



**BLUFFDALE CITY PLANNING COMMISSION  
MEETING AGENDA  
Wednesday, April 19, 2023**

Notice is hereby given that the Bluffdale City Planning Commission will hold a public meeting on **Wednesday, April 19, 2023, at 6:00 p.m., or as soon thereafter as possible** at the Bluffdale City Hall, 2222 West 14400 South, Bluffdale, Utah. This meeting may also be broadcast live to the public on the City's website [www.bluffdale.com](http://www.bluffdale.com). Notice is further given that access to this meeting by Commission members may be by electronic means via telephone conference call.

**PLANNING COMMISSION BUSINESS MEETING 6:00 PM**

1. Roll Call.
2. Invocation/Thought/Reading and Pledge of Allegiance.
3. Planning Commission Training - Transportation and Traffic – Ryan Hales, Hales Engineering and City Staff.

**DISCUSSION ITEMS:**

4. Planning Commission Business (planning session for upcoming items, follow up, etc.).
5. Adjournment.

**Dated: April 14, 2023**

**Grant Crowell, AICP  
Community and Economic Development Director**

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

**Present:**

**Members:**   **Debbie Cragun, Chair**  
                  **Ulises Flynn**  
                  **Tina Griffis**  
                  **Michael Kraupp**  
                  **Kory Luker**  
                  **Erik Swanson**

**Staff:**       **Grant Crowell, Community and Economic Development Director**  
                  **Jennifer Robison, Senior City Planner**  
                  **Ellen Oakman, Associate City Planner**  
                  **Kjersti Jarman, Community Development Coordinator**  
                  **Courtney Armstrong, AV Technician**

Chair Debbie Cragun called the meeting to order at 6:01 p.m.

**PLANNING COMMISSION BUSINESS MEETING**

**1.     Roll Call.**

All members of the Planning Commission were present with the exception of Ulises Flynn and Tina Griffis, who arrived late.

**2.     Invocation/Thought/Reading and Pledge of Allegiance.**

Ryan Hales offered the invocation and led the Pledge of Allegiance.

**3.     Planning Commission Training – Transportation and Traffic – Ryan Hales, Hales Engineering and City Staff.**

Chair Cragun welcomed Traffic Engineer and Traffic Operations Engineer, Ryan Hales from Hales Engineering for a training presentation on Transportation and Traffic. Senior City Planner, Jennifer Robison commended Mr. Hales for his expertise and thanked him for coming. Mr. Hales stated that he has a background in Civil Engineering, studied planning, and is a Professional Traffic Operations Engineer. He invited the Commission Members to ask questions during the presentation.

Mr. Hales reported that one project that is currently underway is the Transportation Master Plan. Bluffdale has experienced massive growth, which is something situation he has experience in. He

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

noted that he served previously as a Planning Commissioner in Lehi City. He commented that what is set forth in the Code should be balanced with the development rights of individuals.

Mr. Hales reported that as a Traffic Engineer, he has completed over 2,500 studies in the area ranging from Transportation Master Plans, which represent a large overall view to street-level Traffic Impact Studies. This is where microsimulation models help determine needs in terms of stop control, yield control, traffic signals, and turn pocket length. He cited traffic issues on Redwood Road leading to City Hall, with many crashes and higher-than-usual traffic causing delays. There are problems traveling east/west through the south end of the valley with cars coming off 14600 South. There are also issues on Main Street in Lehi which is bogged down. Environmental Impact Studies are completed before roads are built to identify impacts on local populations. Mr. Hales reported that they have reviewed the Utah Department of Transportation (“UDOT”) traffic studies, which they conduct before installing new signals.

Some of the tools used for transportation planning include:

- *The General Plan.* This is a guiding document for the community that designates where commercial and residential are to be located. The starting point is to establish goals for land use in the General Plan.
- *The Transportation Master Plan.* Addresses what happens around that and ways to move people.
- *Traffic signals, stop signs, and yield control.* Identifies where to locate uses such as schools, which are typically planned around arterial roads. Where to locate police and fire stations also requires balance and precise planning.
- *Trip Generation Traffic Studies.* Determines how many trips a development adds. It reveals the impact on roadways and is useful for impact fee development. This is important because new developments generally are required to mitigate their impact on traffic. Stub roads are also often placed for future development. Trip generation studies help provide roadway connectivity to ensure that people can travel between communities.
- *Distribution Assignment.* Takes the place of a full Traffic Impact Study. Smaller studies look at trip generation, origin, and destination to help determine how large turn pockets should be.

**BLUFFDALE CITY PLANNING COMMISSION**  
**MEETING MINUTES**  
**Wednesday, April 19, 2023**

They are only appropriate for small developments. It does not anticipate the need for further development of Porter Rockwell Boulevard, which is projected to be a five-lane road, with traffic projections beyond the year 2050 than a seven-lane road could handle.

- *Traffic Generation Study.* Looks at trip generation, distribution, and assignment and evaluates intersections. Level of service is a measure of effectiveness and looks at speeds, densities, and volume. Intersections are measured by delay and the individual level of service is based on time spent stopped at an intersection. The average for all drivers is the average level of service. Signals are measured the same way. Thru traffic at a two-way stop is considered zero delays but the wait time for the vehicles stopped on a side street is counted.

Community and Economic Development Director, Grant Crowell, asked what level of service they want to achieve or are willing to accept. Chair Cragun asked how Mr. Hales decides how the impact of new development is estimated without being able to conduct a study on it. Mr. Hales described levels of service and stated that Levels A through D are acceptable and E or F are not. It is comparable to a letter grade where D is not desirable. Alternatively, keeping levels of service too high requires roads that are wider than necessary. This leads to unused pavement which results in maintenance costs. A balance must be reached. Levels of service C and D are acceptable in most communities. UDOT aims for a level of service D, which means traffic is flowing and everyone experiences delays. Personal delays could last up to 55 seconds at a light.

A light takes 120 to 140 seconds to cycle. They are timed for progression so traffic can move from one light to the next. UDOT tries to maintain that and can change the timing from the Traffic Operations Center. Times are based on averages. While an individual driver may experience a higher delay, the signal does not fail based on that number. They make recommendations for improvements at a level of service E or F. When projects come in for future evaluation, they try to maintain a D level of service or higher. If they cannot, they look for improvements that can be made so that it functions better for everyone.

Mr. Crowell asked for clarification on each letter grade. Mr. Hales stated that it is based on the average seconds per vehicle through an intersection. Depending on the circumstances, 0 – 10 is service level A, 10 – 20 is B, 20 – 35 is C, 35 – 55 is D, and 55 – 75 is E. Above that is F.

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

To determine likely future conditions, they do a traffic count and collect data on the roadway. Average Daily Traffic (“ADT”) involves counting every car in 24 hours. They start by finding out how much traffic exists.

Ulises Flynn asked if the studies consider seasonal differences such as when school is and is not in session as well as events. Mr. Hales explained that when evaluating traffic, they try to normalize the data set to eliminate outliers such as crash conditions. With schools, they may conduct a Traffic Study when schools are starting or ending. Schools often have peak 15-minute surges during these times or evening school events.

Situations of traffic circulation issues at local schools were described. Commissioner Flynn pointed out that there is a red line street in front of Summit Academy where his children go to school to identify where parents pick up and drop off students. Mr. Crowell stated that communication is key between law enforcement and the school. Commissioner Griffis pointed out that it is a safety issue. Mr. Hales stressed the importance of police presence around schools. Possible options were discussed.

Mr. Hales reported that the Institute of Transportation Engineers publishes a Trip Generation Manual, which is a compilation of studies across the United States that is used to estimate how many trips will be generated by different types of new development projects. It contains over 400 studies on single-family homes with compiled statistics and a correlation coefficient. Mr. Hales is one of 15 reviewers in the U.S., but the statistics in Utah are very different. Typically, families in Utah are larger with more people driving, which generates more trips. Sandy City recently conducted a study showing 16 trips per single-family home in one specific area. It was estimated that the average single-family home generates 10 trips per day.

Mr. Hales next commented on the Trip Distribution and Assignment for which they use a larger model or on-site traffic that has been counted to show where traffic is going and coming from. They look at distribution assignments and run a traffic analysis, levels of service, and look at queuing delays. It is a large simulation model that includes the number of lanes, traffic speeds, vehicles, and vehicle types as determined by the sensors based not on weight but axel spacing.

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

Mr. Crowell asked how the model distribution assignment is achieved. Mr. Hales explained that it is based on a gravity model scale. The Large Regional Travel Demand Model is built by the Wasatch Front Regional Council (“WFRC”) which represents all cities in Salt Lake County and is part of the Wasatch Front Planning Area. They talk to the municipality and get information on the General Plan, which is added to the regional model. It is based on density. Salt Lake City is a high-density node. The model is calibrated based on the land use in Bluffdale, Salt Lake City, and neighboring cities. Based on those factors, traffic is assigned to the roadways and provides distribution percentages showing where people go and how they get there. Those models are used to plan roadways.

Chair Cragun pointed out that if one particular method fails, people find an alternative. Mr. Hales stated that, for example, if there is a crash on I-15 traffic is diverted onto Redwood Road, which causes congestion. They do not, however, want to rebuild Redwood Road to accommodate traffic in the event of a crash. It is a challenging balance because it is always changing.

Mr. Hales reported that the traffic analyses and simulation model is a statistical-based algorithm and model that is run 10 times. They take the averages and identify 95<sup>th</sup>-percentile queues to design intersections and recommend improvements. He raised the question of what happened before the project came in, after it was in, the difference between the two, and what kind of improvements can be recommended. Mr. Hales explained that typically with a Traffic Impact Study there is a level of service table. They do not worry about anything that is a level of service A through D. They do, however, have concerns with levels of service at E and F and start looking for improvements. A mitigated column will include a list of improvements added to the model to make it operate at an effective level of service. He noted that this is the purpose of traffic impact studies.

Mr. Hales stated that they conduct traffic counts, which are the most efficient way to get counts quickly. Counts are typically done from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. which are the peak commuting periods.

Commissioner Flynn asked if the City has a map showing the current levels of service for roads. Mr. Hales stated that at the macro level is the Transportation Master Plan. Mr. Crowell noted that it will be updated this year. Mr. Hales explained that there is a functional classification for arterial,

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

collector, and local roads. Functional classifications address how a road functions, how it is labeled, and how much traffic it can handle. Engineers understand that a five-lane road can accommodate about 35,000 cars a day, which is included in the models.

Mr. Hales next addressed what constitutes a trip. He explained that when a Traffic Engineer talks about a trip he counts the cars in the driveway. A trip to the grocery store for example would constitute four trips. They look at every movement including exiting and entering a driveway. A trip generation table includes trips in and trips out. He referred to the Trip Generation Manual. If local data needs to be used that is not in the manual, they physically do a count.

Mr. Crowell pointed out that everything has a category and a number. He explained that the number of trips puts pressure on City roads, which creates an impact and in turn pertains to the impact fee that is paid by developments. Transportation impact fees for commercial development are the most substantial component of the cost of acquiring a Building Permit.

Mr. Hales next addressed impact fees and explained that using the Transportation Master Plan they identify deficiencies in the community. That is taken to the Capital Facilities Plan where the cost of the improvements is identified. It is then put into an Impact Fee Facilities Plan, which is the next step in determining the timeline. The Impact Fee Analysis (“IFA”) is the last step in the process and results in the impact fee which is normally a cost per trip. Developers often challenge the impact fees, which are based on the various layers of improvement going back to the Master Transportation Plan. If the fees are reduced, the cost must be made up elsewhere. Another option is for the City to potentially accept a lower level of service.

Chair Cragun commented that developers want fewer trips counted. When constituents show up to comment, they expect the numbers to be much higher than the traffic study suggests. They want the numbers to be higher while developers want them to be lower. Mr. Hales stated that it is important to weigh opinions and facts.

When looking at projects, they talk about trip reductions. For a mixed-use site, someone might drive in the morning but not leave the area until after work. This creates a synergy of trips, which prevents overcounting and overbuilding roads. Multi-modal reductions can also be explored.

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

Mr. Hales next referenced the Trip Distribution Assignment which identifies where traffic from a particular location is going.

A level of service diagram was displayed. When discussing the level of service on a roadway, A through D is acceptable. A level of service A allows for the free flow of speeds. When there is more congestion at a level of service D there is an unstable flow. A level of service E is very unstable with significant delays. A level of service F is very congested. The flow of traffic is based on density and speed.

Commissioner Flynn asked about the current rating of I-15. Mr. Hales stated that depends on the time of day. At 2:00 a.m. free-flow speeds are very good. At a congested time, however, it is likely at a level of service E or F. I-15 was rebuilt in 2002 for the Olympics with a 30-year planning horizon. Mr. Hales ran an analysis on I-15 projecting failure points by 2015. This was troubling since billions of dollars were spent rebuilding I-15.

Mr. Hales reported that Utah is a great place to live, which attracts a lot of people. There are four seasons, nearby mountains, and recreational opportunities. Over time, traffic will continue to get worse. Currently, they are looking at transit alternatives. Different scenarios are run to set the base level. They also do five and 20-year approaches. The current travel demand model forecasts out to the year 2050, which the WFRC and the Mountainland Association of Governments (“MAG”) are both projecting to.

He explained that a Trip Generation Study (“TGS”) is a Level 1 of 4. If there is more than just an existing condition in a Traffic Impact Study, there is enough traffic to cause concern. A 20-year projection shows that they want to ensure that it will work well. Different software programs are available to run different evaluations. They are deterministic models, which means that no matter who runs it, it will yield the same result every time. Stochastic models are statistically based on random seed numbers that change each time, which yields different results. Simulation models are run 10 times with random seeds yielding a broad cross-section showing how the traffic flows in each one. Deterministic models do not have a visual output. The numbers are inputted and the level of service is generated. Simulation models use an aerial photograph as a background with roadways built on top. They look for the 95<sup>th</sup> percentile queue. He noted that 95% of the time they want the



**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

queue to fit in the turn pocket. It should only spill over 5% of the time because speed differentials are where there are high numbers of collisions of higher severity.

Mr. Crowell pointed out that some businesses become very popular in a short period of time. Mr. Hales provided a non-comprehensive list of mitigation measures that can be recommended within a traffic setting. They look at background conditions to set the stage and question how it is functioning. Improvements are often needed in a background condition that is unrelated to the project. If a project does not go through because of funding, timelines, or other issues, they have still identified problems that need to be remedied. Similarly, if they look not just at existing background conditions but over five years and find problems without the project, those problems will still come up and need to be addressed. City Engineers and UDOT look at them and include those recommendations on their watch list.

Mr. Crowell pointed out that there are existing deficiencies that are not the problem of the developer but the neighborhood is very concerned. There are legal implications of ensuring that it is attributed correctly. He stated that there must be a direct relationship to require someone to spend \$1 million improving a road. Mr. Hales addressed proportional and shared costs, which identify who is going to pay for the improvements and how to do them. Once a Traffic Impact Study has been conducted and a list of improvements drafted, engineering and planning start the negotiation process with the development team to identify the improvements that are needed for a developer to move forward with a project. There is often negotiation back and forth. UDOT frequently has mitigations on its long-range plan. They and the WFRC and MAG are also proactive at finding ways to improve roads. Often there are more needs than they have money for. As a result, they are trying to increase the capacity of roadways, which is done through access management. He reported that on I-15 there is currently peak hour spreading. It is becoming very congested so people change their travel patterns and changing the times they travel.

Mr. Crowell commented that UDOT has a lot of demands to deal with. Due to growth, there are ways to get things done more quickly. For example, the numbers have to verify that the investment is warranted. With regard to state highways, the City has no control over those facilities. Mr. Hales next addressed turn lanes and how they determine when one is needed. Regional plans include the

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

WFRC, MAG, and the as well as the Five County Association of Governments, the Dixie Metropolitan Planning Organization, and other organizations that address growth and development.

When looking at traffic impact studies, the key is to determine if the counts are valid. The time of year is important since data that is collected on a snow day may not be accurate. Accurate trip generation is achieved by ensuring the use of the Institute of Traffic Engineers or comparable data that is reliable. Studies are run during worst-case peak hours.

Mr. Hales suggested that they ensure that the recommended mitigation measures are valid. They refer to various manuals including the *Manual on Uniform Traffic Control Devices* (“MUTCD”). Nine traffic signal warrants require certain criteria to be met. *A Policy on the Geometric Design of Highways and Streets* contains design parameters. *The ITE Trip Generation Handbook* is also referenced as well as *Methodologies for Doing Impact Analyses* and the *Highway Capacity Manual*. Specific examples were given.

Raised medians were next addressed. Mr. Hales stated that one way they get more capacity out of a road is when the left and right turn lanes are moved to not impede thru traffic. With a five-lane road, a raised median controls accesses. They are not well-liked by business owners but from a traffic perspective, they increase the capacity on the roadway. Mr. Crowell stated that on 2700 West and Bangerter Highway they have had to put the median in. It is to be extended with the project. There have been definite business impacts. A roundabout is also being installed.

With regard to a question raised about process, Mr. Hales explained that many intersections are at a level of service F for various reasons. Sometimes a lower level of service has to be accepted. Another option in some cases is to add a raised median, which limits left-hand turns and increases the level of service dramatically. Mr. Crowell stated that they can also attribute the impacts of only new growth to what they can use impact fees for. By State Law, they can only use impact fees to construct things that are created by growth demand. Funding options were discussed.

Mr. Crowell reported that the City Council has acknowledged that they would like to ensure that they do not diminish existing parking, regardless of the history. Work and negotiation will be ongoing. It

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

was noted that the current location of the intersection is too close to the existing 14600 South. A light is needed and staff was prepared to provide reasoning behind why it is warranted.

Mr. Hales commented that when a project comes in, the Commission looks at accesses and where they are spaced. If there are offsetting accesses, often there are conflicts. They can be from left-turning vehicles coming off the side street or on the major street. There are positive and negative offsets. In discussing offsets and conflict points, they can ask the Engineer if there is going to be a conflict. The more conflict points, the more opportunities for crash potential. A standard four-leg intersection has 64 conflict points. A three-leg intersection has nine. It is better on a smaller road for them to line up and have all 64 conflict points in the same location. When they are offset they can be dangerous.

**DISCUSSION ITEMS**

**4. Planning Commission Business.**

Mr. Crowell reported on the following:

- The next Planning Commission Meeting was scheduled for two weeks from tonight.
- A joint meeting was held with the City Council the previous week on the Economic Development Plan. One Planning Commission Member was in attendance. The next joint meeting is scheduled in June or July.
- Long-range planning was ongoing.
- A Consultant was hired to work on the Parks Plan.
- A proposal was prepared to update the Transportation Plan. The hope was that it will include active transportation.
- The Accessory Dwelling Units (“ADU”) matter passed the Planning Commission and was to be heard by the City Council on April 26.
- A Tentative Budget presentation was to take place at the next City Council Meeting.

A question was raised regarding when the secondary water will be turned on. Mrs. Robinson stated that staff had heard that it was to take place on May 1 in most of the canals, which is later than normal. Due to flooding, some of the Welby Jacob Canal was damaged on the Herriman side.

**BLUFFDALE CITY PLANNING COMMISSION  
MEETING MINUTES  
Wednesday, April 19, 2023**

**5. Adjournment.**

The Planning Commission Meeting adjourned at 7:30 p.m.



\_\_\_\_\_  
Tiffini Shinsel, Community Development Coordinator

Approved: \_\_\_\_\_ 5-3-2023

