ADOT Complete Highways Guidebook

Overview

Rural Transportation Summit

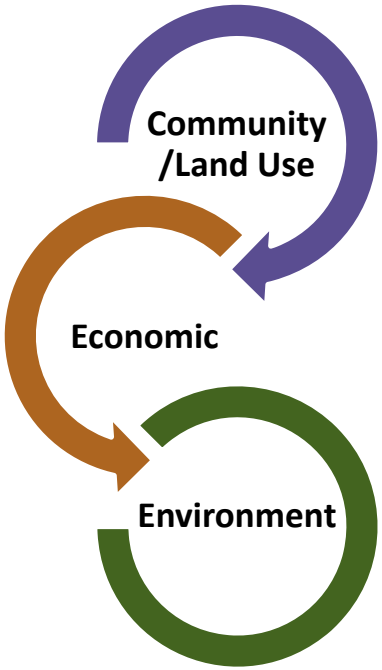
Flagstaff, Arizona

January 2015

What is a **Complete Highways** approach?

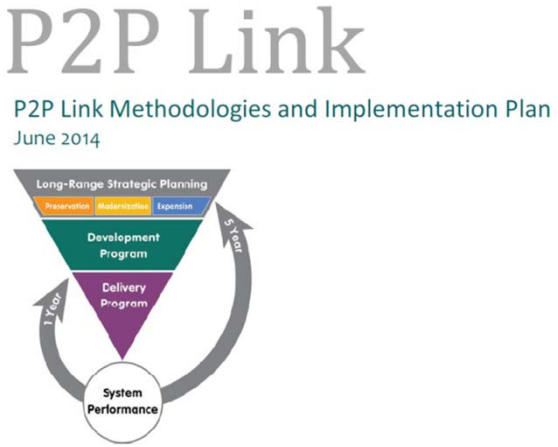
A **complete highways** approach focuses on:

- *maintaining a state of good repair*
- *improving the performance of the existing transportation system*
- *context sensitivity*
- *all modes and their users*
- *goals beyond mobility, such as economic prosperity, environmental stewardship, and community well-being.*



Complete Highways and ADOT

➡ A foundation exists within ADOT to consider Complete Highways



ADOT

Planning and Environmental Linkages (PEL) Process

Developing the Guidebook

Developing the Guidebook
Internal Focus Group Discussions

- MPD Bicycle and Pedestrian Program
- MPD Corridor Team
- MPD Planning/Environmental Linkage
- MPD Regional Planners
- MPD Transit Section
- MPD Tribal Program
- Office of Environmental Services
- Environmental Planning Group
- Traffic Engineering and Safety
- Roadway Design
- Urban Project Management
- Statewide Project Management
- Roadside Development
- Regional Traffic Engineering
- Flagstaff District
- Safford District

Developing the Guidebook
Outcome of Discussions

➡ Three primary topical opportunity areas on which to focus the ADOT Complete Highways Guidebook

- ✔ Agency-Scale Culture and Mission
- ✔ Project Prioritization
- ✔ Project Planning, Scoping and Design to Improve Project Quality

Developing the Guidebook
Other Ideas

- ➡ Establish an ongoing Council/Task Force/Working Group
- ➡ Provide leadership and technical assistance to support quality local land use planning and decision making
- ➡ Undertake a demonstration project
- ➡ Modify design manuals and standard operating procedures and associated manuals

Overview of the Guidebook

ADOT Complete Highways Guidebook

Introduction

- What are Complete Highways?
- How can they benefit ADOT?

ADOT Complete Highways Guidebook
Strategies

- Utilize a multi-disciplinary team
- Establish a full spectrum of project needs and objectives
- Focus on alternatives that are affordable and cost-effective
- Define wide-ranging measures of success
- Consider a full range of alternatives
- Partnerships with local agencies

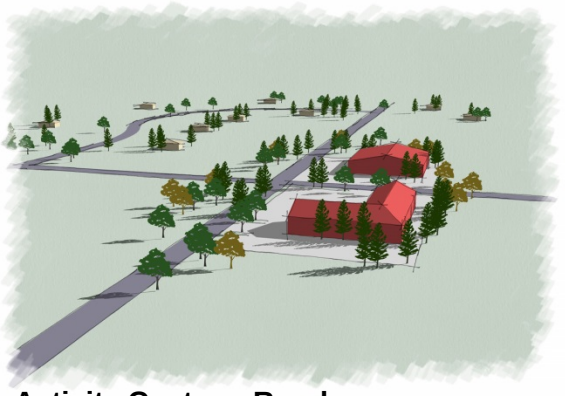
Project Manager Checklist Strategy #1: Understand the Context	
Are there local/regional plans or policies that help to understand the community's values?	What do these plans and policies tell us about: ◆ Development patterns? ◆ Transportation systems and services? ◆ Economic development/employment sectors? ◆ Environmental and recreational resources? ◆ Housing stock, type, and location? ◆ Educational facilities, type, and location? ◆ Historic districts and structures? ◆ Aesthetic features?

ADOT Complete Highways Guidebook

Land Use Contexts

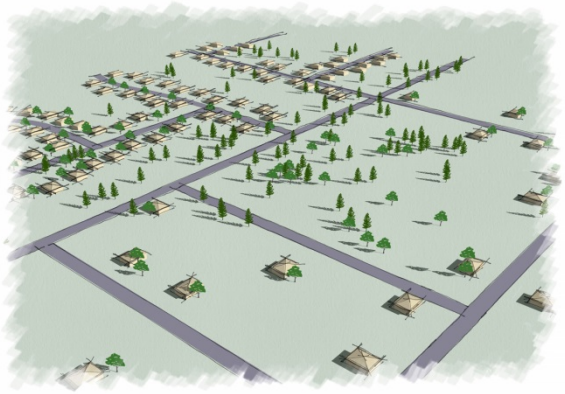
Activity Center – Urban

Activity Center – Suburban



Activity Center – Rural

Suburban



Rural

ADOT Complete Highways Guidebook

Understanding the Context

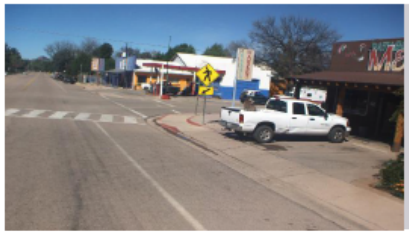
- Define each context
- Examples in Arizona
- Design considerations
- Potential benefits
- Flexibility within AASHTO and ADOT standards

Table 10

ACTIVITY CENTER SMART TRANSPORTATION CONSIDERATIONS

SMART TRANSPORTATION GOALS	DEFINITION	SMART TRANSPORTATION CAPACITIES	DESIGN OPTIONS
Environmental Goals	Create solutions that are compatible with, and that can enhance, the natural environment; reduce emissions and pollution from the transportation system; and reduce the material resources required to support transportation.	Reducing: ◆ Stormwater runoff ◆ Ambient temperatures/urban heat island ◆ Enhancing air quality ◆ Encourage shift to low- or no-pollution emitting modes	◆ Green infrastructure ◆ Low-impact landscaping ◆ Sidewalks ◆ Bicycle facilities ◆ Higher frequency transit ◆ Shade canopy ◆ Vehicular travel lanes ◆ Electric charging stations
	Meet a community's needs by making transportation accessible, safe, and secure; include provision of mobility	Providing: ◆ Opportunities for walking ◆ Safe access to schools, parks	◆ Bicycle facilities ◆ Safe Routes to School network ◆ Sidewalks

Figure 11: Examples of Activity Centers



A rural activity center along SR 82 in Patagonia includes a park, market, gas station, banners, and an art gallery. Sidewalks provide pedestrian mobility.

As SR 87 passes through Chandler, land uses consist of activity centers within the this suburban area.

Historic SR 66 passes through an activity center that includes the periphery of downtown Flagstaff and NAU. This transportation facility accommodates pedestrians, bikes, busses, transit, and vehicles and includes pedestrian crossings, public art, and landscaping.

Example: US 89

SR 64 to the Little Colorado River through Cameron

Rural Activity Center: with commercial, neighborhood, livestock, truck traffic, through traffic

Example: US 89

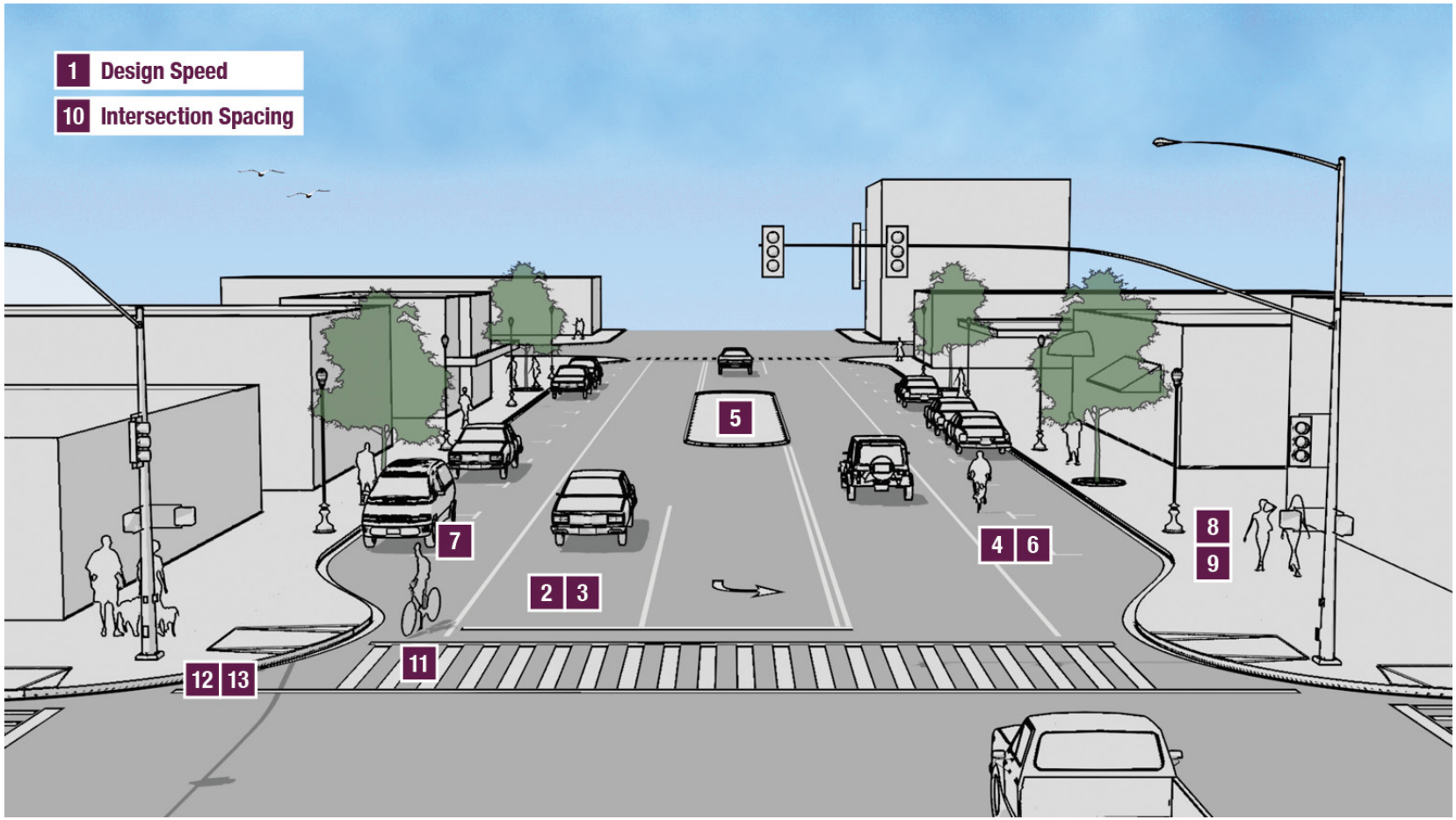
SR 64 to the Little Colorado River through Cameron

Example: US 89

SR 64 to the Little Colorado River through Cameron

Illustrative Renderings for Context Types

Urban Activity Center



Elements of Complete Highways
Design Guidance

	Design Element	Design Goal	Recommended Dimensions for Activity Center in Urban Area
	Travelled Way		
1	Design Speed	Design for moderate travel speeds to reduce collision risk and severity and improve pedestrian comfort.	25 MPH-35 MPH
2	Travel Lanes	Balance the need for through-capacity with need to accommodate other street elements and minimize crossing distances.	2-4
3	Lane widths	Minimize lane widths in urban areas to moderate vehicle speeds and reduce crossing distances	10' - 12' (12' outside lanes preferred for transit and/or truck routes)
4	Paved shoulders	Provide a paved shoulder only if bicycle or parking lanes are not present.	4' - 6' if bicycle lanes if parking not present
5	Medians	Medians can be used for landscaping, to provide room for left turn lanes, or to provide a refuge for crossing pedestrians.	12'-18' for left turn lane; 8'-10' for landscaping; minimum 6' for pedestrian refuge
6	Bicycle Lanes	• Create facilities for safe, comfortable travel by bicycle. • Consult the locality's bicycle plan and work to ensure connectivity. • Depending on context, consider wide curb lanes, bicycle lanes, or separated bicycle facilities in urban areas.	5' - 6'
7	On-street parking	Use to provide access to adjacent land uses and to buffer pedestrians from traffic.	7' - 8'

Elements of Complete Highways
Design Guidance

	Design Element	Design Goal	Recommended Dimensions for Activity Center in Urban Area
	Pedestrian Realm		
8	Clear sidewalk width	Provide sufficient through-space to accommodate demand. At a minimum, a wheelchair must be able to pass unobstructed. Commercial areas may require more sidewalk width.	5' - 8'
9	Sidewalk buffer	Provide a landscape buffer in suburban/residential areas. Street furniture (lighting, benches, trashcans, bike racks) in urban areas.	4'-6'
	Intersections		
10	Intersection Spacing	Minimize distance between safe crossings to improve pedestrian connectivity.	600' - 1300'
11	Crosswalks	Provide marked crossings at all signalized intersections	Width of sidewalk
12	Curb Extensions	Extend curbs into parking lanes at intersections to calm traffic and reduce pedestrian crossing distances.	Width of parking lane
13	Curb Return Radii	Keep turning radii as tight as possible to calm traffic. Allow for wider raddi where necessary to accommodate trucks and/or transit vehicles.	15'-40'

Elements of Complete Highways
Design Guidance

	Design Element	Design Goal	Recommended Dimensions for Activity Center in Urban Area
	Transit		
14	Bus Stops	Provide bus stops where transit present. Locate at intersections with safe crossing.	Minimum 40' long. Bus-bulbs, where applied should be at least 6' in width.
15	Pullouts	Not recommended in urban contexts	NA
16	Bus only lanes	Consider bus-only lanes to speed the highest-frequency, highest-ridership transit routes.	12'-14'
17	Transit queue jumps	Consider transit queue jump to allow transit to bypass intersection delay	Varies, depending on queue lengths

ADOT Complete Highways Guidebook
Implementation

- ➡ Draft Guidebook
  - ✔ Spring 2015
- ➡ Final Guidebook
  - ✔ Summer 2015
- ➡ Hard copy desk top reference, online availability
- ➡ Present to ADOT management
  - ✔ Training to project managers is anticipated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Pie Factory