TRANSPORT 2040: MOBILITY ZONES
TOPICS FOR CONSIDERATION

• Las Cruces Metropolitan Planning Organization Introduction

• Mobility Zone Basics

• Mobility Zone Data

• Uses for Mobility Zones

Serving Las Cruces, Doña Ana County and Mesilla
ABOUT THE MPO AREA

• Medium-sized MPO
  • 157,000 residents within planning area

• MPO area includes
  • City of Las Cruces
  • Central and southern portions of Doña Ana County
  • Town of Mesilla
  • New Mexico State University

• City of Las Cruces
  • 76.31 mi²
  • Population: 97,618 (2010 Census)
  • Experienced 31.44% increase in population since 2000
MOBILITY ZONE GOALS

Planning tool used to identify and assess transportation and land use data

- Provides a detailed understanding of how the transportation network and the built environment interact and change across the metropolitan area – “the space between”
- Establishes local baseline data providing for a range of performance measures
- Allows for better coordination efforts with residents and stakeholders
- Provides spatial analyses to develop strategies, visualize concepts, and make comparisons

Serving Las Cruces, Doña Ana County and Mesilla
MOBILITY ZONE CHARACTERISTICS

- Boundaries created by obstacles to mobility (i.e. arterials, rail lines, highways)
- Zone size designed to be walkable, bikeable distance
- Account for many factors affecting transportation
  - Any single factor can be misleading

Serving Las Cruces, Doña Ana County and Mesilla
MZ ASSESSMENTS
MOBILITY ZONE 2 – 3.06 SQ. MI.

• Connectivity Index: 1.55
• ½ Mile Walk to School: 61%

• Local Transect: Established
• Population Density: 9.3/acre
CONNECTIVITY INDEX
MOBILITY ZONE 6 – 5.03 SQ. MI.

- Connectivity Index: 1.39
- ½ Mile Walk to School: 8%

- Local Transect: Growing
- Population Density: 3.3/acre
MOBILITY ZONE USES

• Provide policymakers with a toolkit with which they can make responsible decisions
  • Mobility Zones are designed to reflect the reality “on-the-ground”
  • Limit optimism bias in planning, policy, and projects
• Assists in further defining an area’s identity
• Assist grant writers
• Answer many other questions, such as...

Serving Las Cruces, Doña Ana County and Mesilla
OTHER QUESTIONS
MOBILITY ZONES CAN HELP ANSWER

\[ \text{corr}(X, Y) = \frac{E[(X - \mu_X)(Y - \mu_Y)]}{\sigma_X \sigma_Y} \]

Are CI and mode choice correlated?

\[ y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n + \epsilon_i \]

How do the various mobility zone attributes interact with one another?

\[ P_T = \frac{e^{\beta_T \text{LogSum}_T}}{e^{\beta_T \text{LogSum}_T} + e^{\beta_A \text{LogSum}_A} + e^{\beta_N \text{LogSum}_N}} \]

How are people choosing to travel?

\[ T_{ij} = P_i \times \frac{e^{U_{ij}}}{\sum_j e^{U_{ij}}} \]

Where are people going?

\[ I = K \times \ln \left[ \frac{C}{\sum e^{A_i}} \right] \]

How accessible are our road ways?

\[ P_{gr2} = \int_{-\infty}^{-\Delta_{gr}} n(s) ds = \Phi(-\Delta_{gr}) \]

What routes are people deciding to take?

Serving Las Cruces, Doña Ana County and Mesilla
RECAP

- Las Cruces MPO Introduction
  - Welcome to southern New Mexico
- Mobility Zone Basics
  - New way of looking at your city layout
- Mobility Zone Case Studies
  - Well-connected, diverse land uses
- Mobility Zone Uses
  - Improve policies; Locate projects to benefit people

Serving Las Cruces, Doña Ana County and Mesilla
CONTACTS

Andy Hume, AICP
Phone:  (575) 528-3047
Email:   ahume@las-cruces.org

Duane Hoskins
Phone:  (575) 528-3148
Email:   dhoskins@las-cruces.org

Kelly Merker
Phone:  (575) 528-3480
Email:   kmerker@las-cruces.org

Questions during discussion

Serving Las Cruces, Doña Ana County and Mesilla