

Hybrid City Toyota: Implementing a Dynamic, Low-carbon Society



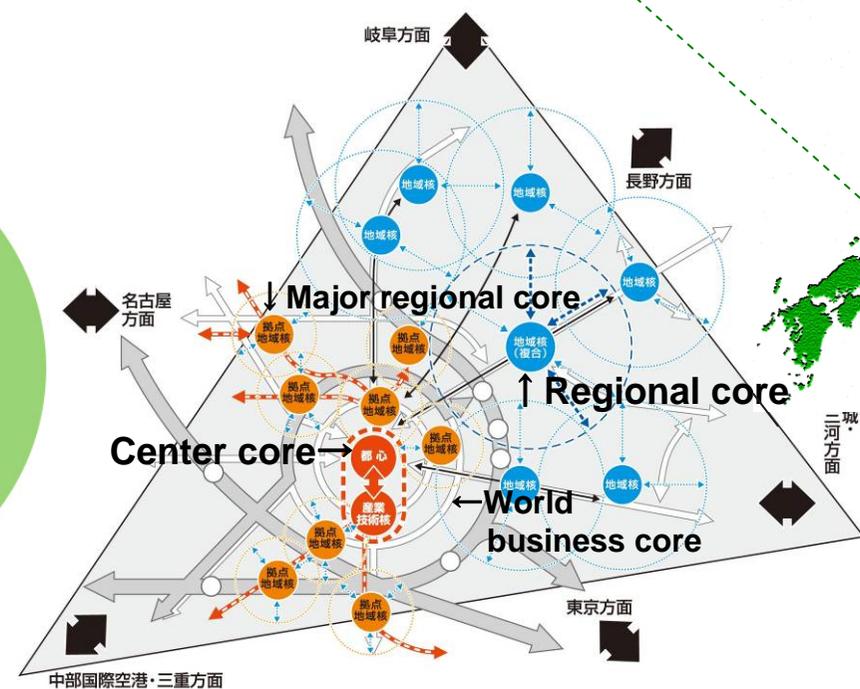
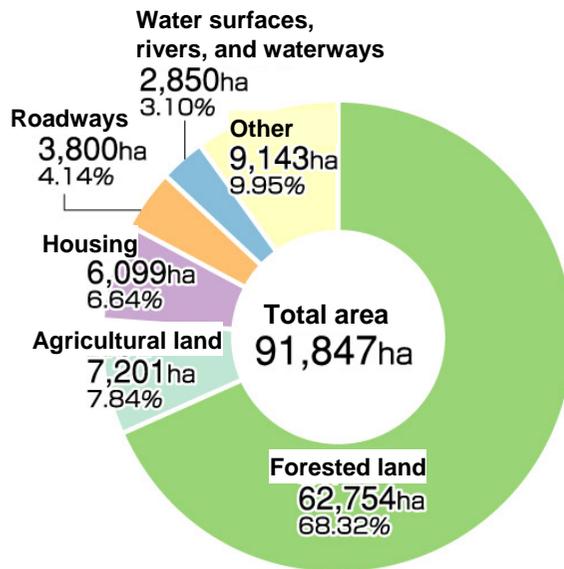
Toyota Profile

No. 7 Toyota General Plan 2008 to 2017
 “The City of Toyota, a city of radiant people, environmental consciousness, and dynamic growth”

- ◆ **Population: 423,940 (as of August 1, 2009)**
- ◆ **Area: 918.47 km²**
- ◆ **Value of shipped manufactures, etc.: No. 1 in Japan**
- ◆ **Consolidation of surrounding communities has resulted in 70% of the city’s area being forested.**
- ◆ **The industrial city coexists with depopulated areas in intermediate and mountainous areas.**



City of Toyota



- ➡ Automobile right of way or major regional highway
- ➡ National highway or inner/outer loop line, etc.
- Interchange (including smart interchanges)
- ➡ Rail line, etc.
- ➡ Major bus route
- ➡ Regional transportation
- ➡ Access to combined regional centers

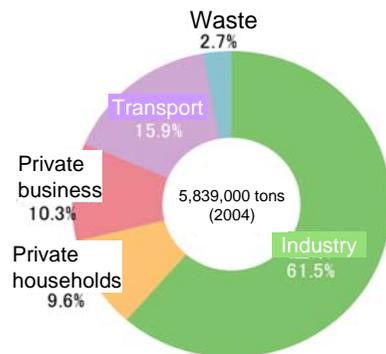
Hybrid City Toyota
Eco-Model City

Illustration of future city structure (a multi-core networked city)

Overview of Eco-Model City Action Plan

Hybrid City Toyota

Current CO2 emissions (2004)

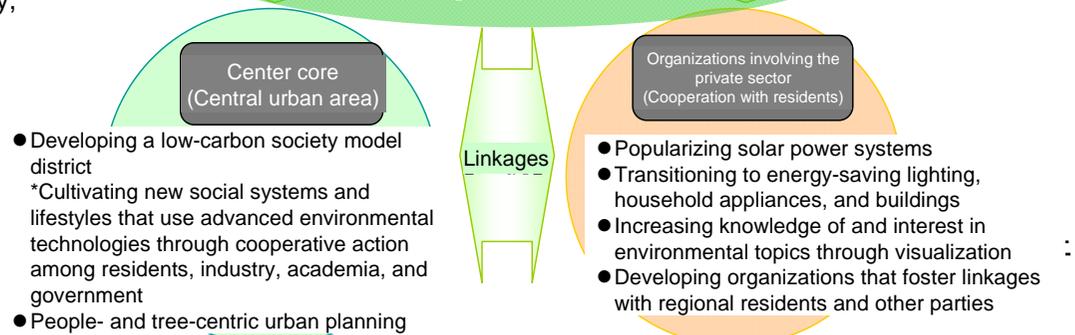
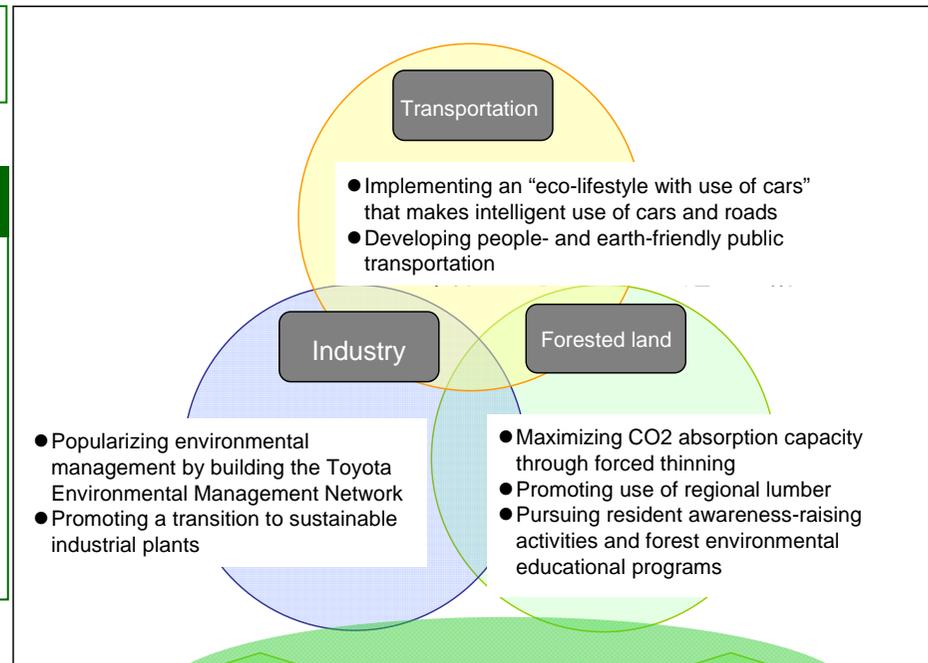


CO2 reduction targets

Mid-term targets (2030)
 Minimum target: 30% reduction
 Stretch target: 50% reduction

Long-term targets (2050)
 Minimum target: 50% reduction
 Stretch target: 70% reduction

- Pursue initiatives designed to bring about a dynamic, low-carbon society by combining people, the environment, and technology (in a hybrid approach) in the three domains of transportation, industry, and forested land.
- Symbol that disseminates information to internal and external audiences: center core
 ⇒ Visualization through the prioritized introduction of advanced environmental technologies
 ⇒ Application to actual urban planning and city infrastructure
- Develop private-sector initiatives that combine environmental and lifestyle technologies to support initiatives in each domain.



Note: What is a hybrid approach?

Toyota's hybrid approach is designed to improve the city's environmental responsibility and maintain and enhance its dynamic character by creating new value and new mechanisms through the combination and comprehensive application of separate technologies and other disparate elements.

Low-carbon Urban Planning Initiative (1): Public Transportation and Urban Planning

Simultaneous pursuit of public transportation policies and a compact approach to urban planning

The No. 7 Comprehensive Plan: Toyota's master plan

"The City of Toyota, a city of radiant people, environmental consciousness, and dynamic growth"
⇒ A multi-core networked city

Eco-Model City (January 2009)

"Hybrid City Toyota"
⇒ A bold transition to public transportation

- Environmentally friendly urban planning with a focus on train stations
- Elevation and double-track conversion of the Meitetsu Mikawa Line
- Enhancement of bus policy and station junction functionality

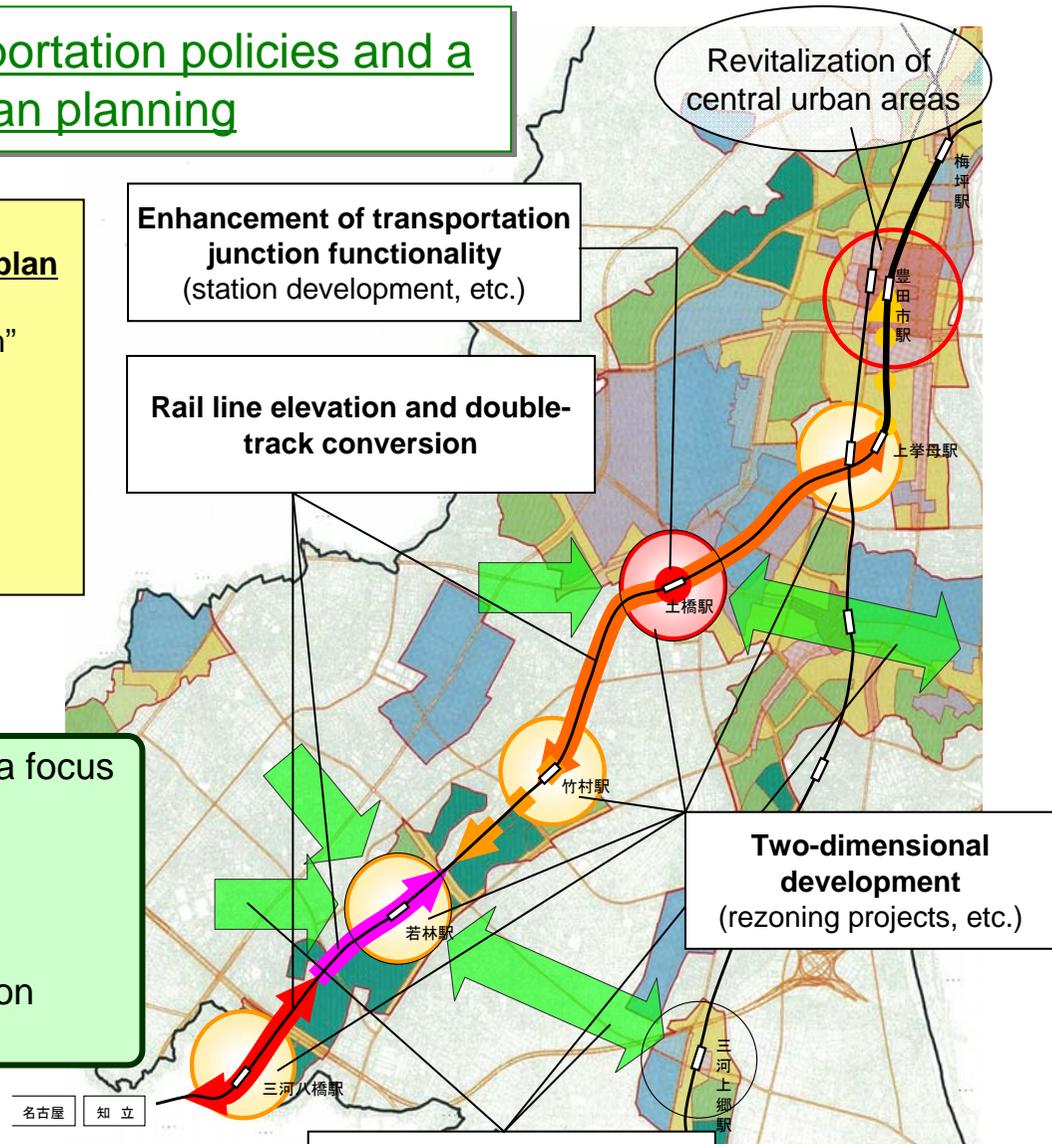
Enhancement of transportation junction functionality (station development, etc.)

Rail line elevation and double-track conversion

Revitalization of central urban areas

Two-dimensional development (rezoning projects, etc.)

Linkages with bus policy



Hybrid City Toyota

Eco-Model City

Low-carbon Urban Planning Initiative (2): Introducing a New Public Transportation System

A community with people- and earth-friendly public transportation

Toyota is introducing a pioneering system that envisions the public transportation of tomorrow on certain routes, where it serves as a model of how residents will move about the city in the future.

New public transportation system

New vehicles

- Fuel cell-powered automobiles
- People-friendly vehicles featuring an innovative design
- Computerized vehicles and shared IC cards

New bus stops

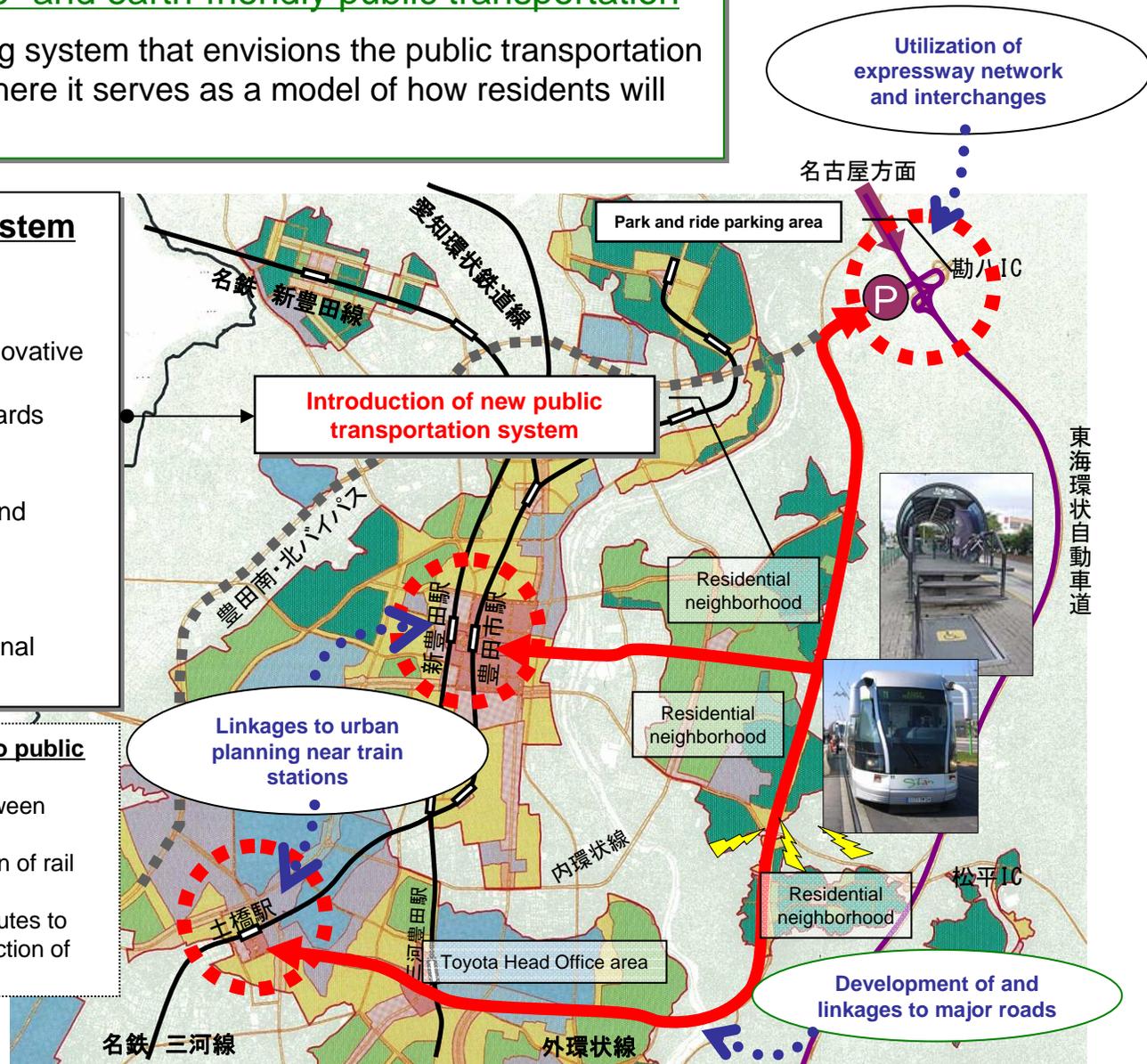
- Comfortable shelters
- Information about current bus location and other information

New roads

- Priority lanes and exclusive-use lanes
- Priority travel with upgrades to traffic signal control

Examples of related initiatives: Transition to public transportation

- Promotion of TDM through cooperation between residents and businesses
- Unified promotion of double-track conversion of rail lines and station-centered urban planning
- Expansion of major bus and regional bus routes to enhance and complement rail lines; introduction of hybrid vehicles



Low-carbon Urban Development Initiative (3): Popularizing Next-generation “Eco-cars”

Popularizing next-generation “eco-cars” that use natural energy

Toyota is working toward a community where cars use natural energy by popularizing next-generation “eco-cars” and solar power.

Fiscal 2009

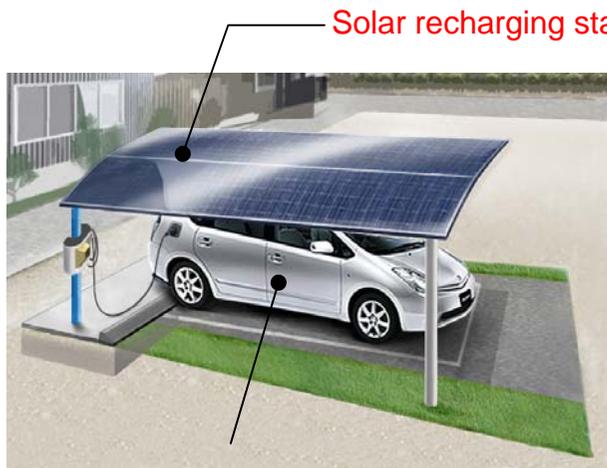
Construction of 13 solar recharging stations
(with enough capacity for 23 cars)
Introduction of 20 plug-in hybrid vehicles

*Subsidies for residential solar installations (cumulative total):
Approx. 3,100 households (as of August 2009)

Starting in fiscal 2010~

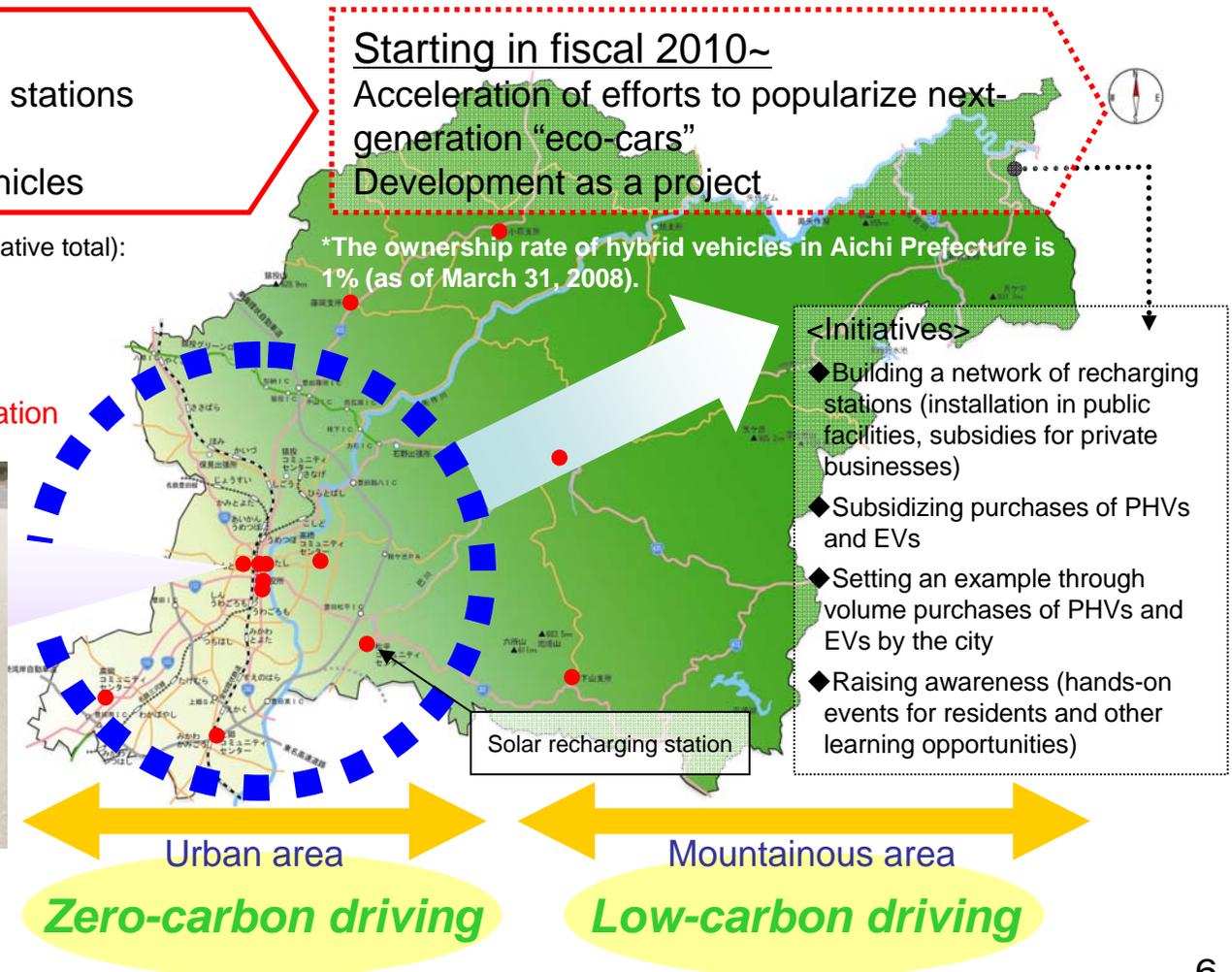
Acceleration of efforts to popularize next-generation “eco-cars”
Development as a project

*The ownership rate of hybrid vehicles in Aichi Prefecture is
1% (as of March 31, 2008).



Solar recharging station

Plug-in hybrid vehicle (PHV)



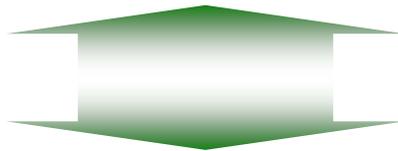
Low-carbon Urban Planning Initiative (4): People- and Tree-centric Urban Planning

The center core area as an Eco-Model City symbol

Toyota is creating low-carbon, tree-rich urban spaces that give priority to people in an effort to disseminate information about low-carbon lifestyles from center core areas.

- Creating urban spaces that give priority to people
 - ⇒ Limiting vehicle access to center core areas
 - ⇒ Improving the convenience of public transportation as a means of accessing center core areas
 - ⇒ Burying power lines and other utilities in walkable areas and creating barrier-free spaces

- Creating low-carbon, tree-rich urban spaces
 - ⇒ Developing city parks and planting trees in public spaces
 - ⇒ “Greenifying” buildings (rooftops and walls)
 - ⇒ Developing public facilities that set an example in the introduction of environmental technologies



Implementing the low-carbon city and lifestyle of the future with a low-carbon society model district

Outer green loop

Green environmental city axis



Hybrid City Toyota
Eco-Model City

Low-carbon Urban Planning Initiative (5): Implementing a Low-carbon Society Model District

A mini-town where visitors can experience an advanced, low-carbon society where people can live, relax, gather, and learn together

Building a foothold for implementing low-carbon urban planning

- A town where residents can actually live provides a means of testing advanced environmental technologies and systems in daily life.
- Visualizing a comfortable, low-carbon lifestyle

Creating an environment conducive to the development of new environmental industries

- Working to implement a new, low-carbon social system through cooperation among residents, industry, academia, and government
- Combining initiatives from different fields and experimenting with diverse approaches

Experiencing the comfortable, low-carbon community of the future in Toyota

Accelerating the introduction of related technologies and approaches and their popularization in actual society

*Implementing low-carbon urban areas and lifestyles

Example: Encouraging environmentally aware rezoning, housing development, and redevelopment projects

*Effecting a low-carbon transformation in the community as a comprehensive social system, rather than through individual technologies



Utilization of natural energy



PHV charging stations that use natural energy



Zone cooling with water and trees



Personal robot



Artist's conception of how people and transport might coexist



"Seamless" transportation



Introduction of advanced greenification and environmental technologies