Complete Streets on Indian Reservations

A CLEAR NEED
INTRODUCTION

American Indians living on Indian reservations have considerably lower quality of life than their rural white counterparts. While urban American Indians experience significant challenges, those living on reservations often live in dire conditions that are more commonly associated with a developing country. Indicators for safety, health, and economic development are considerably lower on Indian reservations than in urban Indian communities or rural white communities.

To better confront these challenges, The Bureau of Indian Affairs (BIA), Indian Health Service (IHS), tribal governments, and other relevant agencies should implement Complete Streets policies. This can be accomplished in a fashion that is revenue neutral or money saving for the agencies involved. Complete Streets have a proven track record of creating immediate and long-term benefits in safety for all road users, health via increased walkability, and economic development through increased pedestrian traffic.

BACKGROUND

The current road construction policies in place negatively affect American Indians living on reservations. These policies contribute to significant disparities between on-reservation American Indian communities and their rural white counterparts in the above noted key indicators. This section will explore current policies, and the effect that these policies have on safety. Additionally, there will be a case study highlighting disparities. Lastly, this section will discuss the effects that these policies have on health and economic outcomes in reservation communities.
DEFINITIONS

Complete Streets are described by a Smart Growth America report as “streets for everyone.”

The report goes on to state that they are

designed & operated to enable safe access for all users. Pedestrians, bicyclists, motorists, & public transportation users of all ages & abilities are able to safely move along & across a complete street. Complete Streets make it easy to cross the street, walk to shops, & bicycle to work. (National Complete Streets Coalition, 2015)

Once better pedestrian facilities are in place and traffic is calmed by a Complete Streets construction, the new environment encourages more walking as a form of transportation as well as providing a safer path for those who were already walking. Once a more pedestrian friendly environment is created and through traffic is forced into slower speeds, “Placemaking” can create further opportunities for economic and cultural development.

Placemaking is described as a process that

involves looking at, listening to, and asking questions of the people who live, work, and play in a particular space, to discover their needs and aspirations. This information is then used to create a common vision for that place. The vision can evolve quickly into an implementation strategy, beginning with small-scale, do-able improvements that can immediately bring benefits to public spaces and the people who use them.” (Project for Public Spaces, 2015)

JURISDICTION OVER ROAD PROJECTS

In most cases, jurisdiction over streets and state highways is shared between municipalities, counties, and state Departments of Transportation. On most tribal land, however, tribal governments are responsible for road maintenance, in many cases supported by funding from the Bureau of Indian Affairs (BIA), which has a $2.5 billion budget. (Bureau of Indian Affairs, 2014) Tribal governments usually have complete control over roads in their jurisdiction. (Clifton, 2014)
CURRENT POLICIES

While Complete Streets initiatives are coming into the mainstream in states from Pennsylvania to Oregon, none of the top five states for American Indian population by percentage, (US Census Bureau, 2015) none have a Complete Streets policy, nor do any of the tribal governments involved. (Smart Growth America, 2015)

The Indian Health Service (IHS) devotes no specified proportion of its $4.7 billion budget to infrastructure projects that have been shown to positively affect health indicators. The agency instead focuses its efforts on direct health services. (National Center for Biotechnology Information, 2015) While it may seem unconventional for a health-based agency to fund infrastructure projects, the Centers for Disease Control (CDC) has a long-established record of funding physical infrastructure that has the capacity to improve health. (Centers for Disease Control, 2009)

The Bureau of Indian Affairs does not have a Complete Streets policy, yet the agency has recognized that there is a problem with road safety on Indian reservations. At present, the BIA is announcing a proposal to update its Tribal Transportation Plan (TTP) to come into compliance with the federal transportation law known as MAP-21, or Moving Ahead for Progress in the 21st Century. (Department of the Interior, 2014) While MAP-21 recognizes the need to make roads safer for all users, (Federal Highway Administration, 2015) it does not include a specific provision guaranteeing Complete Streets in new construction projects. (Smart Growth America, 2011)
The image depicts BIA Route 2 in the town of Kyle, on the Pine Ridge Indian Reservation. A large high school is visible on the right, with commercial and residential development opposite. BIA Route 4 joins from the left. Note the lack of pedestrian facilities (crosswalks, street lighting), as well as the wide clearances and turning radius of the intersection, which encourages high speed turns. Source: Google Maps Streetview

The BIA is not the only entity that is taking steps to improve road safety on Indian reservations. There are presently two TIGER awards on the Pine Ridge Indian Reservation, (US Department of Transportation, 2015) both of which are co-sponsored by the Oglala Sioux Tribe (OST), which is the governing body of the Pine Ridge Indian Reservation. The first project seeks to make safety improvements to Rt 18, particularly on the corridor between the towns of Pine Ridge and Oglala, which is distinguishable as a series of 3 fatalities on Map 2. (South Dakota Department of Transportation, 2009) The second project will pave a section of BIA 2 that is currently gravel and add a bike lane to that section. Both project proposals site concerns about safety on the roads in question.
OUTCOMES: SAFETY

Current policies contribute to significant safety disparities between American Indians and whites. This phenomenon will be explored on a national level, as well as in a local case study.

In the 5 states with the largest American Indian populations proportionally, American Indians (both on and off reservations) are far more likely to be involved in fatal pedestrian crashes than people from other ethnic and racial groups.

Table 1: American Indian (AI) Pedestrian Fatalities Multiple, vs White Population

<table>
<thead>
<tr>
<th>State</th>
<th>AI Pedestrian Death Multiple*</th>
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<tbody>
<tr>
<td>Alaska</td>
<td>6.2x</td>
</tr>
<tr>
<td>New Mexico</td>
<td>7.1x</td>
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<tr>
<td>South Dakota</td>
<td>8.4x</td>
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<tr>
<td>Oklahoma</td>
<td>1.9x</td>
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<tr>
<td>Montana</td>
<td>4.3x</td>
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<tr>
<td>Average</td>
<td>5.6x</td>
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</table>

*Indicates multiples of pedestrian fatalities, versus white population in state. Ex: Alaska Natives are 6.2x more likely to be killed than white Alaskans. Source: (Smart Growth America, 2014)

Table 1 is indicative of statewide phenomena, which includes both American Indians living on and off reservations. Likewise, comparisons to whites are combined urban/suburban/and rural communities. The rate of pedestrian deaths remains constant or goes down as the populations get more rural among whites nationally. Conversely, in American Indian populations, pedestrian deaths increase as populations get more rural. (Association for the Advancement of Automotove Medicine, 2003)
Safety Disparities Between the Pine Ridge Indian Reservation and Rural Whites

Data specific to this issue from Indian reservations are rare, so some rudimentary spatial analysis was performed to better inform this paper. The Pine Ridge Indian Reservation was chosen because it is exemplary of pedestrian safety disparities between reservation-based communities and their rural white counterparts nationwide.

Map 1 depicts the town of Pine Ridge and its 4 peer towns in South Dakota in terms of population and rural locations. While the town of Pine Ridge (in red) had 6 pedestrian fatalities between 2003-2012, the towns of Winner, Canton, Hartford, and Milbank (green) had 0 fatalities. (Smart Growth America, 2015)

Map 1: Town of Pine Ridge and Peer Towns

Source: Google Maps
It is difficult to do a statistical comparison between the town of Pine Ridge and peer towns in South Dakota, because the peer towns had zero fatalities combined during the period. With this in mind, an additional analysis was done. This analysis compares the town of Pine Ridge with Rapid City, and the Pine Ridge Indian Reservation with the Black Hills National Forest. Map 2 depicts pedestrian fatalities from 2003-2012 in southwestern South Dakota. Each blue dot represents one fatality during the period. The map shows a cluster of 8 fatalities in Rapid City, and 6 in the town of Pine Ridge (at the bottom center of the map). Rapid City has a year round population of 70,812, (US Census Bureau, 2015) with a significant influx of seasonal tourists due to its proximity to the Black Hills, which draws millions of visitors per year. (Pearson, 2012) The town of Pine Ridge is home to 3,308 people. (US Census Bureau, 2015)

By comparing the relative populations of the two municipalities versus pedestrian fatalities, we can determine that pedestrians in Pine Ridge are several factors of 10 times more likely to be killed than those in Rapid City. Additionally, there were a total of 19 fatalities on the Pine Ridge Indian Reservation during the period (bottom right quadrant of Map 2), compared with 4 in the Black Hills National Forest. The Pine Ridge Indian Reservation has a population of approximately 38,000, (Oglala Sioux Tribe, 2015) while the Black Hills National Forest sees millions of annual visitors.
Map 2: Pedestrian Fatalities in Southwestern South Dakota

Source: (Smart Growth America, 2015)

OUTCOMES: HEALTH

Nationwide, 39% of American Indians are obese. (Robert Wood Johnson Foundation, 2010) While this is significantly higher than the 34% national average of the overall American population, (Centers for Disease Control, 2014) the results are considerably more alarming when some local examples are considered. On the Pine Ridge Indian Reservation in South Dakota, the obesity rate is over 50% and 50% of adults over 40 suffer from diabetes. (Oglala Sioux Tribe, 2012) This leads to significant public expenditures to treat the long-term effects of these and related diseases.
OUTCOMES: ECONOMIC DEVELOPMENT

American Indians living on reservations experience severe concentrations of unemployment. There are 15 reservations where the unemployment rate tops a staggering 80%. (Shilling, 2013) Not surprisingly, poverty is dire on many Indian reservations. Shannon County, South Dakota -of the aforementioned Pine Ridge Indian Reservation- is consistently one of America’s poorest counties and has been called “Poverty’s Poster Child.” (Kristof, 2012) Many of the poorest counties in America are located on Indian reservations in South Dakota alone. These examples are all the more notable because South Dakota ranks in the middle for poverty nationwide, despite such bleak circumstances on its 8 Indian reservations. (Poverty USA, 2015)

POLICY STATEMENT

Better outcomes are clearly possible. One solution involves retrofitting current roads in areas of higher population to make them Complete Streets compliant. What is needed is increased street lighting, pedestrian side paths between key areas, crosswalks at strategic locations, and traffic calming measures. The latter involves changes to the physical layout of the road in question to force drivers to drive more slowly. This facet is an acute need on reservations due to perpetually under-resourced tribal law enforcement agencies, which will be discussed in more detail later.

Bringing Complete Streets and Placemaking initiatives to Indian reservations has the capacity to reduce fatalities and serious pedestrian injuries, decrease rates of obesity and related diseases, and provide culturally appropriate economic development to depressed areas. This can be accomplished in a fashion that is revenue neutral, or quite likely money saving for the agencies related.
IMPROVING OUTCOMES: SAFETY

There are many complicated and interconnected factors that lead to such poor outcomes on Indian reservations. Many programs and initiatives have attempted to improve the situation from a social perspective. An aspect that has been largely overlooked, however, is the relationship that the built environment has with these problems.

As discussed earlier in this paper, most Indian reservations are in rural areas. Housing is largely built close to state highways, (Tribal Law and Policy Institute, 2015) and traffic speeds on these roads can be high. Though speed limits are reduced as these highways near towns or clusters of housing, the posted speeds are often still hazardous to pedestrian movement. Even when speed limits promote pedestrian safety, there are still no physical features of these areas that encourage slower auto speeds. It is more important on Indian reservations to control speeds without law enforcement involvement than it is in in other areas because tribal police are under-resourced in comparison to nationwide averages. Often, a force sufficient to police a small New England town is tasked instead with patrolling a territory the size of Connecticut. As such, police enforcement of speeding and other safety-related violations is deprioritized.

By slowing speeds in key areas, Complete Streets will give tribal law enforcement officers who are patrolling roads the opportunity to more readily make observations about other motorist safety issues, such as seat belt, car seat, and DUI compliance, all of which are ongoing issues in many American Indian communities. (Centers for Disease Control, 2014)
IMPROVING OUTCOMES: HEALTH

The built environment also contributes to negative health outcomes for residents of Indian reservations. Often, the only way for pedestrians to travel is on the shoulder of a state highway. Sometimes, there is no shoulder at all, and pedestrians are forced to walk in the roadway.

Since there are no pleasant pedestrian facilities, local residents are more likely to remain indoors or rely on cars for even short journeys. These non-existent pedestrian facilities contribute to increased obesity and diabetes rates among American Indians. Several studies have shown a definitive connection between walkability and health. In terms of risk of obesity, for each hour spent in a car, one’s risk increases 6%, while for each kilometer walked, the risk of obesity decreases by 4.8%. (Smart Growth America, 2015)

IMPROVING OUTCOMES: ECONOMIC DEVELOPMENT

Many Indian reservations are home to tourist attractions and are located along well-traveled state roads. Despite these strategic assets, tribal governments often fail to capitalize on these opportunities. A major contributing factor is travel speeds, which are often too high for travelers to have sufficient time to notice local businesses and attractions. Additionally, many sites that are popular with tourists are lacking the culturally rich businesses that could capitalize on tourist visits: visitor centers, local tourism agencies, restaurants, arts & crafts stores, etc.

Opportunities for economic development that Complete Streets and Placemaking can bring to Indian reservations can provide tribal officials with an alternative to casinos. Additionally, increased economic development on Indian reservations can lead to decreased reliance on public assistance, further increases in health and safety, and reductions in incarceration costs to tribal, state, and federal governments. (Winig, 2015)
The table below shows how the existing policy (Current Roads) compares to Complete Streets when measured against the previously described objectives, with an additional category addressing construction cost. Each policy is scored on a 3-tier scale of High (H), Medium (M), and Low (L), in relation to their capacity to meet the objectives.

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<thead>
<tr>
<th></th>
<th>Safety</th>
<th>Health</th>
<th>Economic Development</th>
<th>Economical Construction</th>
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<tbody>
<tr>
<td>Current Roads</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Complete Streets</td>
<td>H</td>
<td>H</td>
<td>H</td>
<td>L</td>
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The state of the current roads leads to poor outcomes in safety, while Complete Streets have a proven track record of enabling travel safer for all road users. Another reason to focus on safety is that gains in this category can be seen immediately after construction or retrofit is complete.

The health benefits are as clear. Current roads on Indian reservations offer little to nothing in the way of pedestrian facilities. This creates an environment that is intimidating, unwelcoming, and ultimately discouraging for walking. As noted earlier, increases in walking are essential to improving health outcomes. In addition, the CDC recommends adoption of Complete Streets policies as a strategy to prevent obesity, indicating that the agency has shown that there is clear link between health and the built environment. (Centers for Disease Control, 2009)
There are clear *economic development* benefits to Complete Streets. During construction, Complete Streets generate nearly double the jobs per $1 million spent, compared with traditional road projects. (Smart Growth America, 2015) Once built, Complete Streets set the stage for ongoing gains in economic development. When auto speeds are reduced to a more human pace and walking opportunities are created, an environment that spurs business opportunities is established.

It is recognized that there is one trade off: *economical construction.* Complete Streets cost more to build. As noted earlier in this paper, however, Complete Streets create ongoing fiscal benefits in terms of reduced hospitalizations as a result of serious pedestrian crashes, reduced health care costs as citizens adopt more active lifestyles, and increased economic development in communities.

**CASE STUDIES**

The following case studies highlight policies that have led to better outcomes.

**Lancaster, California**

The municipality implemented a Complete Streets policy along its Main Street (see Images 1-2). Constricted roadways led to slower auto speeds. In addition to slower auto speeds and reduced crashes, the corridor saw the creation of 50 new businesses and 800 new jobs. Commercial vacancies fell to 4%, and sales tax revenue increased 26%

(Smart Growth America, 2015)
Complete Streets on Indian Reservations: A Clear Need

Image 1: Lancaster, California; Before Complete Streets

Source: (Smart Growth America, 2015)

Image 2: Lancaster, California; After Implementing Complete Streets

Source: (Smart Growth America, 2015)
Zuni Main Street

Zuni Main Street is the first project in the nation that seeks to bring Complete Streets to an Indian reservation. Here, the Zuni Pueblo government has formed a partnership with the New Mexico Main Street Initiative and the University of New Mexico’s Indigenous Design and Planning Institute. (Zuni Pueblo Main Street, 2015) Zuni Main Street is a Complete Streets initiative that aims to improve health, economic development, safety, and sense of place for the Zuni people, as well as for visitors. Zuni Main Street focuses on traffic calming measures such as raised crosswalks, improved street lighting, curb bump-outs, bike lanes, and plantings. Additionally, the project calls for creation of culturally significant walking trails as well as Placemaking that will give legitimacy and permanence to tribal artists. This project is currently in the design phase, and as there are no others like it, the impact that it will have on its stated goals is yet to be proven.

Image 3: Zuni Main Street Design

The top-left slide indicates current conditions, with bottom-left representing Complete Streets modifications. The top-right slide shows traffic calming at the crosswalk. Bottom-right shows Zuni themed street lighting. Source: (Zuni Pueblo Main Street, 2015)
An artists’ village and public meeting space is envisioned in a current parking lot.
Source: (Zuni Pueblo Main Street, 2015)

Interpretive trails create walkable areas, while connecting Zuni Main Street to the larger pueblo community.
Source: (Zuni Pueblo Main Street, 2015)
RECOMMENDATIONS

POLICY CHANGE

While the problems highlighted are complex, resulting from many interrelated factors (historical oppression, forced habitation on lands unsuitable to a given tribe’s culture, and inter-generational reliance on public assistance, to name a few), making the built environment on Indian reservations a part of the solution is relatively simple. What is required is little more than changing existing policies, which have been shown to be ineffective.

The Bureau of Indian Affairs and American Indian governments should pass regulations that require Complete Streets building practices to be a part of all new roadway construction on Indian reservations. Additionally, the BIA should work with American Indian governments to identify roadway segments that have the highest potential for improvement in terms of safety, health and economic development, and should implement targeted Complete Streets retrofits to these areas.

Working together to shift to a Complete Streets policy will involve much more than the BIA issuing a memo or policy statement. In order to ensure that tribal communities are poised to make the most of Complete Streets, the BIA should hold workshops on every Indian reservation. BIA regional field offices would facilitate these workshops, with technical assistance from a Complete Streets advocacy organization. Workshops should be informed by fundamentals of public participation, as well as knowledge of the unique cultural framework under which each reservation operates. As such, local or academic experts on cultural norms on a given reservation should be consulted for each meeting. This will ensure maximum local participation and buy-in.
FUNDING SHIFT

In coordination with new BIA and American Indian governmental policy changes, other federal and state agencies with a stake on Indian reservations should shift a portion of their funding towards Complete Streets initiatives. These agencies include the IHS, Department of Health and Human Services, Department of Housing and Urban Development, US Department of Transportation, State Departments of Transportation, Centers for Disease Control, and the Department of Justice. These agencies not only have a moral imperative to improve outcomes, but they also stand to gain financially through decreased hospitalizations due to crashes and chronic disease. Additionally, the economic benefits that Complete Streets can bring to communities on Indian reservations can lead to decreased incarcerations, and decreased reliance on public assistance.
References


Oglala Sioux Tribe vs. Schwarting et al, 4:12-cv-03027 (United States District Court for the District of Nebraska February 27, 2012).


