

Tourism Transportation Demand Management in Flagstaff, AZ

Winter recreation contributes \$48 million to Flagstaff's economy, creating more than 500 jobs and generating \$7.3 million in tax revenue. However, increased tourism caused growing congestion. Big Data helped planners find successful alternatives to highway widening.

EXECUTIVE SUMMARY

- Visitors significantly increased travel times on Flagstaff's main winter destination highway
- With growing congestion and public pressure, widening the highway was a contentious issue.
- Big Data provided analytics and ROI for several mitigation options to decrease traffic by 2-5%
- Increasing free transit service significantly decreased roadway travel times

Mission: Explore Cost-Effective Mitigation Tactics

Flagstaff, Arizona welcomes a lot of tourists in the winter, especially skiers and snowboarders visiting Arizona Snowbowl and other recreation destinations. Vehicle traffic was impacting congestion on U.S. Highway 180, the only route to nearby winter recreation areas.

Planners at the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) realized the community need cost-effective solutions that could be implemented right away. As a multi-million-dollar project, highway widening and new bypass options required significant financial resources. It would also directly impact nearby neighborhoods and the historic downtown area, which concerned residents.

Instead, NAIPTA wanted to study transportation demand management strategies compared to alternate access routes. They needed high-quality data to help better understand the issues and find cost-effective solutions.

"It was surprising how much public perception of travel times was different from the actual data, we realized that not everyone is playing scientist while they are driving."

KATE MORLEY
NAIPTA

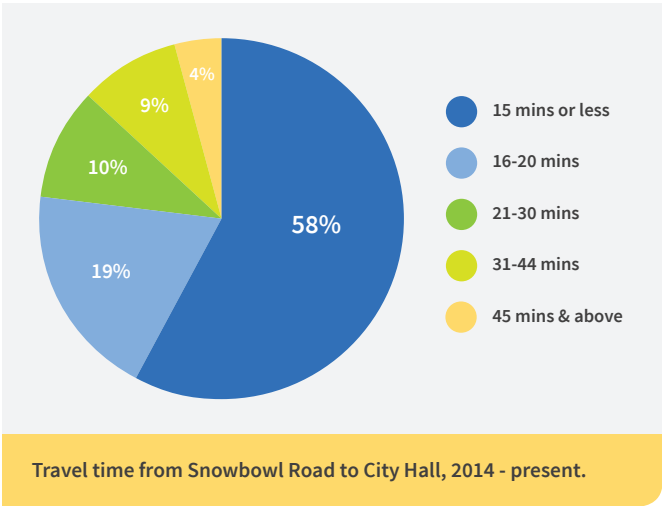


Analysis: Quantify Actual Travel Times

Travel times were a more telling metric than traditional roadway volume for understanding the issue and communicating with the public. NAIPTA also wanted historic data, since not all winters have the same levels of snowfall and tourism.

Based on an origin-destination analysis conducted in StreetLight InSight®, planners obtained metrics for historic travel times on Highway 180. They discovered that for trips from Snowbowl to downtown, only 4% of historic travel times were 45 minutes or longer over the past four winters, compared to public perception of regular three- to four-hour waits. That metric helped planners frame their return on investment discussions.

Planners were surprised by how different the results were from the public perception of long travel times. To validate results, NAIPTA planners analyzed historic travel times from travel logs of buses on the same corridor, and found that the trends were similar.



	Low End of Range	High End of Range
BUS SERVICE	4.0%	5.0%
\$15 PAID PARKING	2.0%	5.0%
CARPPOOL INCENTIVES	1.0%	2.0%
DYNAMIC SIGNAGE	0.5%	1.5%
MARKETING	0.5%	1.5%
LIMITED-HOUR PASSES	0.5%	1.5%

Projected traffic reduction from TDM strategies.



Results: Effective Alternatives to Highway Widening

NAIPTA presented the analysis results to the public for feedback on which alternatives to pursue. From there, NAIPTA created a series of corridor management recommendations and implementation plans focusing on three main options.

INCREASED BUS SERVICE: Free bus service to Arizona Snowbowl was immediately increased from a park-and-ride lot, operating as often as every 15 minutes on winter weekends from a park-and-ride lot. The increased service attracted 26,497 bus trips to Snowbowl, with approximately half of ridership originating or ending in town, surpassing the plan estimates threefold.

ALTERNATE ROUTES: Three alternate routes were identified to potentially alleviate traffic. A traffic model showed that, on average, 240 vehicles over a four-hour peak period would choose to use the alternate access route to reach their desired destinations, thereby saving about nine minutes on the heaviest congestion days (a similar savings to implementing the TDM solutions).

CARPPOOL AND PAID PARKING INCENTIVES: Planners recommended implementing paid parking on key weekends and holidays, potentially reducing traffic by two to five percent on those days. They estimated that carpooling incentives could increase the average automobile occupancy from 2.54 to 2.77. Higher automobile occupancy could potentially reduce traffic by one to two percent.

Even with record attendance and snowfall, the biggest inbound vehicle delays were about 20 minutes of travel time compared to 45+ minutes in previous years.