Integrated transportation systems that reduce the demand on local roadways and the environment lead to more sustainable cities. A good public transit network can accommodate more travelers in the same space and create more efficient techniques for getting between home, jobs and stores. Buses, trolleys, subways, light rail, street cars, and ferries can all be designed as appealing methods of traveling that reduce the aggravation associated with traffic and promote economic vitality. Three approaches to public transit improvements are discussed below.

- Transit Oriented Development
- Transportation Demand Management
- Sustainable Energy Use

**Transit Oriented Development (TOD)**

Concentrating residential developments in areas served by transit is one way to improve access and markets for public transit. TOD is a land use and zoning strategy that encourages compact residential or commercial areas within walking distance, which is defined as a quarter to one-half of a mile radius of transit stations². A TOD district can be adopted into the local zoning ordinance as a mapped or overlay district for areas that are served by a reliable bus, trolley or light rail network.

Some researchers estimate that six to eight households per acre around bus stops would support bus service, while fifteen to twenty households per acre would support rail transit³. The Lindbergh TOD was recently established for the Lindbergh MARTA Station Area in Atlanta, Georgia, and maintains standards for 38 rail stations and over 91 bus routes.

**Transportation Demand Management (TDM)**

Transportation Demand Management is a strategy to reduce traffic at peak hours. Communities can employ a variety of methods to manage demand on the roadways. Options include promoting carpooling and the use of public transportation, encouraging employers to create flexible work schedules and the mixing of land uses. Transportation management programs are starting points for implementing TDM strategies, and are often funded through local, regional or state governments, and grants. These programs are generally found within transportation agencies or independent governmental agencies. They benefit from the cooperation of regional employers who share local concerns about the impact traffic has on their bottom line.

Transportation systems that reduce the demand on local roadways and the environment lead to more sustainable cities.
**Sustainable Energy Use**

Sustainable transport systems lead to more environmentally, socially and economically sustainable communities. In 2005, public transit use saved nearly 340 million gallons of gasoline\(^1\). Additionally, public transportation is far less greenhouse gas intensive, producing significantly less carbon dioxide and methane than a single occupant vehicle. **Hybrid school buses** are an excellent energy efficient example of public student transportation. The US Department of Energy is currently collaborating with Advanced Energy to pioneer 16 plug-in hybrid electric school buses around the nation.

Above: Percentage of US greenhouse gas emissions in 2006, the second largest being transportation. Source: [climate.dot.gov](http://climate.dot.gov/)

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<td><strong>Provide for a Compatible Mixture of Land Uses</strong></td>
<td>Use innovative zoning tools like <a href="http://www.dmr.ms.gov">Transit Oriented Development</a> to encourage mixed-use communities and buildings</td>
<td>Incorporate <a href="http://www.dmr.ms.gov">census-based transportation</a> planning Address specific transportation needs of <a href="http://www.dmr.ms.gov">rural and agricultural</a> areas</td>
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<td>Improve <a href="http://www.dmr.ms.gov">transportation options</a> by utilizing <a href="http://www.dmr.ms.gov">Transportation Demand Management (TDM)</a> strategies Connect with other <a href="http://www.dmr.ms.gov">commuters via the web</a> to share transportation Provide <a href="http://www.dmr.ms.gov">commute options</a> for employees of large companies</td>
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<td><strong>Strengthen and Direct Development Towards Existing Communities</strong></td>
<td>A TOD <a href="http://www.dmr.ms.gov">Overlay District Model</a> can help update zoning for existing communities</td>
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\(^{1}\) **Environmental Protection Agency:** [http://www.epa.gov/smartgrowth/pdf/Chicago%20SG%20Brownfields%20Project%20Final.pdf](http://www.epa.gov/smartgrowth/pdf/Chicago%20SG%20Brownfields%20Project%20Final.pdf)

*For a complete list of tools and resources, please see the “Tools & Resources Index” section of the Smart Growth and Sustainability Toolbox.*

[www.dmr.ms.gov](http://www.dmr.ms.gov)