

# Northern Corridor Highway Analysis and Alternatives

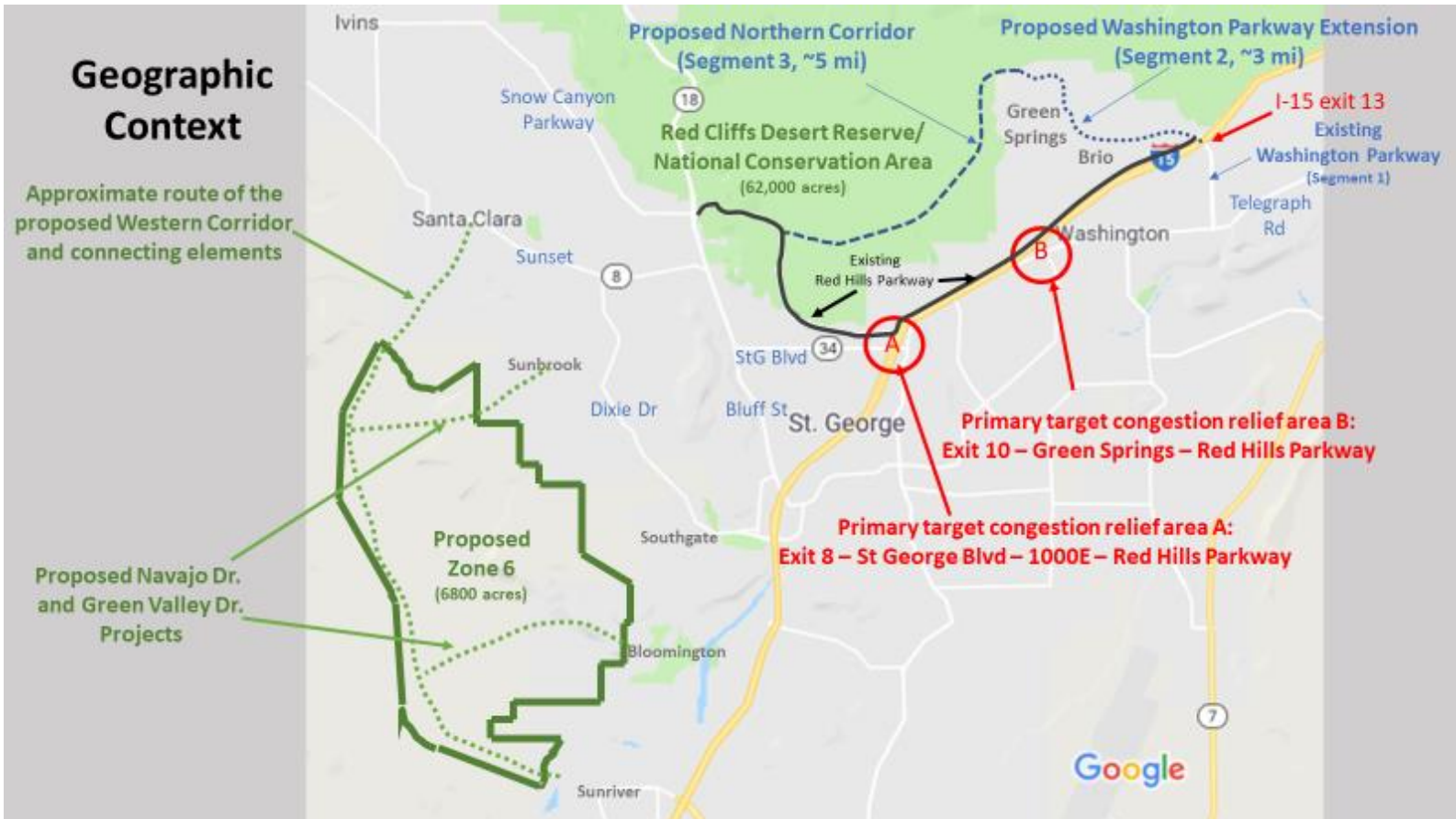
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## 1. The Analysis

### 1.1. Northern Corridor Highway Geographic Context

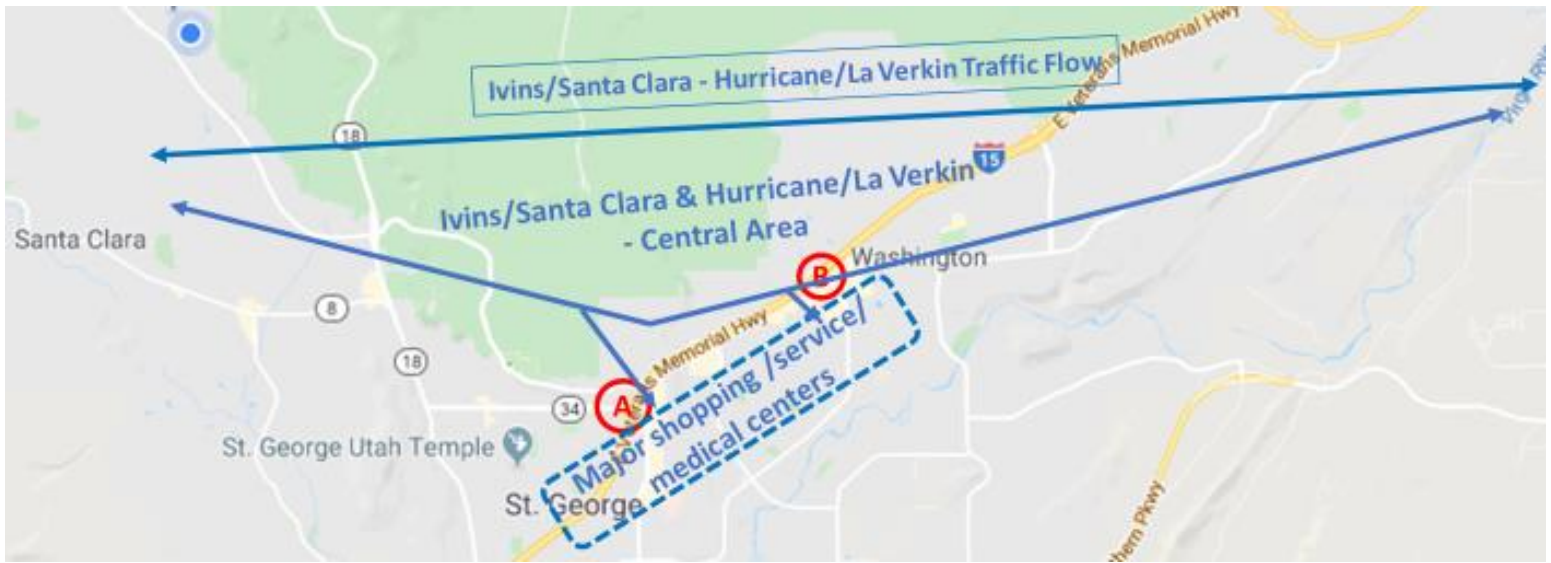
The map below provides the geographic context for the primary projected traffic congestion areas, the Northern Corridor Highway (NCH) proposed as a solution to the congestion, its proposed Zone 6 mitigation, with the highways planned in that proposed mitigation area.



Reviewing this graphic – and the proposed Northern Corridor Highway together with the existing Red Hills Parkway – calls into question the veracity of the conclusions of the transportation model undergirding the NCH. First, the NCH is roughly parallel to and performs the same function as the existing Red Hills Parkway (RHP). And, the NCH from I-15 exit 13 to Bluffs/SR18 runs about 9.5 miles, has a series of curves, and travels through residential neighborhoods. The RHP is roughly 8.3 miles with fewer curves. The NCH would intersect RHP 1.5 miles east of Bluff/SR18.

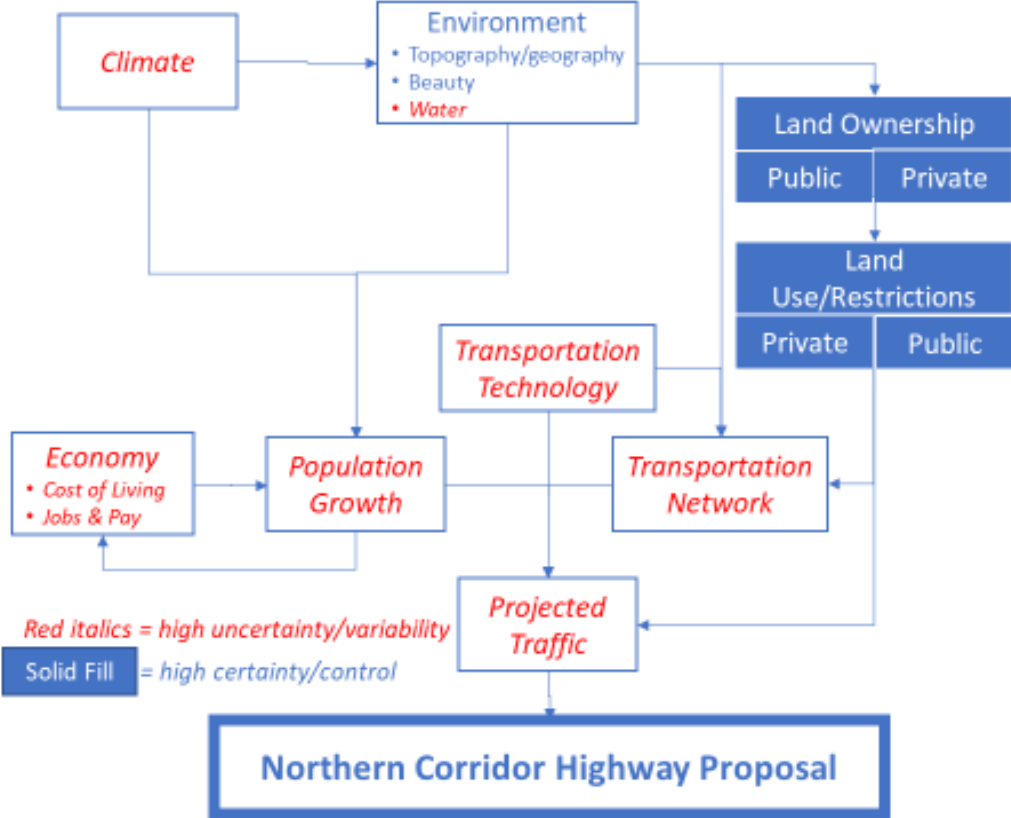
The RHP currently has no traffic obstructions for the 3.5 miles between 1000E (congestion area A), save an east-bound light that is rarely red, with speed limits of 40 and 50 mph. The NCH will have slow speed limits through Green Springs, perhaps with a traffic light or stop sign, and another traffic light or stop sign at Cottonwood Road at about the halfway point. A traffic light would be added to both roads at their intersection

Finally, Congestion Areas A and B (above) appear to be caused by traffic moving east-west and by traffic moving east-south and west-south, as depicted below.



**1.2. Context for Derivation of the Northern Corridor Highway Proposal**

The figure below describes the context for the NCH proposal. The bottom of the chart states the obvious: that the NCH proposal is derived from a transportation model that indicates projected traffic and congestion points. Utah Department of Transportation and Washington County state that the NCH is the only solution that will solve the congestion, and makes that statement with high enough confidence to warrant the expense of the National Environmental Policy Act (NEPA) process at this time. Our contention is that it is not the only solution, that indeed it does not solve the problem, that the conditions upon which the solution is based are highly uncertain, and that such a solution is not needed anytime soon. The following sections will develop this case.



The *projected traffic* upon which the proposed NCH is based is a function of the 4 variables: the *population*, *transportation technology*, the **transportation network**, and the **land use/land use restrictions** that are assumed or anticipated or planned to exist at a certain point in time.

*Population* growth is highly inter-dependent on the *economy*: the one will follow the other. However, population growth is directly and highly dependent upon the *climate* and the **natural environment**, perhaps more so on the climate and the environment, especially since the climate effects *water* supply and demand. If it weren't for the sunny and relatively moderate climate and for the natural environment with its amazing topography and beauty, and its adequate water supply, this would not be an attractive place to live and the population would not grow. There is, however, a high probability that the climate is changing in a manner that will make this area less desirable in terms of both temperature and water supply/demand (see [Udall Colorado Plateau](#)

[Climate Change, Davies Colorado Plateau Climate Change](#)) This makes projected population growth quite uncertain.

**Transportation technology** is changing rapidly, from the perspective of fuels, automated driving, and traffic control which will enable faster and more efficient traffic movement. The constraints of high population densities and the limitation of surface roads will generally drive different modes of transportation than the single-occupant vehicles dominating traffic today. It is highly unlikely that the causes of today's traffic congestion will be tomorrow's problem.

The **transportation network**, which today is surface roads, is driven by **transportation technology** (already shown to be highly uncertain), and by **topography** and **land use/restrictions**. **Land use and use restrictions** have two impacts on the transportation network: they define what sort of growth can happen where, which drives where people live, work, shop, etc., as well as where roads may be placed. Private land use/restrictions are much more controllable than public land use/restrictions in that local government has control of them. The application for the NCH reflects local government's position that it would rather try to change public land use/restrictions than private ones, even though it has complete control of private ones, and could solve the perceived problem within its own domain of control, if it wished.

## 1.2 The uncertainty

**The uncertainty of the factors informing the transportation model, as discussed above, must be examined.** NCH proponents must justify the certain damage to the habitat protected by the Habitat Conservation Plan (HCP) and National Conservation Area (NCA) caused by a highway to be built in the distant future having uncertain utility considering the uncertainty of population growth, transportation technology and related network requirements, in light of the ability of local government to significantly impact projected traffic with land use planned to reduce congestion.

NCH proponents must determine to what degree the projected traffic congestion can be alleviated by changes in land use designations throughout the county. BLM may argue that land use planning and smart growth are outside the scope of this NEPA analysis because BLM has no authority over zoning and land use on private lands. However, the county and other municipalities that sign on and benefit from the HCP do have this zoning and land use authority. We argue that since the county is behind the UDOT NCH right-of-way application, it would be disingenuous for them to say that its future land use and zoning decisions are not relevant as part of a comprehensive transportation analysis. The county and cities clearly either make traffic congestion better or worse based on their cumulative zoning and land use decisions. For example, the density of different designated zoning districts, and the number of lots approved in subdivision plats, obviously affects the amount of traffic that would be generated at those locations. If the county and cities choose to continue to allow endless sprawl development, should they be rewarded by letting them harm an NCA and threatened species?

## 1.3. Criteria for the Northern Corridor Highway Evaluation

In viewing the simulation of the projected traffic congestion shared at the BLM public scoping meeting on December 17, 2019, the difference between the two versions with and without the NCH does not appear to be great. Since all documentation requests about the modeling and

simulation have been refused, we have no data about the conditions under which the simulation was executed or the results of the simulation, such as:

- Time: month, day, time
- Land use, and logic driving vehicle trips
- Traffic flow limitations (speeds, distances between vehicles, traffic signal timing, etc.)
- Definition of “failed’ intersections (vehicles entering >vehicles exiting) based on duration of failure and duration of wait
- Planned improvements included/excluded from the model

There was also no data presented concerning what results were considered acceptable/unacceptable or the criteria used to make that judgment, or comparisons to other cities. It’s possible that worst conditions were chosen for critical parameters, giving the simulation a worst case rather than an average case condition.

#### **1.4. The following Evaluations are Necessary:**

1. Determine reasonableness and accuracy of the data basis for the traffic modeling/simulation used to determine the value of the NCH.
2. Verify the criteria and data used to determine the acceptability/unacceptability of congestion areas/intersections, including comparisons to other cities with similar congestion.
3. Verify the economic impact of potential future congestion with and without the NCH.

#### **1.5. Limitations of the DMPO Transportation Demand Modeling**

Having reviewed and formally commented on the Dixie Metropolitan Planning Organization (DMPO) 2019-2050 Regional Transportation Plan (RTP), we believe that it has one predominant limitation.<sup>1</sup> In short, the conclusions drawn from the RTP to justify building the proposed NCH/Washington Parkway through the Red Cliffs National Conservation Area (RCNCA) are not adequate for the purposes of NEPA. Based on our review of the RTP we believe that it cannot be used to form a valid comparison between a future transportation plan that includes the proposed Northern Corridor Highway in the RCNCA and one which does not.

If UDOT intends to use the future-year modeling scenarios presented in the RTP for the quantitative analysis needed to determine the necessity of building the proposed highway, we contend that the analysis will be flawed for the following reason: The transportation demand modeling that was done for the 2019-2050 RTP did not actually model a scenario where major improvements to the transportation network were included *without* the inclusion of the new highway segment through the RCNCA.

We believe that it is the BLM’s responsibility to require that an additional future-year scenario be developed and modeled so that the DEIS can evaluate at least three future transportation scenarios; a Build, a No-Build and a No-Action Alternative. The 2019-2050 RTP, in effect, only evaluates two of those alternatives: Build and No-Action. The RTP has a “2050 Build” scenario which models a transportation system in 2050 with investments of two billion dollars being made over a thirty-year period. Of that \$2 Billion, \$150 Million is included for the NCH/Washington Parkway in the RCNCA.

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<sup>1</sup> <https://conserveswu.org/wp-content/uploads/DMPO-comments-RTP-1.pdf>

The RTP “2050 No-Build” scenario is actually a “No-Action” scenario because over that same thirty-year time horizon no investment whatsoever is made in the transportation network. Comparisons of congestion are then made between a system with two billion dollars of investment and one with no investment whatsoever. What is needed for a true comparison of transportation system performance is a third scenario: A ‘2050 No-Northern Corridor Highway’ alternative. We think it is possible that a range of other network improvements which do not include a new highway through the RCNCA would be preferable to the current UDOT proposal.

In discussions between CSU and DMPO over a period of several years, we have sought to understand their concerns for a transportation future that includes strong population and economic growth. As a result of those discussions, CSU has developed a package of possible transportation alternatives in an attempt to address the DMPO’s top concerns. They have been conveyed to DMPO through a number of forums and we included a short discussion of them in our formal comments on the draft 2019-2050 RTP. A full discussion of those alternatives can be found in the Community Alternatives section of these scoping comments.

Our proposals attempt to:

1. Strike a balance between the need to move people and respect for the environment.
2. Abide by and honor the existing HCP agreement and 2009 legislation that protect tortoise habitat and open space in the NCA and quality of life in the surrounding communities.
3. Seek to encourage a long-term plan that is based on the Vision Dixie Smart Growth Principals through new and innovative transit and multi-model projects and to encourage elements of urban development that goes hand in hand with mobility options other than the automobile.

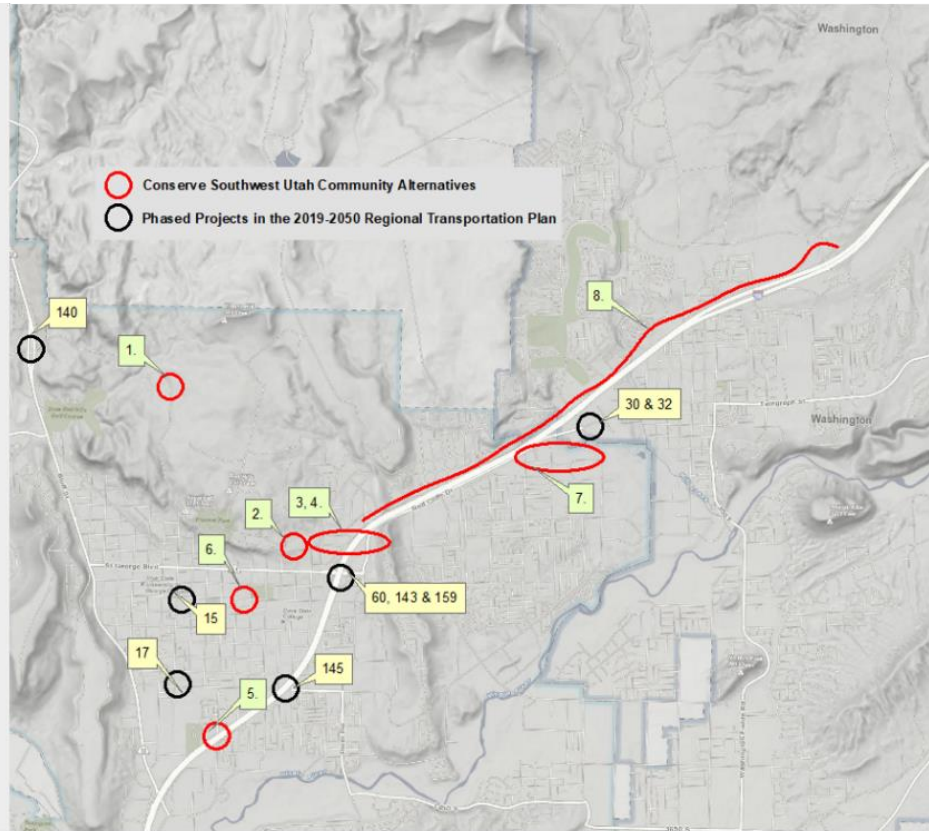
The figure below presents an example of how UDOT and its modeling contractor could begin to scope out a third scenario, as described above, for modeling. Including this new scenario would allow UDOT to provide BLM and the public with a quantitative comparison between a plan that includes a new section of highway through the RCNCA and one that does not. Figure 2 shows a general overview of the CSU Community Alternative proposals for a range of transit projects that could also be a part of a new '2050 No-Washington Parkway/Northern Corridor' modeling scenario.

**Projects suggested in CSU's Transportation Alternatives\***

1. Look in detail at the potential to widen the existing Red Hills Parkway from the current four lanes in lieu of the Washington Parkway/Northern Corridor construction
2. An efficient intersection at 900 East and Red Hills Parkway
3. New intersection and ramp at I15 north of 1000 East
4. Flyover on/off ramps to I15 at St. George Blvd
5. I15 freeway underpass at 400 East
6. Downtown 1-way loop
7. Freeway underpass at 2450 East, similar to the Red Hills Parkway underpass, along with street widening and intersection work for better flow in the commercial area
8. Widen the Red Hills Parkway frontage road from 1400 East to Exit 13 to the maximum extent possible

**Projects selected from DMPO Regional Transportation Plan\*\***

15. 100 South, Widen from 700 East to Bluff St
17. 700 South, Widen from 700 East to Bluff St
30. Green Springs and Telegraph Intersection Improvements
32. Wal-Mart / Home Depot Connection between Washington & St. George
60. 100 South Underpass at I-15 in St. George
140. Snow Canyon Parkway- Widen to 7-lane section from 2000 N to SR-18
143. SG Blvd/Red Cliffs Dr - Intersection improvements
145. I-15 - Install interchange at 700 South
159. I-15 MP 8 Industrial Road direct connect

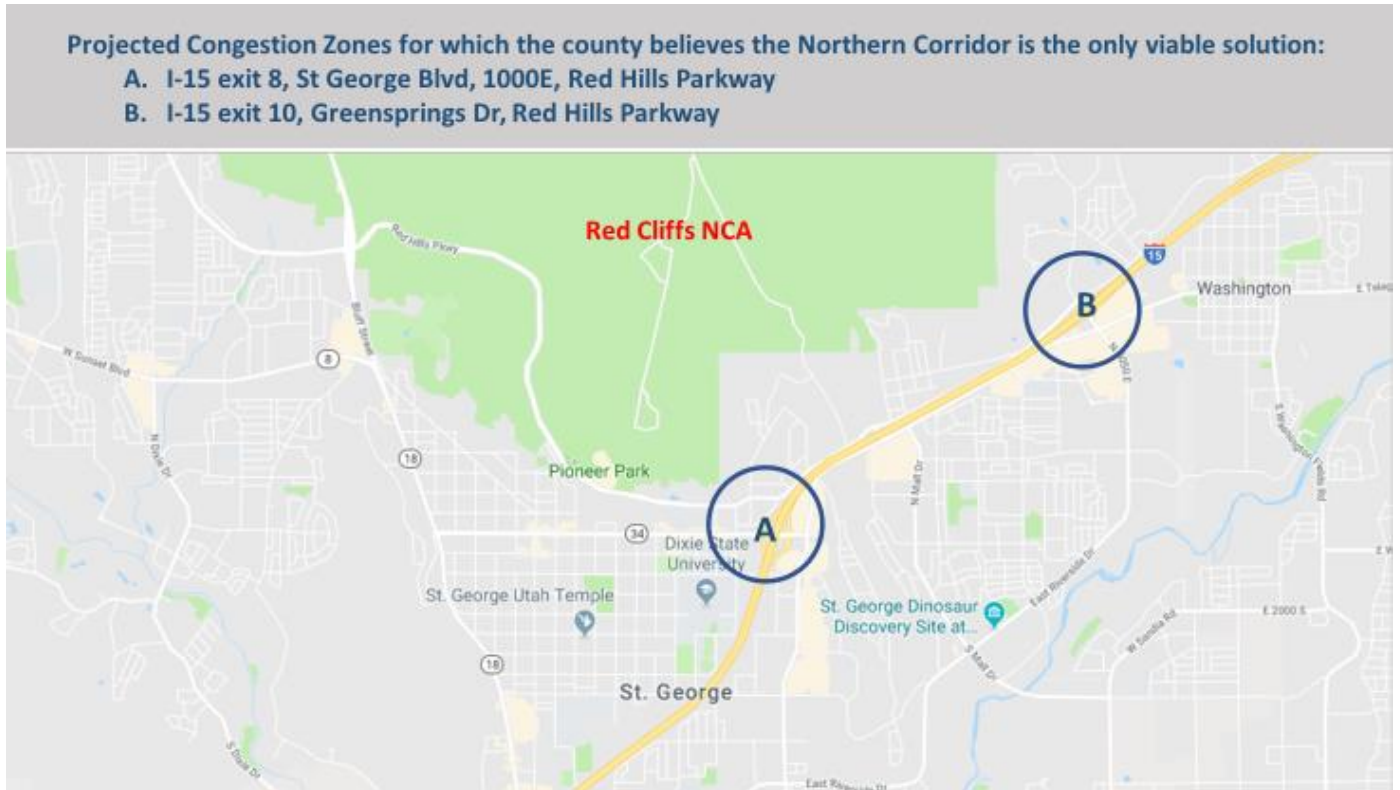




## 2. The Community Transportation Alternatives

Note that some updates to this paper have occurred since the alternatives were submitted for consideration by the BLM in the Draft Environmental Impact Statement for the Northern Corridor Highway. The order/alternative numbers have changes for some of the alternatives.

There are several alternatives to the Northern Corridor Highway that would reduce the projected traffic congestion. There are two primary projected Zones as depicted in the map below.



Projected congestion in these two Zones is suggested by the applicant to be caused by traffic attempting movement in these two scenarios:

1. East-west along the northern side of the metropolitan area
2. East and the west heading south into the center of town.

This makes sense as there are few ways to get over/under I-15 to access the main center for jobs, businesses, shopping and services south of I-15. As shown in the maps, Red Hills Parkway, the existing highway through the NCA's prime habitat, is the shortest and most economical route to perform these functions. We propose a set of solutions improving this existing highway and other roadways as the most effective and efficient solutions to the projected congestion.

### **Alternative 1: Red Hills Flyover Connection**

This alternative scenario 1 by connecting Red Hills Parkway north-bound directly to I-15 north-bound, and I-15 south-bound directly to Red Hills Parkway south-bound, enabling very efficient movement of east-west traffic. There are two options:

Option 1: a classic flyover viaduct, shooting over/adjacent to businesses south of Red Hills Parkway between N100E and I-15. This would disturb or cause relocation of a small number of businesses.



Option 2: a viaduct over the existing Red Hills Parkway and a shorter flyover causing less business disturbance or relocation.

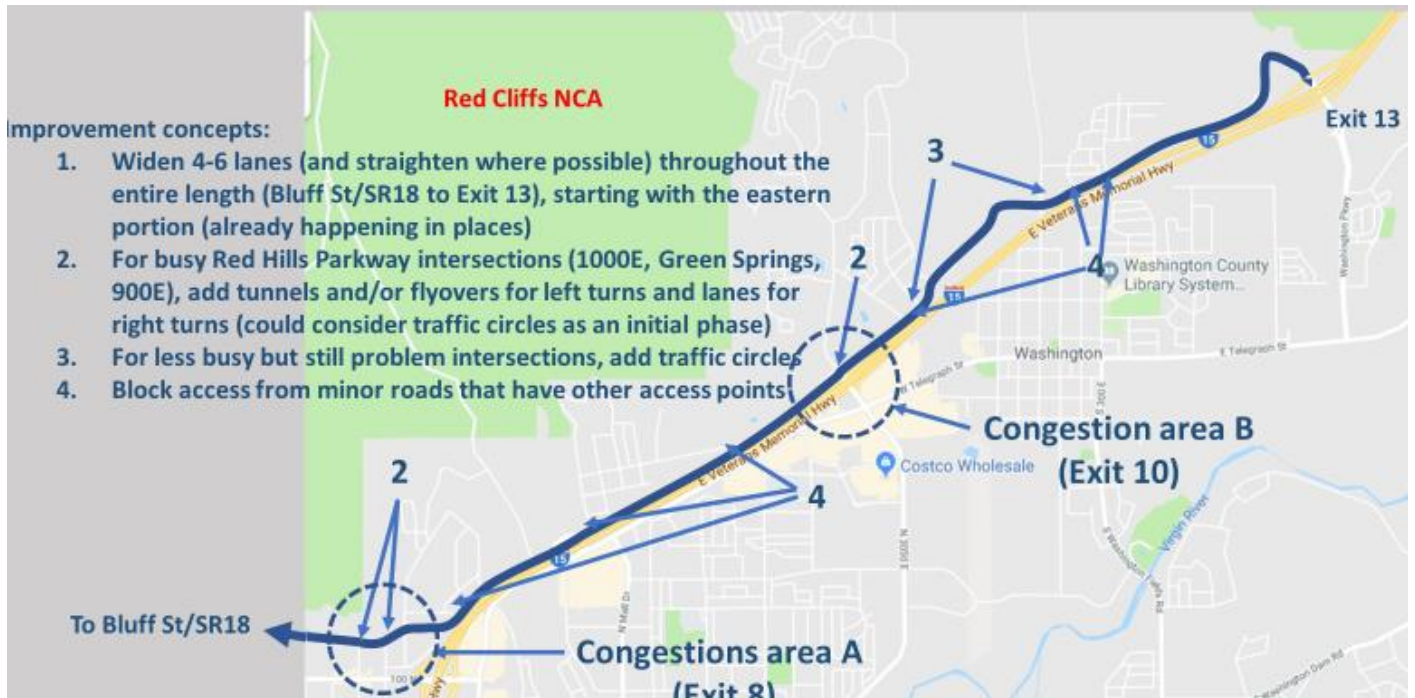


**Alternative 2: Red Hills Parkway Widening and Intersection (between I-15 exits 8 and 13)**

This alternative addresses both scenarios by widening and straightening the road throughout its length, adding traffic circles at busy intersections and eventually improving throughput with flyovers/tunnels to ease left and right turns.

Red Hills Parkway (known as Buena Vista on the northern end) essentially parallels the proposed Northern Corridor Highway. Maximization of its throughput would minimize or eliminate the need for the Northern Corridor. Such an action has been made more difficult by the lack of

planning for traffic caused by sprawling development, but limiting side-road access and maximizing the utility of major intersections would allow this road to perform the function of the Northern Corridor.



### Alternative 3: A More “Porous” I-15

This would add underpasses to move traffic North-South around congestion areas, addressing both scenarios by removing traffic intending southward movement to the other side of I-15 from the main congestion areas. Much of the congestion around Areas A and B is due to traffic being forced through them in order to move cars back and forth across I-15, causing unnecessary chock points at the congested intersections. By allowing one or more optional avenues for north-south traffic, congestion would be relieved.

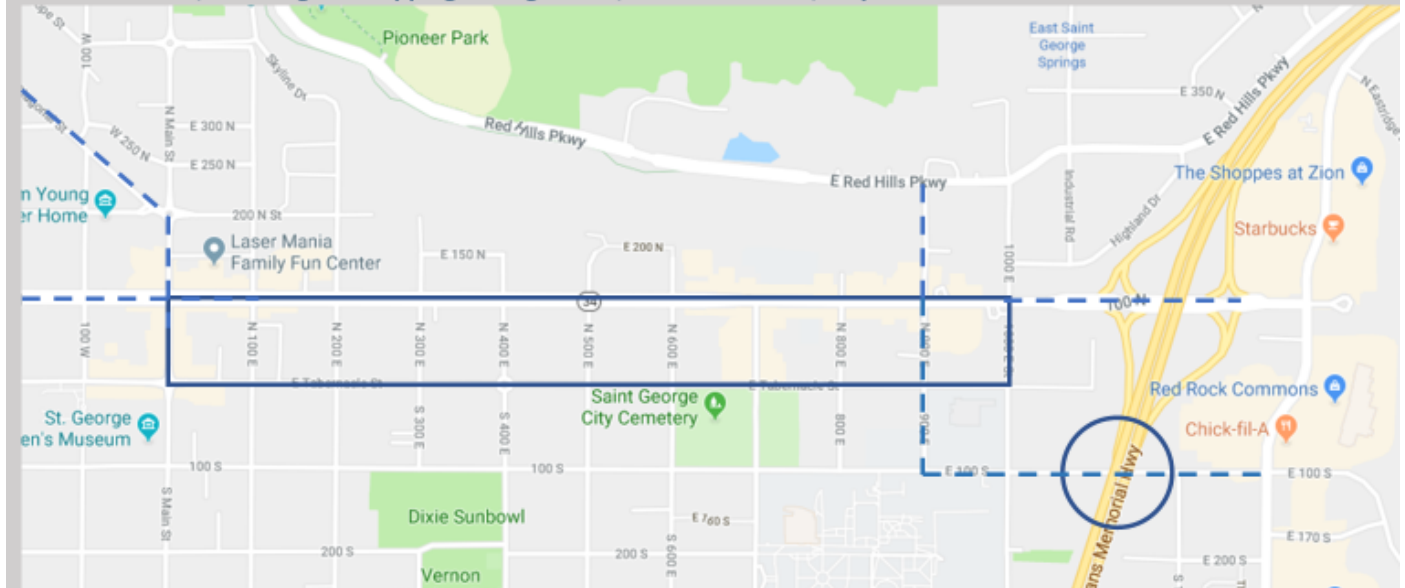


**Alternative 4: Downtown Loop**

Vision Dixie principles indicate that growth should be up rather than out, and that a core shopping/business area should be developed in a manner that enable traffic flow and alternative active modes of transportation (e.g., walking, bicycling). Such a core would be facilitated by a “efficient” traffic loop in the downtown area (e.g., timed traffic signals and “free” turning (e.g., flashing yellow left turns rather than left turns only allowed on green arrow lights)), with efficient entrance/exit points to/from adjacent arterials and shopping/service/medical centers. See the map below for the concept.

**One-way synchronized (smart/timed traffic lights) loop in downtown St George, onto I-15 and other arterials**

- Improved flow and increased business access in downtown core
- Couple with improved Vision Dixie implementation to form concentrated active transportation downtown
- Provide quick interface between I-15/River Road and St George Blvd
- Smart, timed lights: stopping at 1 light max, traffic detection, stop-avoidance when no conflicts exist



**Alternative 5: Implement Technological Improvements**

Automated Traffic Control is a fast-improving technology increasing the efficiency of traffic movement and reducing traffic congestion through an integrated set of traffic sensors, traffic signal controllers and computing capability. Current traffic control in the Greater St. George metropolitan area appears to use little of this technology, as evidenced by poorly timed traffic signals and poor traffic movement through main arterial routes. The potential of self-driving vehicles over the next 20-40 years could also have a major impact on traffic flow by enabling speed and distance-between-vehicle controls. The use of these technologies should be considered in projecting traffic flow. Tunnels under traffic congestion Zones are being implemented in many cities as boring, or tunneling, technology advances.

The NCH modeling did not account for any of these likely technology improvements.

### **Alternative 6: Implement Vision Dixie (Congestion Reduction Land Use Principles)**

In a reaction to the proposed 2006 Washington County Lands Bill sponsored by the county and Utah's congressional delegation that would have forced the construction of the Northern Corridor Highway, the citizens of the county lodged a protest that resulted in not only the 2009 Omnibus Public Lands Bill that established additional protections against the highway, but also a growth and traffic visioning process named [Vision Dixie](#). The outcome of this Vision Dixie process was a set of principles to guide future land use decision-making in Washington County. These principles included protecting public lands, concentrating growth to avoid sprawl, and addressing transportation planning integrally with growth planning. Vision Dixie demonstrated a disconnect between the citizens and their elected representatives concerning growth,, traffic planning, and protection of our public lands. The disconnect has become further demonstrated by the lack of implementation planning by our county and municipal governments. Growth has sprawled, transportation corridors have not been managed, and traffic congestion is resulting. This is a self-inflicted wound. Land use issues that are causing traffic congestion must be addressed.

The county and local municipalities should create, review with the public, verify satisfaction of principles, and execute a Vision Dixie Implementation Plan. Such a plan would define a "program" for implementation, describing the strategy and concepts for the implementation, and identifying the projects and their sequencing and budgets for implementation; and then define and execute the specific projects (tasks, schedules, responsibilities, budgets). This could be done for each government or in an integrated, unified way covering the entire county. Such a plan and execution would prevent or at least better manage the growth issues that are exacerbating traffic problems throughout the county.

Further components of a transportation plan grounded in Vision Dixie Smart Growth principles might include the following:

### **Alternative 7: Reimagine Downtown - St. George Arts & Entertainment District**

The City View and Joule Plaza mixed use developments have changed the face of downtown St. George. Similar projects with higher densities on smaller footprints are likely to become a trend as the center of the city redevelops. Properties east of 200 East and north of St. George Boulevard are prime candidates for this type of mid-rise mixed-use redevelopment. Imagine a vibrant, **walkable** arts and entertainment district anchored by a performance hall located at the north end of 400 East. Circulator trolleys carry people between downtown and the Dixie Center via Main Street to 200 North with an extension to 300 East. The loop continues south on 400 East, over or under I-15, to connect with Riverside Drive, returning to the hotels near the Dixie Center via 270 East. Large downtown day-use parking lots near the circulator route are now park and ride lots for arts patrons going to the performance hall, thus minimizing the need for parking in the arts and entertainment district.

### **Alternative 8: Move People rather than Cars**

Enable workable transit options within and across the metro area such as

- East-West transit routes between Ivins/Santa Clara and Hurricane/Laverkin
- Tourist routes between lodging and major attractions (e.g., Zion NP, Snow Canyon SP, Red Cliffs NCA)

- Integrated mass transit planning to consider long-term options such as light rail
- Consider long-term improved transit flows with dedicated lanes.
- Walkable/bikeable city
- Circulator Trolleys for major shopping and employment centers

Imagine an east-west circulator trolley loop connecting the downtown circulator with the Dixie State University campus, the Dixie Regional Medical Center campus and shopping at the Zion Outlet stores and the Red Hills Mall. Suntran bus service will be expanded to serve all St. George Neighborhoods and give K-12 students an option for riding to school with free or reduced fare passes if the live too close to ride school buses. All Suntran stops will have shade, seating, trash receptacles, and regular maintenance to keep them appealing. Major institutions and businesses will follow DSU's lead with student transit passes and provide free or reduced fare passes to employees who ride the bus or participate in vanpools. DSU campus shuttles running between the main campus and the Taylor Health Science Building will reduce the need for student parking on Medical Center Drive when the Taylor Building lot is full. This will minimize the potential for crashes posed by parked cars blocking the view of drivers exiting DRMC parking lots.

### Alternative 9: I-15 Thru-Traffic Bypass

There is considerable I-15 traffic moving from Salt Lake City and points north and east to Las Vegas and points south and west. This traffic adds to the overall congestion in the metropolitan area and to air, noise, invasive species pollution.



It is a common practice of major cities to have a bypass freeway. The Southern Parkway was conceived in part to serve this purpose.

### **Alternative 10: Industrial Park Reuse**

Movement of the Industrial Park to a better location would reduce traffic, including pile ups caused by trucks, at Exits 8 and 10. The current location of the industrial park at the east end of St. George Boulevard made sense when Highway 91 was the main route between Salt Lake City and Southern California. Industrial and distribution uses at this location are increasingly incompatible with the burgeoning residential and commercial development on Cottonwood Springs Road and Red Hills Parkway near Middleton. Incentives could be given for industrial and distribution businesses to relocate to more appropriate locations such as the Fort Pierce Industrial Park or near Desert Color where they would have access to I-15 from the Southern Parkway rather than contributing to downtown traffic congestion. Part of the former industrial park could provide space for expansion of the landlocked DSU campus and more student housing, with campus shuttle service between the proposed DSU north campus, the main campus, and the Health Sciences building. St. George City could use a portion of the former industrial site to expand its Public Works yards to the east with an interior road linking the existing yards to the new ones.

### **Alternative 11: Human Adaptation**

We humans have imaginative ways to adapt to our environment. Technology enables some of these adaptations, such as shopping from home and associated delivery services (including future drone services) and working from home. These technologies will likely expand in their use in the future, having significant traffic-reduction impacts. The Covid-19 pandemic has accelerated these adaptations.

Certainly, though, there will still be traffic in the foreseeable future. Many cities have rush-hour traffic, and humans have adapted by widening the rush-hour window, smoothing the traffic spike.

Traffic modeling for the NCH has considered none of these adaptations. The results model a theoretical worst-case that will not be reflected in reality. Humans adapt..