



**Washington County at a Crossroads:
An Analysis of the Proposed Northern Corridor
Highway Project in Southwest Utah**

**SPECK
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Conserve
Southwest
Utah

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Introduction and Overview

Speck Dempsey was commissioned by Conserve Southwest Utah, a St. George-based 501c3 organization, to conduct a peer review of the 2024 updated traffic analysis created in support of the Northern Corridor Supplemental Environmental Impact Statement (SEIS) process and provide other comments about the expected impacts of the proposed Northern Corridor Highway project in Washington County.

This report paints the picture of a region at a crossroads. Washington County is one of the fastest growing counties in the country, with residents and businesses drawn to the area's natural beauty, bountiful recreational opportunities, warm weather, moderate housing prices, and competitive business environment. The county's population is expected to double between 2020 and 2050.

But the region's growth has already strained existing resources. From the electric grid, to schools and other educational infrastructure, to health-care facilities, growth brings the need for change and new approaches. The region's road network has not been immune to these challenges. Residents are navigating longer commutes and occasionally experiencing levels of traffic congestion that were unheard of in Washington County a decade ago.

In response to projected regional growth, some have advocated for the construction of a Northern Corridor Highway through protected conservation land. Proponents of the project vow that the new highway will deliver congestion relief, and they suggest that failing to construct the Northern Corridor would limit future economic activity.

But the promise that new roadway capacity will solve congestion goes against decades of observed outcomes in American communities from coast to coast, from large metroplexes like Los Angeles, Dallas, and Atlanta, to smaller regions in the intermountain west similar to Washington County, including Colorado Springs and Boise. In each of these places, governments spent hundreds of millions – or billions – of dollars on building new roads and widening existing ones, adding roadway capacity at rates that outpaced population growth – only to see regional traffic congestion *increase*, not decrease.

Washington County has a choice to make. Should it continue to grow in a sprawling, economically inefficient, auto-dependent pattern that requires vast swaths of land and robs current and future generations of reasonable transportation choices? Or should it pursue a different path, one that fosters economic prosperity and provides transportation options, while respecting the natural splendor that makes the region so uniquely special and attractive in the first place?

Before the region moves ahead with a multi-hundred-million-dollar highway project that despoils a beloved local public resource, it owes taxpayers and residents a full consideration of the options, including viable alternatives that achieve many of the stated goals of the Northern Corridor Highway proposal without infringing upon conservation land.

Speck Dempsey is pleased to present this analysis as a contribution to the ongoing, robust conversation about Washington County's future.

Part I: Report Background and Materials

Who We Are

Speck Dempsey is a city planning, urban design, and transportation policy firm specializing in land-use planning, walkable places, and traditional neighborhood design and development. Through superior planning and design, we foster quality of life and economic vibrancy for residents, businesses, visitors, and generations to come. We partner with public-sector clients, non-profits, and private developers around the country and the globe.

We are proud of our proven track record in Utah. Our firm is leading the planning effort for the mixed-use Utah City development in Vineyard, Utah, one of the fastest growing municipalities in the country. When fully built out, Utah City will include more than 17 million square feet of combined mixed-use space, including living, shopping, dining, entertainment and hospitality. Anchors of the project already include Vineyard Station, which opened in August 2022, and a recently announced Huntsman Cancer Institute Campus, a comprehensive research center that will provide over 150 patient beds and is expected to result in thousands of high-paying jobs on-site. We believe in Utah's growth and economic future and are proud to support it through thoughtful city planning. Our founding

partners are Jeff Speck, author of *Walkable City*, the best-selling urban planning book of the 21st century, and Chris Dempsey, former Assistant Secretary of Transportation for the Commonwealth of Massachusetts. Jeff Speck also co-authored, along with architect Andres Duany and Mike Lydon, the *Smart Growth Manual*, which provides cities and towns with technical tools to create robust and resilient cities and towns through the built environment.

Why We Are Working with Conserve Southwest Utah

We are lending our expertise to support Conserve Southwest Utah in its active contributions to the ongoing debate and public process concerning the Northern Corridor Highway proposal. Environmental considerations are central to this debate and to the administrative and political decisions facing the federal Bureau of Land Management and local elected leaders. We share Conserve Southwest Utah's perspective on the gravity of this proposal and the harm that it would cause to a rich natural environment, which must be protected and conserved with great care. But there are also transportation, economic, and land-use dimensions to the debate that transcend legal and environmental considerations relating to protected habitat and federal powers. We believe that a more holistic review of the traffic arguments and analysis that underlie the Northern Corridor Highway proposal will illuminate the important stakes of this decision for the future of Washington County.

What We Analyzed

Speck Dempsey's analysis included a review of the following documents:

- (1) Northern Corridor Traffic Analysis for BLM SEIS Memorandum, dated June 14, 2024, produced by Horrocks Traffic Group
- (2) Preliminary Northern Corridor Cost Estimates, dated June 19, 2024, produced by Horrocks Engineering Group
- (3) Dixie Travel Demand Model: Calibration and Validation Report prepared by Cambridge Systematics with Horrocks, dated October 8, 2023

Part II: Analysis - Traffic and Congestion

How Traffic Works

Perhaps the most important dynamic in transportation policy in the United States over the last century, especially after World War II, was the dramatic increase in highway infrastructure and the accompanying increase in vehicle-miles traveled (VMT) in private automobiles. Utah has not been immune to this trend, and the state's recent growth has led to more driving, more congestion, more frustration for drivers, and more air pollution. In 1982, Utahns drove 7,012 miles per year, per capita. By 2013, that number had increased to 9,319 miles per year. In 2022, it was 10,149 miles per year. This staggering 45 percent increase on a per capita basis from 1982 to 2022 is even more stark when factoring in Utah's roughly doubling of population in that period of time. In 1982, Utahns drove roughly 30 million miles each day. In 2022, they drove approximately 94 million miles each day. Put another way: over forty years, the population of Utah roughly *doubled*, but the amount of driving roughly *tripled*.

Traffic engineers and road builders often pitch additional highway and road capacity as the solution to the observed increase in congestion that comes with increased VMT. While additional road capacity may provide some brief, short-term relief, it rarely solves congestion in the long term and can just as often make traffic worse. This perhaps counter-intuitive outcome results from a concept known as induced demand and has been observed in so many different places across so many regions that economists often deem it the "Iron Law of Congestion."

The temporary congestion relief provided by a roadway expansion induces more people to drive more miles and to take trips they were not taking before the road network was expanded. New roadway capacity also encourages auto-dependent development patterns, creating additional new trips that did not previously exist. These new trips quickly fill up the new capacity until the road returns to the pre-expansion equilibrium.

Perhaps the most conspicuous example of this dynamic is in Southern California, where for decades planners promised that "one more freeway" or "one more lane" would fix the region's traffic problem, only to see those new lanes become just as congested as the old ones. The Los Angeles region

regularly ranks as among the most congested in the world despite its ample highway infrastructure.

On occasion, roadway expansions induce so much new driving that the congestion problem gets *worse*. For example, in Houston in 2004, the Katy Freeway was one of the worst traffic bottlenecks in the nation. To combat the congestion, the Texas Department of Transportation spent over \$2.8 billion dollars expanding the highway to accommodate 23 lanes of traffic. The project was completed in October 2008. According to the Houston Chronicle, a 30-mile rush-hour trip on the freeway prior to the expansion took 52 minutes. Six years after the project was completed, in 2014, the same trip took 70 minutes. The roadway expansion was intended to reduce travel times, but instead it did the opposite.

Induced demand is not limited to large cities like Los Angeles or Houston. For example, in 1990, Boise, Idaho, had a metropolitan population of 319,596. Home to a low-tax environment and exceptional natural resources and beauty, the region grew quickly, more than doubling in population to 764,718 people by the 2020 census. But while population has increased by 117 percent, congestion has increased by 446 percent, according to an analysis by Transportation for America. This congestion has occurred despite -- and really because of -- a concerted highway expansion effort by the region's transportation planners, which increased lane-miles in the region by 141 percent in the same period of time. Road capacity grew faster than population, but traffic got worse. So what happened? A closer look at the population increase in Boise and the larger metro area shows that the largest population increases have occurred outside the urban core. New road capacity has contributed to sprawling development, with more people now living further from the places they need to go. In Boise, like in Los Angeles and Houston, roadway capacity expansion has triggered more driving, a declining quality of life, and a land- and resource-intensive development pattern that threatens the region's environmental and economic strengths.

Traffic Modeling

Failure to properly account for induced demand is an all-too-common and prevalent flaw of traditional traffic engineering analyses, causing these studies to fail time and time again when pre-project estimates are compared with the actual results. As stated by Dr. David Hartgen, Professor of Transportation at UNC Charlotte and Member of the Transportation Research Board, “The greatest knowledge gap in US travel demand modeling is the unknown accuracy of US urban road traffic forecasts.”

Traditional approaches to traffic modeling don't just fail to properly account for changes to human behavior. They also provide a false sense of precision in their analysis, when, in fact, small changes to assumptions can have large impacts on projected outcomes. One reason for this is the non-linear nature of traffic delays. An empty road can accommodate more vehicles without additional delay for those vehicles, but as the road reaches its capacity, conflict between vehicles begins to arise. Add just a few too many cars at the wrong time and fast-moving traffic suddenly slows to a crawl; take just a few cars off the road at the right time and traffic speeds and throughput can both increase dramatically. A rough rule of thumb, endorsed by researchers at UCLA's Luskin School of Public Affairs, is that an additional 5 percent of vehicles at peak period can result in a 20 percent increase in traffic congestion. As far back as 1998, a University of Tokyo study determined that a 15 percent reduction in volumes at peak periods can reduce up to 80 percent of peak period congestion.

The implications of this non-linear dynamic for traffic modeling are important. If volume projections are off by just a few percentage points, they can elicit large changes in expected delays at key intersections or roadway segments. **No traffic model, no matter how advanced, can reasonably predict levels of congestion at particular intersections 25 years from now** -- there is far too much uncertainty about the future to provide anything approaching this level of precision when the results can change with just a handful of cars per hour.

Critiques of Dixie MPO's Traffic Modeling

The traffic projections produced by Horrocks for the Dixie MPO, which oversees transportation planning for urban and urbanizing areas of

Washington County, are a poor tool for evaluating the choices that face the region as it grows. Horrocks's approach to traffic modeling is conventional, following standard industry practice, but it relies on estimates that are entirely uncertain, provides a false sense of precision and accuracy, and cannot meaningfully distinguish between alternative outcomes decades into the future.

The Horrocks report is based on the pre-existing Dixie MPO Model, which predicts travel demand in Washington County in future decades, based primarily on estimates of where homes and jobs will be located. This information is then fed by Horrocks into VSSIM, a traffic flow simulation software package that is widely used in the transportation industry.

The results of the VISSIM model are estimates of congestion levels at specific intersections in the region. Horrocks uses a standard "level of service" (LOS) framework to describe this congestion. A LOS of "A" means free flow traffic, a LOS of "F" is heavily congested. It is important to note that a narrow focus on LOS serves to undermine well-functioning streets, which should never be seen as exclusively about moving vehicles. LOS C is a standard target for urban streets, and even then typically represents streets that are overbuilt.

As stated above, the Horrocks analysis relies on estimates that are entirely uncertain. For example, the Dixie MPO model that underlies Horrocks's analysis uses 2019 as a baseline for telecommuting rates, despite observed rates in 2023 being significantly higher than those estimates. The MPO Model predicts that the share of workers telecommuting in Washington County will decline from 10.4 percent in 2023 to 7.87 percent in 2028, only to rise again to 11.3 percent in 2050. Telecommuting reduces overall vehicles trips, especially in the morning and afternoon peak periods when commuters are most likely to be on the road (and that are the focus of the Horrocks model). These estimates, made in a period of substantial changes to commuting patterns and workplace arrangements, are hardly better than guesses, yet suggest a false sense of precision by including four digits of significance.

Moreover, the non-linear nature of traffic congestion means that changes in these assumptions of just a few percentage points can lead to radically

different conclusions about the amount of congestion on regional roadway infrastructure, especially far into the future.

Rather than accepting these assumptions as fact, a more thorough and comprehensive traffic analysis would estimate traffic impacts (or improvements) at a wider range of potential futures. What would congestion look like if 15 percent of workers telecommuted instead of just 11.3 percent? What if only 5 percent telecommuted, as was true pre-pandemic?

This scenario testing might find that proper regional planning and traffic-demand-management interventions such as encouraging flexible hours, telecommuting, or carpooling could have sustained congestion reduction benefits at far less cost to taxpayers and the environment than the Northern Corridor proposal. These analyses appear not to have been included in the study.

The Horrocks analysis predicts LOS for key intersections in the region under each of the six alternatives under consideration. These include:

- A “No Build” scenario in which the transportation network remains unchanged
- Three alignments of a Northern Corridor through conservation land, including the preferred, “Utah Department of Transportation (UDOT) Alignment”
- Changes to St. George Boulevard and 100 South to make them each one-way highways through downtown St. George, known as the Downtown Couplet
- Expansion of the Red Hills Parkway into a wider, higher-capacity road facility that would be called the Red Hills Parkway Expressway

Even if one were to take Horrocks’s Level of Service findings at face value (discounting well established understandings of induced demand) *and* were to place congestion reduction above other regional priorities such as economic growth or environmental conservation, **the Horrocks report suggests that the Northern Corridor proposal is not the best alternative. In fact, the report concludes that the Red Hills Parkway Expressway alternative performs better than the UDOT Alignment, when measured strictly on the expected performance of the regional traffic network.**

UDOT's preferred alternative would be expected to have six key intersections with Level of Service D or E in 2050 in the afternoon peak periods, while the Red Hills Parkway Expressway alternative would have just five intersections with Level of Service D or E. These alternatives are reviewed in more detail below.

Horrocks at least partially acknowledge the existence of induced demand and the well-known result of making it easier for people to drive: people drive *more*. In the Horrocks Traffic Group's Northern Corridor Traffic Analysis for BLM SEIS Memorandum, dated June 14, 2024, Horrocks states that each of the Northern Corridor project alternatives, including the UDOT Alignment through conservation land, "increase the overall VMT for Washington County. This is typical for roadway improvements as bottlenecks in the network are removed and people can travel longer distances in shorter amounts of time." But Horrocks fails to take that statement to its logical conclusion: that because of this induced demand congestion will quickly return back to its pre-expansion equilibrium. The firm also fails to acknowledge the essential interplay between transportation policy and land use. Adopting a strategy of road expansion doesn't just lead to more driving, it facilitates auto-oriented land-use patterns and sprawling development that put homes further away from jobs, retail, and services, locking in more vehicle trips and driving for decades to come.

Horrocks acknowledges that the Northern Corridor proposal will increase the amount of driving in Washington County. In fact, **it concludes that of all of the potential alternatives, UDOT's preferred roadway alignment leads to the *largest* increase in total driving in the county.** But this acknowledgment falls short of what is truly needed to understand the impacts of this proposed highway expansion: **a recognition by civic leaders that in a growing region like Washington County, accommodating more traffic only leads to more traffic.**

Challenging the Goal of "Solving" Congestion in Washington County

Nobody likes sitting in traffic. Advancing policies that reduce congestion, and providing people with more options to avoid congestion, are worthwhile public policy goals. But **the costs and inconvenience of**

congestion, and the resources and tradeoffs that are required for traditional congestion “solutions,” must be put into context and weighed against other public policy goals. Washington County’s own traffic consultant, Horrocks, acknowledges in its reports that *morning* “rush hour” traffic volumes in the region are so much less than *evening* peaks that they are not worth studying. In their words, “Daily counts collected using pneumatic tubes showed the AM peak hour traffic to be much lower than PM peak hour traffic. Therefore, only PM peak hour analysis was performed for the study.” It is neither uncommon nor unusual for a traffic study to focus on the times when traffic is “worst.” But the peak periods studied in this case -- from 4PM to 6PM on weekdays -- make up a small portion of the year, representing less than 6 percent of the hours in a year. Yet the conclusions Horrocks draws from studying just 6 percent of the hours are used to justify a proposal that proponents acknowledge will cost taxpayers more than \$200 million and that environmental advocates contend will irreparably damage a National Conservation Area. We believe that the Northern Corridor project will make congestion in the region worse, not better, but **even those who believe it will reduce congestion should question the value of that congestion reduction compared with the cost to taxpayers and the environment.**

Part III: Alternatives

Alternatives to the Northern Corridor Highway

The public process to-date has resulted in a set of alternatives to the UDOT Alignment, two of which also infringe on National Conservation Area land. This report will briefly comment on the three alternatives that do not violate important environmental laws and regulations:

- **The Downtown Couplet:** Proposed roadway capacity expansions on paired roadways east-west through downtown St. George, known as the Downtown Couplet, would be a mistake for the region, though for some different reasons than the proposed Northern Corridor. It is essential that downtown St. George remain the economic and cultural heart of Washington County. The city can only serve that role when its streets are a platform for supporting small business and economic

vitality – they must be a place to be, not just a place to drive through. The Downtown Couplet does the opposite, transforming important city streets into thoroughfares that prioritize moving vehicles above all other community goals. The economic and civic costs of the Downtown Couplet alternative are far too high, and it should be removed from further consideration.

- **Red Hills Parkway Expressway:** The Horrocks analysis of the 2050 PM Peak Hour Level of Service indicates that the Red Hills Parkway Expressway alternative provides a *better* Level of Service in 2050 in 11 out of the 15 study intersections when compared to the UDOT Alignment. The Red Hills Parkway Expressway does not cut through the heart of a National Conservation Area and performs well in Horrocks' traffic analysis. But engineers have only developed 10 percent of the conceptual design for this plan and acknowledge that significant unknowns remain, including on the project's total cost. Federal, state, and county entities involved in this project should require further investigation of this alternative in future steps of this process, though any highway expansion should be approached with the same caution and concern we are recommending for the Northern Corridor – roadway expansion is likely to be counterproductive to the region's long-term goals.
- **Terminate UDOT ROW:** Highway expansion proponents unfairly conflate termination of the UDOT proposal with a future that sees no action by the county to reduce congestion. That is, they assume that the county will not adopt policy changes or advance transportation and land-use alternatives. But **terminating the UDOT Alignment and making clear that highway development through the Red Cliffs NCA territory is not permissible will allow the region to move past this flawed concept to enable a more far-reaching conversation about future growth and the transportation strategies and approaches required to support that growth.** Washington County has many tools in its toolbox, especially when it comes to locating housing and jobs, and all of these tools should be explored.

Alternatives to Highway Expansion and Sprawl

Washington County doesn't just have to make a choice about the Northern Corridor project. It also has to decide whether it wants to proceed with a transportation and land-use strategy of highway expansion and traffic-inducing sprawl. If instead of growing in far-flung communities removed from jobs it encouraged traditional neighborhood development or "smart growth" in the county's regional core, it could promote economic development and vitality without the increases in traffic congestion it has observed in recent years.

Land-use policy and transportation policy are tightly linked. Highway expansions contribute to more sprawl. But auto-dependent sprawl also contributes to congestion by concentrating trips on arterial roads. Many suburban-style developments are planned in such a way that essentially all trips must be made by private vehicle, and all of those trips are served by just one or two intersections that provide access to the regional roadway network. In contrast, St. George's traditional grid pattern disperses trips, providing drivers with more options, while also shortening walking and biking distances to make non-auto trips more viable.

Encouraging more growth in St. George's downtown core is not just a tool for limiting traffic congestion -- it also aligns with the region's goals on land and water conservation. Sprawling development is resource intensive. Traditional neighborhood development, including infill in St. George's mature and emerging neighborhoods, is resource-efficient, maximizing the region's overall economic potential given natural limits on water and developable land. Residents of compact developments use less water on a per capita basis, and their neighborhoods have less stormwater runoff per unit of development because they have less impervious surface. Compact development also conserves water because it requires shorter pipes to serve a community, which reduces the amount of water lost to leaks.

Washington County is expected to grow by about 250,000 people between 2024 and 2060. If that growth were planned and encouraged to match the *existing* urban density of St. George, it will require 113 square miles of land. But if, instead, that growth matches the average *existing* densities of more sprawling communities in the county, it will require 323 or more square

miles of land. The difference between these two numbers is about the size of Zion National Park.

The Dixie MPO's own data reveals a fundamental driver of VMT and congestion in the region: the growing mismatch between the location of jobs and the location of housing. Addressing this mismatch with concerted efforts to locate housing near jobs would be a more effective and sustainable way to limit congestion in the region while supporting economic growth.

In 2010, 55 percent of the population of Washington County lived in St. George, while 73 percent of the jobs were in St. George, a reasonable "match" between housing and jobs. The Dixie MPO estimates that by 2050, St. George will still be home to 73 percent of the county's jobs -- but only 43 percent of its population. Because the County is directing housing growth to communities that are further away from jobs, it is forcing households to engage in longer commutes that waste people's time and resources and cause congestion and poor air quality. Adding highway capacity, as proposed in the Northern Corridor project, only further encourages that sprawl.

Part IV: Conclusion: Washington County at a Crossroads

Proponents of the Northern Corridor proposal have attempted to claim that the highway expansion across conservation land is the inevitable necessity of progress and growth. They argue that without the Northern Corridor the region will be choked by traffic. But the opposite is true. **Washington County can and will reach its full economic potential only when it grows thoughtfully and efficiently.** Ironically, it is highway-expansion proponents who will doom the region to traffic-choked sprawl, as they force people to live further away from jobs and other destinations and community resources located in St. George. A more thoughtful approach would recognize that conservation and access to open space is part of what makes Washington County so exceptional, and is a significant driver of economic development in the region. Preservation of this open space is essential to the county's long-term economic prospects. At this vital crossroads for the region, decision-makers must choose the right path for its future.

As they make this choice, they should consider the success they have started to achieve in accommodating growth while prudently managing the region's limited and precious water resources. Recently, Washington County has adopted water policies that promote conservation and efficiency and make the most of the region's limited water resources. Doing so has saved taxpayers and ratepayers in the region hundreds of millions of dollars of avoided infrastructure costs and strengthened the region's water security, while supporting its economic growth. These policies have made the most of a challenging set of circumstances -- supporting a county in one of the driest parts of the country -- all while respecting the rights of individuals to make their own choices about how to use their family's resources. The region could – and should – adopt a similar strategy and approach for its transportation and land-use policies, embracing a set of tools that reduce auto-dependency, discourage sprawl, encourage traditional neighborhood development, and support thoughtful growth that preserves conservation land for the enjoyment of future generations.

Even those who find this vision of sustainable growth unconvincing or impractical should question the merits of the Northern Corridor proposal. The proponents' own traffic estimates indicate that alternatives are better at reducing congestion, without destroying protected land and resources valued by the local community. **Washington County provides no explanation for why its decades-long investments of public resources in studying and planning of the Northern Corridor far outweigh their investments in the study and planning of better alternatives that avoid protected landscapes.**

Appendix:

Report Materials

Speck Dempsey has produced three documents conveying our work and analysis:

- (1) A letter to the Bureau of Land Management as part of the SEIS process, dated July 8, 2024 and submitted by Conserve Southwest Utah,
- (2) This report, titled “Washington County at a Crossroads: An Analysis of the Proposed Northern Corridor Highway Project in Southwest Utah,” and
- (3) A set of slides that accompany and support this report and that can be used for future public presentations.