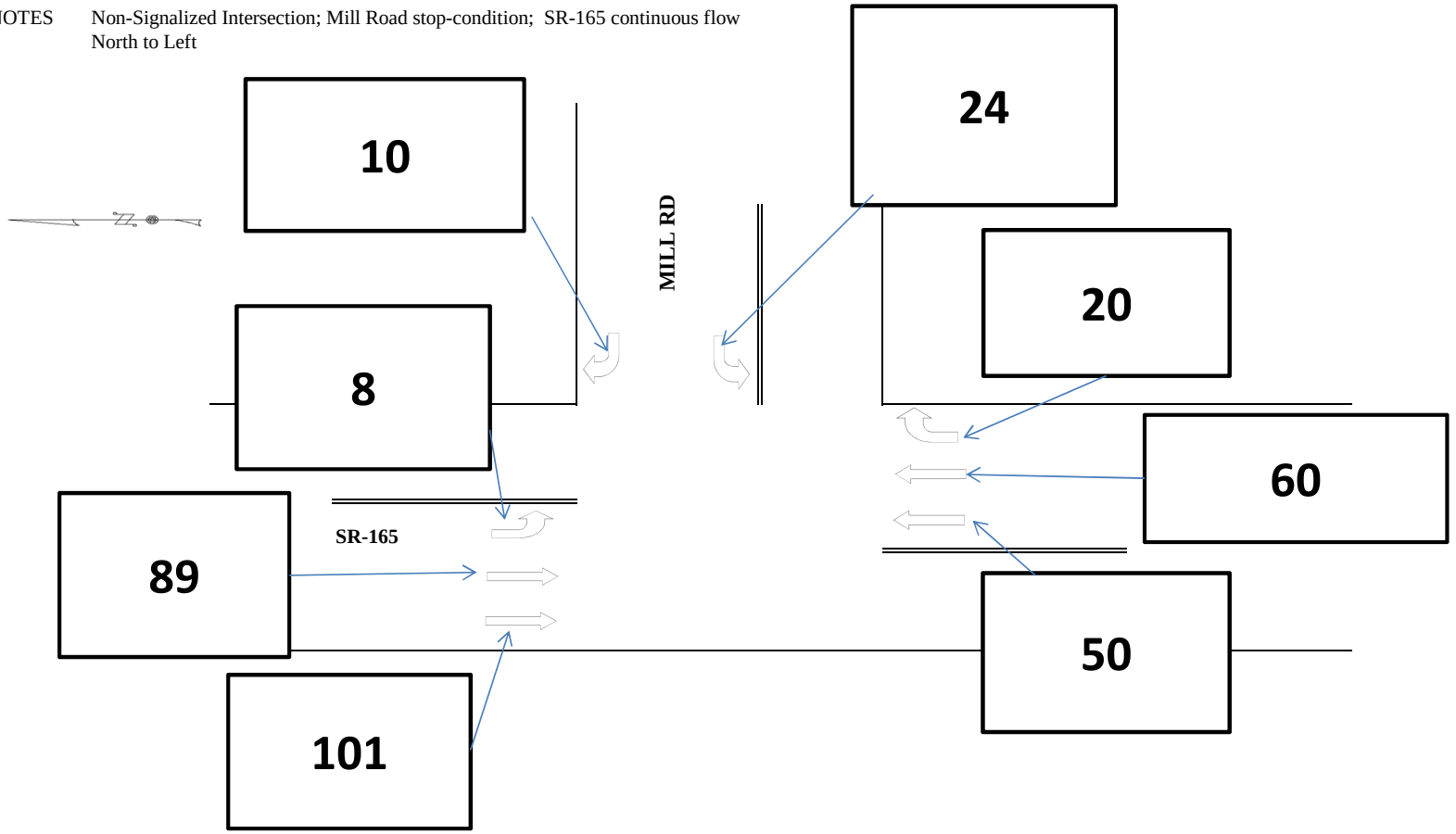
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 5:00 TO 5:15

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 3
Ped. Adult: 0
Ped. Child: 0
Semi: 1

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

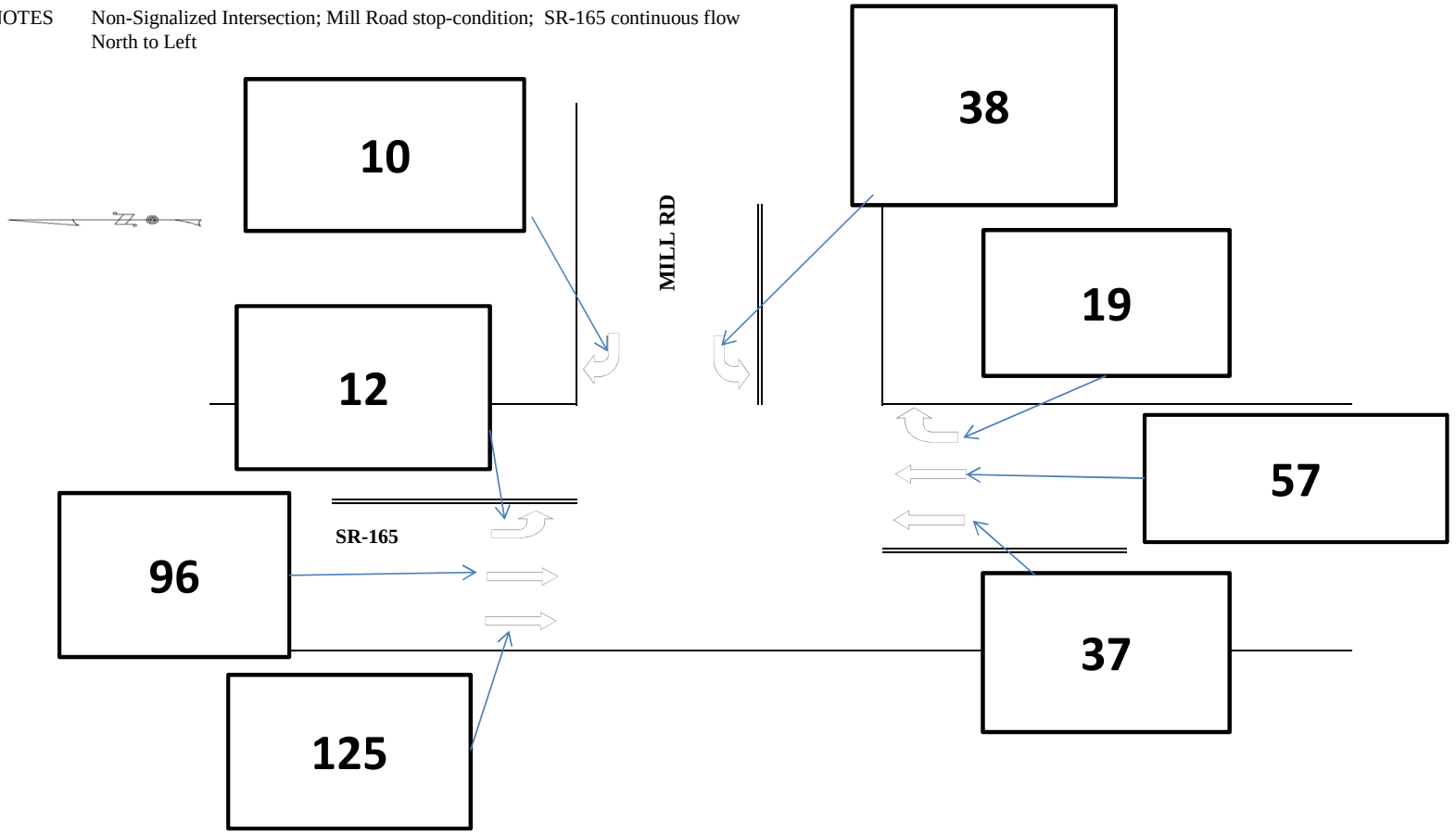
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 5:15 TO 5:30

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 2
Ped. Adult: 0
Ped. Child: 0
Semi: 0

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

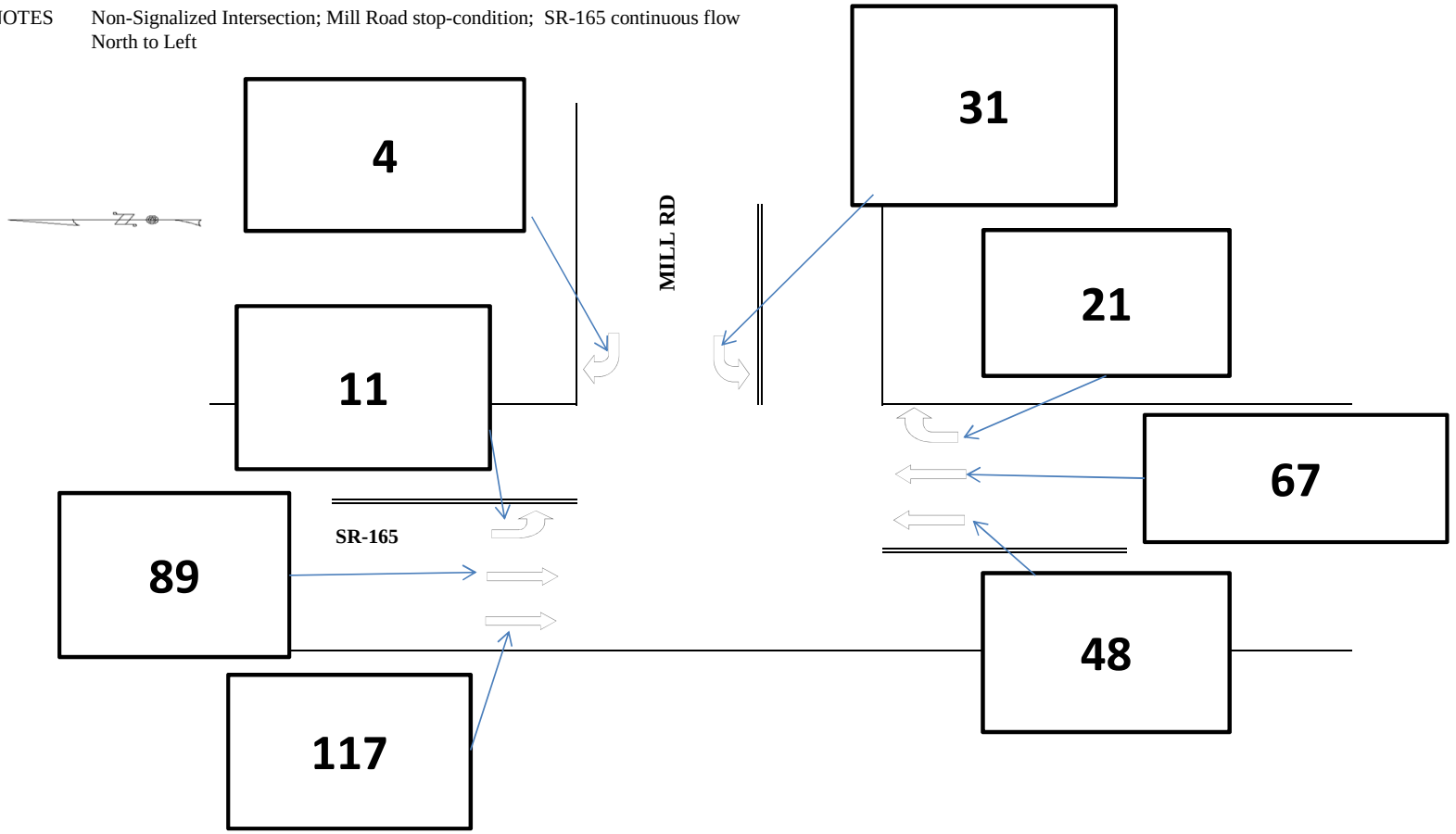
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 5:30 TO 5:45

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 31
Ped. Adult: 0
Ped. Child: 0
Semi: 3

PM PEAK HOUR TURNING MOVEMENT DIAGRAM

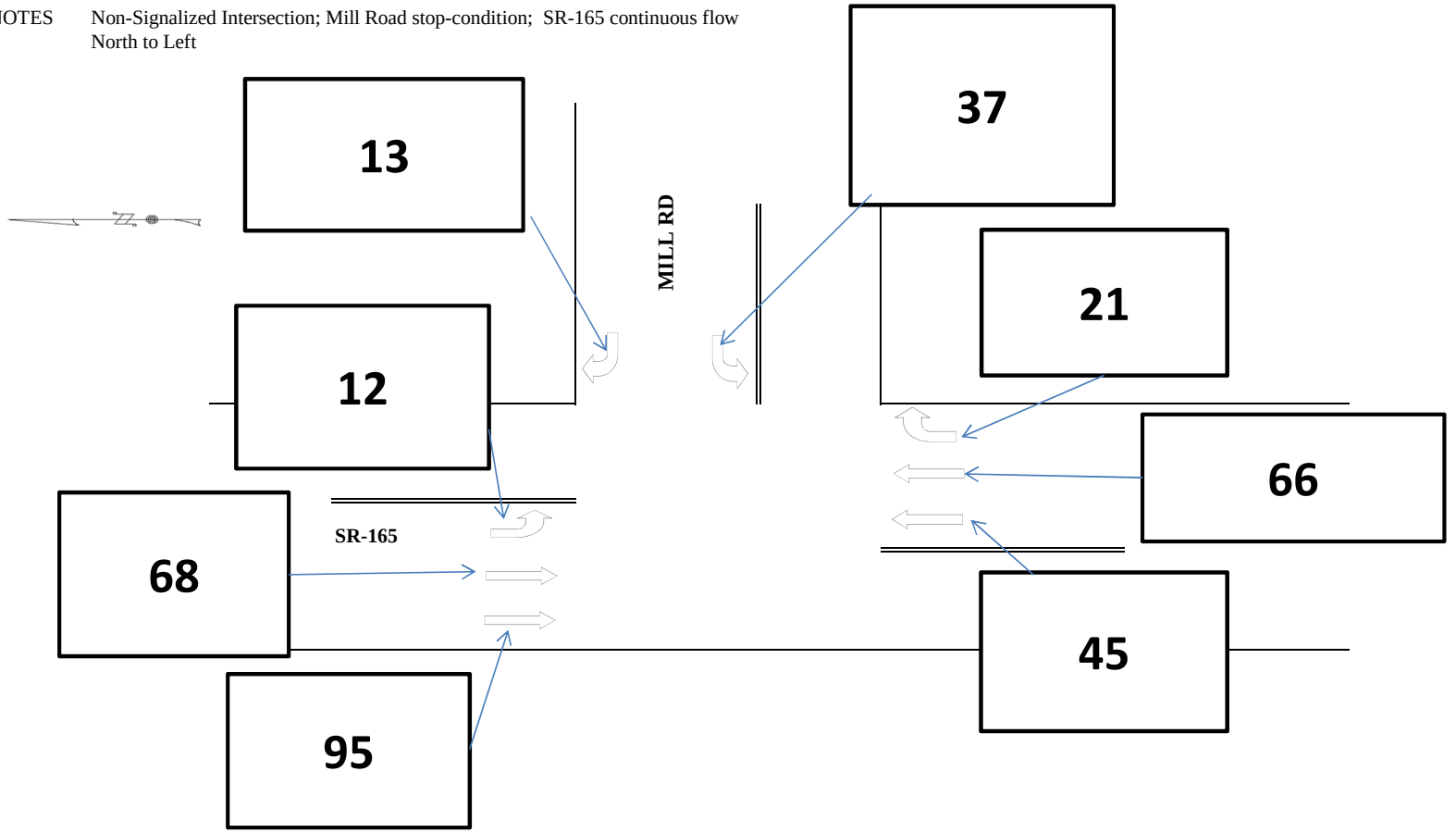
Sample Info

Intersection
N-S STREET SR-165
E-W STREET MILL RD

COUNT DATE 08.12.2014

PM PEAK 5:45 TO 6:00

NOTES Non-Signalized Intersection; Mill Road stop-condition; SR-165 continuous flow North to Left



Bike: 3
Ped. Adult: 0
Ped. Child: 0
Semi: 0

S-MOVEMENT COUNTS

PM PEAK HOUR

NIBLEY INTERSECTION RE-ALIGNMENT

DATE: 8/12/2014

Route	Mode	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45
3200 S to Mill Road	Cars	8	15	4	11	9	10	8	14
Mill Road to 3200 S	Cars	10	8	8	5	9	10	11	12
Both Directions	Bikes	0	2	0	1	2	0	2	0