



## Introducing Smart Growth to Texas: Project Summary Report

Smart growth has arrived in Texas. Several cities among Texas' growing urbanized areas are considering use of smart growth concepts or policies. Project 0-4238 introduces the Texas Department of Transportation (TxDOT) and other agencies to smart growth and examines how transportation can support and benefit from smart growth.

Urban areas in Texas, like many of their counterparts across the United States, are suffering from increasing traffic congestion and decreasing air quality. As urban populations grow, most development occurs at the periphery of existing urban and suburban areas. The conventional method of combating higher traffic levels has been to build more and wider roads. Sprawling urban areas result in more vehicle trips, longer trip lengths, and less opportunity for non-drive trips. Travel demand generated by these new developments is quickly outpacing roadway capacity.

Smart growth is an alternative to the personal vehicle-dependent urban sprawl described above. Smart growth is a concept that encourages compact development emphasizing mixed or complementary land uses in close proximity with a high degree of connectivity of streets and pedestrianways. The goal of smart growth is to improve quality of life and effectiveness of transportation and other resources. This concept reduces off-site trips, provides better opportunities for non-drive trips, and ultimately can reduce transportation infrastructure costs. Smart growth also supports land conservation and environmental sensitivity.

This project:

- provides background information to enable transportation and other professionals to obtain a basic understanding of the concept and characteristics of smart growth;
- explains how smart growth relates to and is supported by transportation; and
- lists benefits of smart growth in both transportation and various aspects of quality of life.

### What We Did . . .

This project began with a literature review of:

- concepts and characteristics of smart growth, particularly those related to transportation;

- documented impacts of smart growth;
- how annexation policies might affect or be affected by smart growth; and
- samples of transportation implementation in smart growth scenarios.

The project also included a telephone survey of more than 20 selected state departments of transportation (DOTs) to determine their approaches to smart growth and transportation and the roles and programs they have undertaken to date, if any. Several local agencies were also surveyed within a few of the states in which the state DOTs had initiated smart growth programs to see how they viewed state DOT involvement.



Figure 1. Live-work units in The Kentlands.



Researchers completed case studies of two state DOTs—California and Oregon—and one smart growth development. The DOT case studies examined smart growth programs in a state that was assisting local communities with their own smart growth programs (California) and a state that had taken a lead role in implementing smart growth (Oregon). The development case study (The Kentlands in Gaithersburg, Maryland) examines the degree of success of a representative major “smart growth development” in reaching typical transportation goals for smart growth. Figures 1 through 3 show examples of smart growth projects from each case study.

Because an objective of this project was to provide information so transportation professionals could better understand smart growth, materials for a workshop were also prepared. This material will enable TxDOT (or others) to present half-day or full-day workshops on smart growth to staff and other interested transportation professionals.

## What We Found . . .

The research completed for this project includes a variety of findings related to smart growth. These concepts:

- are being used in various ways by not only local communities, but also state DOTs;
- can have an impact on travel characteristics;
- can be used in a variety of ways to productively help address transportation-related issues and needs facing TxDOT; and
- do not necessarily provide a “quick fix” for either quality of life or sustainability issues.

Of the state DOTs surveyed, over half had some kind of smart growth program underway at the end of 2001. Principal conclusions derived from the research are described in the following sections.

### Issues Addressed by Smart Growth

The survey of a cross-section of state DOTs showed they are involved in smart growth in a variety of ways. The issues being addressed by those state DOTs through smart growth programs are some of the very same issues facing Texas. These issues include:

- sprawl and the increasing need for roadway infrastructure in a time of tightening financial resources;
- demands for more context-sensitive road designs;



Figure 2. California State Route 63 in Orosi, before and after (simulated). Z-crosswalk and median added to improve safety and aesthetics.

- increasing congestion with decreasing ability to build out of it by increasing capacity;
- need to preserve existing roadway capacity and make best use of existing infrastructure investments;
- increased environmental concerns;
- need for multimodal solutions to meet travel demands; and
- localized resistance to some transportation improvements.

Some state DOTs have used smart growth and its increasing popularity to address long-standing issues or try to strengthen existing programs. For example, access management has been made part of smart growth in several states. Several state DOTs are funding, supporting, or permitting local investments in improving pedestrian safety on state highways through smart growth programs. Maryland is using smart growth to concentrate state investments in areas designated for growth and to reduce the need for additional state

transportation investment elsewhere. This strategy reduces overall state infrastructure investment needs. Smart growth is being used as a way to justify and explain state decisions or to assist state DOTs in addressing certain growth, transportation, and quality of life issues.

### Better Working Relationships

Nearly all surveyed state DOTs reported better working relationships with local and regional agencies. This was due in part to the DOTs and local agencies working toward more common goals under smart growth initiatives or programs.

### Traffic Safety Benefits

Initial studies showed that some smart growth type road treatments, such as those that reduce speeds on local streets, reduce crash frequency and injury severity. Pedestrian-oriented treatments reduce crossing distances or provide other pedestrian protection. Proper pedestrian provisions, such as sidewalks on all streets,





Figure 3. Main Street, downtown Gresham, Oregon; principal commercial section of Main Street converted from four-lane street with parking and narrow sidewalks (foreground) to two lanes with parking and sidewalks widened to accommodate more pedestrians and sidewalk amenities (background).

help to separate pedestrians and vehicles. Hence, traffic safety can be improved in some areas by some smart growth improvements.

#### ***Vehicle-Miles of Travel (VMT) Reduction***

The research found estimates that internal residential neighborhood VMT for a networked street system can be about half of that for conventional neighborhoods with curvilinear, cul-de-sac street systems. While not quantified, it is reasonably expected that VMT reductions can accrue from:

- increased mixing of complementary uses;
- more compact development patterns; and
- reduction of sprawl.

Hence, using smart growth street and development patterns can reduce VMT per capita over time through redevelopment, infill, and development of new areas.

#### ***Reduced Infrastructure Requirements***

Infill and redevelopment, both smart growth concepts, can reduce the need for new infrastructure. Both infill and redevelopment can use existing infrastructure.

#### ***Linkage to DOT Objectives***

Many smart growth concepts and programs are already part of DOT policies and programs. For example, TxDOT has developed a draft comprehensive access management policy. TxDOT projects reflect attempts to be environmentally sensitive. Most TxDOT objectives can be met

using smart growth concepts. The same is true in other states. Hence, state DOTs can support most smart growth concepts and policies without compromising their existing goals or directions.

#### ***Texas Application***

The concepts and principles of smart growth are generally applicable in Texas, although some are not currently in use by TxDOT or in Texas. Aspects like compactness of growth, encouragement of infill and redevelopment, increasing multimodal transportation in major urban areas, access management, and use of enhancements on transportation projects are already happening or are about to happen in some areas with public acceptance and support. Most could produce results beneficial to Texas and are consistent with community objectives. TxDOT could support many policies and actions that result in smart growth without major policy shifts.

#### ***Smart Growth Needs Champions to Be Successful***

Experience indicates that smart growth represents enough of a philosophical change that it needs champions to be broadly successful. For example, in other states governors, legislators, or interest groups have raised the profile, importance, and benefits of smart growth and led efforts to have state agencies support or lead smart growth efforts.

TxDOT could initiate or strengthen some of its programs or practices consistent with smart growth and current policies and goals. However, for TxDOT (and other state agencies) to become a strong leader

of smart growth and to adopt programs like those of Maryland or Oregon would need strong direction, support, and possibly legislation at the state level.

## ***The Researchers Recommend . . .***

Based on the findings of this research, it appears that three additional tasks would benefit TxDOT:

- *Case studies of DOTs supporting smart growth*—Case studies would review state programs implemented to support or encourage smart growth as well as experiences, successes, shortcomings, and lessons learned to draw conclusions about how the findings might benefit Texas and could be adapted for use by TxDOT. These suggested additional case studies would provide more examples, particularly demonstrating the roles of state DOTs in supporting local smart growth initiatives.

- *Workshops to implement project materials*—The workshops, using training materials developed in this research project, would be geared to district planners and designers. Through these workshops, TxDOT staff would be introduced to the principles and applications of smart growth. The workshops would help promote the use of project materials and advance smart growth principles within Texas. Local agency staff could also be invited to attend, dependent on space available.

- *Guidelines for TxDOT involvement in smart growth*—Support of smart growth concepts and programs could help TxDOT accomplish some of its objectives and initiate some of its programs, as well as help to support local smart growth initiatives. Researchers recommend that guidelines or suggestions be developed for smart growth policies, programs, and related practices.



## *For More Details . . .*

The research for this project is documented in Report 4238-1, *Introducing Smart Growth To Texas: Research Report*. A primer providing background information on smart growth is also available as Report 4238-P1, *Introducing Smart Growth To Texas: Primer*. Workshop materials include a presenter's guidebook, Report 4238-P2: *Introducing Smart Growth To Texas: Instructor's Guidebook*, and a workbook for use by workshop participants, Report 4238-P3: *Introducing Smart Growth To Texas: Participant's Workbook*.

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## *TxDOT Implementation Status January 2003*

The following are the products identified for this project:

1. A research report documenting all findings of the research.
2. A primer that explains smart growth principles, practices, and applications.
3. Workshop materials, including an instructor's guide and student workbook. The workshop materials will reinforce the principles of smart growth and introduce the smart growth design process.

The primer and workshop materials are being finalized by TTI. A separate implementation project has been approved for conducting the workshops. Later in 2003, the researchers will conduct one-day workshops at four locations around the state. In addition, as part of the implementation project, the researchers will develop guidelines to help TxDOT utilize smart growth to support its own programs, as well as to interface with local smart growth initiatives.

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