

# U.S. Environmental Protection Agency and Transit-Oriented Development

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# Phoenix, Mesa, Valley Metro Project

Transit Oriented Development  
and Proposition 207 in Metropolitan Phoenix

November 2009



Strategic Package of Tools  
Transit Oriented Development in Metropolitan Phoenix



# Phoenix, Mesa, Valley Metro Project

TOD Tools in the Phoenix Region: Summary Table

| TOD POLICY TOOLS   | TOOL PRIORITIES            |                |                  |
|--|----------------------------|----------------|------------------|
|  | Planning & Visioning       | Implementation | Ongoing Programs |
| SP-1 Regional TOD Strategic Plan   | POSITIVE                   |                |                  |
| SP-2 Citywide TOD Strategic Plan   | POSITIVE                   |                |                  |
| LU-1 Prepare Station Area Plans and Market Studies   | POSITIVE                   |                |                  |
| LU-2A, B & C Station Area Rezoning: Rezone Station Areas, Use Restrictions Based on Public Health and Safety and Transportation Impacts, and Optional Overlay Zone | POSITIVE OR NEGATIVE       |                |                  |
| LU-3A & B Land Use Intensity Tools: Density Bonuses and FARs and Building Height Bonuses   | POSITIVE                   |                |                  |
| LU-4A & B Land Use Standards Enhancement: Form-Based Codes and Design Guidelines   | POSITIVE                   |                |                  |
| LU-5A, B & C Parking Tools: Revised Parking Standards, Shared Parking, and Parking Districts   | POSITIVE                   |                |                  |
| DA-1 Fast Track Development Review   |                            | POSITIVE       |                  |
| DA-2 Capital Funding for Infrastructure  |                            | POSITIVE       |                  |
| DA-3 Tax Increment Financing   | REQUIRES STATE LEGISLATION |                |                  |
| DA-4 Reduced Impact Fees in Station Areas  | CURRENTLY INFEASIBLE       |                |                  |
| PM-1 Streetscape and Pedestrian/Bike Improvements  |                            | POSITIVE       |                  |
| PM-2 Façade and Site Frontage Improvement Program  |                            | NEUTRAL        |                  |
| PM-3 Tax-Exempt Bonds  |                            | NEGATIVE       |                  |
| PM-4 Tax Abatement   | CURRENTLY INFEASIBLE       |                |                  |
| LA-1 Joint Development Program   |                            | NEUTRAL        |                  |
| LA-2 Land Acquisition Loan Funds   |                            | NEUTRAL        |                  |
| LA-3 Funds for Buying Available Parcels in the Open Market   |                            | NEUTRAL        |                  |
| PI-1 Business District Association or Business Improvement District  |                            |                | POSITIVE         |
| PI-2 Marketing Plan  |                            |                | POSITIVE         |
| PI-3 Livable Communities Program   |                            |                | NEUTRAL          |
| PI-4 Community Development Corporation (CDC) Lead Efforts  | CURRENTLY INFEASIBLE       |                |                  |
| PI-5 Housing Trust Funds   | CURRENTLY INFEASIBLE       |                |                  |

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## Trip Generation Tool for Mixed-Use Developments

Research has consistently shown that neighborhoods that mix land uses, make walking safe and convenient, and are near other development allow residents and workers to drive significantly less if they choose. In fact, research has found that in the most centrally located, well-designed neighborhoods, residents drive as little as half as much as residents of outlying areas.<sup>1</sup> Along with these benefits, mixed-use development can improve communities in other important ways, including supporting affordable housing by lowering transportation costs.<sup>2</sup> Studies have also shown that mixed-use development, especially in concert with other smart growth strategies, provides significantly higher returns to local governments through property and sales taxes<sup>3</sup> while requiring lower per unit infrastructure and public-service costs.<sup>4</sup> The typical development planning and approval process treats mixed-use developments as if the uses were separated and only accessible by car, leaving mixed-use developments at a disadvantage compared to conventional, single-use development. Recognizing the lower traffic impacts of mixed-use development in central, well-connected neighborhoods in the planning and approvals process would help communities reduce traffic and realize other benefits.

The technical methods to estimate how much traffic a new development will create, known as trip generation analysis, have been standardized by the Institute of Transportation Engineers (ITE) and are used by traffic engineers across the country. However, these methods are generally based on data collected from single-use, automobile-dependent, suburban sites. They do allow for some internal capture (trips that might be entirely within larger, mixed-use developments), but in general the methods do not adequately account for the effects of compact development, mix of uses, site design, walkability, transit, and regional accessibility – key elements of smart growth strategies and of a sustainable community.

To help provide communities with better tools to analyze new development, EPA, in cooperation with ITE, worked with leading researchers and practitioners to develop new data and methods to estimate the trip-generation impacts of mixed-use developments. EPA analyzed six metropolitan regions, merging data from household travel surveys, GIS databases, and other sources to create consistent land use and travel measures. The resulting linked models estimate internal capture of trips within mixed-use developments as well as walking and transit use for trips starting or ending in mixed-use developments. The models have been validated against actual traffic counts at mixed-use developments across the country. The method is currently used in several regions in California, Washington state, and New Mexico, and the Virginia Department of Transportation recently adopted it as a statewide standard for determining the traffic impacts of urban developments.

The EPA team put the models into a spreadsheet tool that makes it easy for local government staff, consultants, and developers to estimate trips generated by a new mixed-use development. The spreadsheet estimates vehicle trips in the peak periods and for an entire day. The method also predicts trips by walking and transit and estimates the daily vehicle miles of travel associated with the development. The tool requires information about the development site and its surrounding area, including geographic, demographic, and land use characteristics. It also includes default national parameters for trip generation but allows the use of local values if available. An associated report describes the analytic basis for the method and the data used to calibrate and validate it. It is available upon request.

[Download the spreadsheet .xlsx](#) (MS Excel, 70K)

[http://www.epa.gov/smartgrowth/mxd\\_tripgeneration.html](http://www.epa.gov/smartgrowth/mxd_tripgeneration.html)



# Building Blocks for Sustainable Communities

- Launched in 2011
  - Developed 12 tools for conducting community-based workshops
  - Many are relevant to station-area planning
    - Walkability Audit, Complete Streets, Parking Audit, Green Streets, Sustainable Code Audit



# Training Resources Based on the Tools

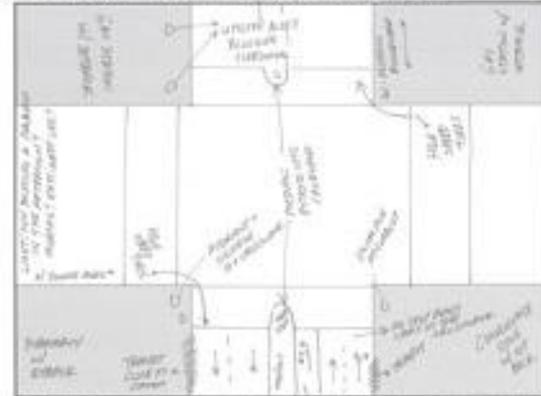
## Walkability Workbook



April 2012

### Intersection Sketch

LOCATIONS: IN PARTS BY WALKABILITY SKETCH  
TIMING: DATE: 2012.04.12  
Use the intersection sketch to write notes and capture existing conditions at a particular location. Through word or images, document what you see. In addition, note what you would like to see.



Comfort: Does the built environment make you feel that you belong here? — I WOULD LOVE TO SEE MORE GREEN SPACE AND MORE PEDESTRIAN-FRIENDLY FEATURES LIKE CROSSWALKS AND BIKELANE MARKINGS.  
Safety: Where did you feel safe or unsafe? What made you feel that way?  
BY THE WAY... I WAS CONCERNED ABOUT THE CROSSWALK AND BIKEWAY MARKINGS BEING PAINTED AT AN ANGLE ON THE SIDEWALKS WHICH ATTRACTED MY ATTENTION AND MADE ME FEEL UNCOMFORTABLE.  
Overall Impressions: Did you feel being in this environment?  
I FELT LIKE I BELONGED HERE AND WOULD LOVE TO SEE MORE GREEN SPACE AND BIKEWAY MARKINGS.

<http://www.walklive.org/project/walkability-workbook/>





## Smart Growth



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## Building Blocks for Sustainable Communities

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### Background

Many communities around the country are asking for tools and resources to help them achieve their desired development goals, improve the quality of life for their residents, and make their communities more economically and environmentally sustainable. In response to this demand, EPA developed the Building Blocks for Sustainable Communities Program.

Building Blocks for Sustainable Communities seeks to provide quick, targeted technical assistance to communities using a variety of tools that have demonstrated results and widespread application. This technical assistance will help selected local and/or tribal governments to implement development approaches that protect the environment, improve public health, create jobs, expand economic opportunity, and improve overall quality of life. The purpose of delivering these tools is to stimulate a discussion about growth and development, strengthen local capacity to implement sustainable communities approaches, and provide ideas on how to change local policies and procedures to make communities more economically and environmentally sustainable.

The assistance will be offered in two ways in 2012:



Keep up to date through our web page,  
<http://www.epa.gov/smartgrowth/buildingblocks.htm>



# U.S. Department of Transportation and Transit-Oriented Development

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# TOD in DOT Statutes

- MAP-21:
  - Transportation Alternatives Program (FHWA)
  - Fixed Guideway Capital Investment Program (FTA)
  - Joint Development (FTA)
  - TOD Planning Pilot (FTA)
- PRIIA (FRA):
  - Amtrak
  - Intercity Passenger Rail Investment
  - High Speed Rail Corridor Development





# DOT Focus: *TOD Planning Pilot*

- New FTA discretionary pilot program
- Grants for comprehensive planning
- Applicable only to new fixed guideway or core capacity improvement projects
- State and local governments are eligible
- Not yet funded



# TOD Resources (DOT)

- Training Courses
  - National Transit Institute ([www.ntionline.com](http://www.ntionline.com))
- Tools
  - National TOD Database ([www.toddata.cnt.org/](http://www.toddata.cnt.org/))
  - Mixed-Income TOD Action Guide ([www.mitod.org/](http://www.mitod.org/))
  - Walk Score ([www.walkscore.com/transit](http://www.walkscore.com/transit))
- Publications and Presentations ([www.fta.dot.gov/](http://www.fta.dot.gov/))
  - Research
  - Practice
  - Webinars

