

SIM

CITY

THE ORIGINAL CITY SIMULATOR



SAN FRANCISCO



DATE 1993



USER'S



MANUAL



BUDGET ENERGY

The Budget panel features a horizontal bar with a plus sign on the left and a minus sign on the right, and a dollar sign icon. The Energy panel features a line graph showing a fluctuating energy level.

DISASTERS

The Disasters panel contains five buttons, each with a different disaster icon: a horse (earthquake), a flame (fire), a falling object (air raid), a lightning bolt (lightning), and a lightning bolt (nuclear). Each button has an up arrow on top and a down arrow on the bottom.

COMMERCIAL RESIDENTIAL INDUSTRIAL

A vertical panel with three circular buttons labeled 'COMMERCIAL', 'RESIDENTIAL', and 'INDUSTRIAL'.

Windows™



Blank Page

SIMCITY CLASSIC™

THE ORIGINAL CITY SIMULATOR

FOR WINDOWS

USER MANUAL

SimCity User Manual by
MICHAEL BREMER

History of Cities and
City Planning by
CLIFF ELLIS



SIMCITY CLASSIC™

FOR WINDOWS

CREDITS

CONCEPT AND DESIGN: WILL WRIGHT

Contributions to Design: Jeff Braun, Robert Strobel
Windows Programming: TouchGo™ Studios and AZEROTH®
Computer Artwork: Don Bayless, Will Wright, Scott Martindale
Art Direction: Jenny Martin
Title Screen: Suzie Greene

Package Design: Jamie Davison Design, Inc.
Package Illustration: Dan Cosgrove
Documentation Design: Richard Bagel, Kurt West,
Christopher Yoro

Documentation: Michael Bremer, Cliff Ellis
Contributions to Documentation: Tom Bentley, Steve Beckert

The Maxis SimCity for Windows Team:

Producers: Steve Beckert, Michael Perry
Marketing: Pam Schrauwen, Larry Lee
QA and Testing: Alan Barton, Chris Weiss
Technical Support: Carter's Clambake Party
Customer Service: Steve Abrew and his "posse"
Manufacturing: Val Garcia, Kim Vincent
Music: Russell Lieblich

Special thanks to: Jeff Braun, Brian Hales, Bruce Joffe,
Joell Jones, Edward Kilham, Kazue Osugi, Akila Redmer,
and Broderbund Software

Dedicated to Cassidy and Maxine the Cow

MAXIS

2 THEATRE SQUARE
ORINDA, CA 94563-3346
TEL: 510-254-9700
FAX: 510-253-3736

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FOREWORD

INTRODUCTION

SimCity is the award-winning* city planning simulation game. Designed as a game for thinking adults, it soon became a favorite of adults of all ages—down to six or seven years old.

When you play SimCity, you design, build, and manage cities. You can design your own dream city from the ground up, or take over existing cities such as San Francisco, Tokyo, and Rio de Janeiro. Along the way you will deal with the planning and environmental issues of today, as well as disasters like fires, floods, earthquakes, air crashes, and an occasional monster.

Your cities are populated by Sims—Simulated Citizens. Like their human counterparts, they build houses, condos, churches, stores and factories. And, also like humans, they complain about things like taxes, mayors, taxes, city planners, and taxes. If they get too unhappy, they move out; you collect fewer taxes, and the city deteriorates.

SimCity is a game, but it has found its way into classrooms that teach everything from third grade civics to Master's level courses in city planning.

Above all, SimCity is fun. It's a building, planning, growing, thinking, problem-solving, strategic game. And with this new version of SimCity that runs under Microsoft Windows, which is primarily a serious business environment, we will try to teach the offices of the world that:

Fun is Serious Business™!

*Its combination of entertainment and education has won SimCity many awards, including:

World Class Award, 1990, 1991 — *Macworld Magazine*

Software Award of Excellence, 1990-1991 — *Technology & Learning Magazine*

Most Innovative Game, 1990 — *Computer Game Developer's Conference*

Best Educational Program, 1990 — *European Computer Leisure Award*

Best PC Game, 1989 — *Game Player's Magazine*

Game of the Year, 1989 — *Computer Gaming World Magazine*

Editors' Choice Award, Best Simulation, 1989 — *Compute Magazine*

Editors' Choice Award, Best Recreation Program, 1989 — *MacUser Magazine*

Best Game Designer of the Year, Will W right, for SimCity, 1989 — *Computer Entertainer Magazine*

Best 20th Century Computer Game, 1989 — Charles S. Roberts Award

Best Entertainment Program, Best Educational Program, Best Simulation, and

Critics' Choice: Best Consumer Program — *Software Publishers Association 1989*

ABOUT SYSTEM SIMULATIONS

SimCity is a type of entertainment/education software we call a **SYSTEM SIMULATION**. We provide you with a set of **RULES** and **TOOLS** that describe, create and control a system. In the case of SimCity, the system is a city.

The challenge of playing a **SYSTEM SIMULATION** game is to figure out how the system works and take control of it. As master of the system, you are free to use the **TOOLS** to create and control an unlimited number of systems (in this case cities) within the framework and limits provided by the **RULES**.

In SimCity, the **RULES** to learn are based on city planning and management:

Human factors – residential space and amenities, availability of jobs, and quality of life;

Economic factors – land value, industrial and commercial space, unemployment, internal and external markets, electric power, taxation, and funding for city services;

Survival factors – strategies for disaster recovery, crime, and pollution;

Political factors – public opinion, zoning, and keeping residents and businesses satisfied with your city and your performance.

The **TOOLS** provide you with the ability to plan, lay out, zone, build, bulldoze, re-zone, and manage a city:

Plan – Mapping systems give physical and demographic overviews of the entire city.

Lay out – Design living and working areas, road and transit systems, and recreational areas.

Zone – Set zoning boundaries for parks and residential, commercial and industrial areas.

Build – Place roads, rails, airports, seaports, fire and police stations, sports stadiums, and power plants.

Bulldoze – Clear forests for city growth, build landfill along waterways, clear and re-zone developed areas.

Manage – Using the mapping and graphing systems, gather up-to-date information on traffic density, population trends, power grid status, pollution, crime, land value, police and fire department efficiency, and cash flow. Set the tax rate and funding levels for city services.

But the most important **TOOL** of all is the Simulator itself. Test your plans and ideas as you watch the city grow or shrink through the immigration and emigration of industrious Simulated Citizens. Sims will move in and build homes, hospitals, churches, stores and factories in the zones you provide, or move out in search of jobs or a better life elsewhere. The success of the city is based on the quality of the city you design and manage.

SIMULATOR REACTION TIME

The simulator is a very complex multitasking piece of software. It is constantly performing many checks, calculations, and updates, as well as keeping watch on the mouse and keyboard to respond to your demands. When you load in a city, give the simulator a few minutes to compile its data and update the maps, graphs, population levels, etc. Some of the other times when the simulator lags behind are when powering zones and updating the city services map after installing police and fire stations.

Simulator reaction time is also greatly affected by your computer's clock speed and type of microprocessor. If you have an AT or compatible with a 286 running at 6 or 8 MHz, life in SimCity will be much slower than on a 486 running at 33 MHz. To speed up time on a slow machine, see **FREQUENT ANIMATION**, and **ANIMATE ALL** in the **OPTIONS MENU**.

THE GOALS OF SIMCITY SCENARIOS

There are many goals to be pursued and reached in SimCity.

Each of the eight included Scenarios is actually a game in itself, with an unlimited number of ways to win—or lose.

Each Scenario is a city that is either the victim of horrible planning or about to be the victim of a natural disaster. After you load in a Scenario, you will have a limited amount of time to correct or repair the problems. If you are successful, you will be given the key to the city. If not, you may be ridden out of town on a rail.

If one strategy doesn't work, try another. There are a million stories in each city, and you write them.

YOUR DREAM CITY

Perhaps the main goal of SimCity is for you to design, manage and maintain the city of your dreams.

Your ideal place to live may be a bustling megalopolis, lots of people, lots of cars, tall buildings; high-energy, high-density living. Or it may be a small rural community, or a linked group of small communities providing slow-paced country living.

As long as your city can provide places for people to live, work, shop and play, it will attract residents. And as long as traffic, pollution, overcrowding, crime or taxes don't drive them away, your city will live.

SIMCITY FOR WINDOWS FEATURES

COMPATIBILITY

City files for SimCity for Windows are not only compatible with SimCity for DOS, but also with SimCity for Macintosh, Amiga, and Atari ST, as well as the SimCity Terrain Editor™.

GRAPHICS

SimCity for Windows supports the following Windows graphics modes:

- EGA high-res – 640x350 in 16 colors

- VGA – 640x480 in 16 colors (or grey scales)

- Super VGA – including 800x600 and 1024x768 in 16 colors.

It can be run in “Hercules” mode, or “VGA with a monochrome monitor” mode, but it’ll look real stinky—it will only be black and white, no grey scales. If you run in regular VGA mode with a black and white VGA monitor that displays grey scales, it will look OK, but not as nice as with color.

SIMCITY GRAPHICS SETS 1 & 2

You can spice up your cities’ looks and experience them in different times and different places with SimCity Graphics™, available at your local software store. There is no special Windows version of the SimCity Graphics Sets, but the regular IBM versions of both **Set 1—Ancient Cities**, and **Set 2—Future Cities** can be used with SimCity for Windows.

Note: For the SimCity Graphics Sets to work with SimCity for Windows, they MUST be installed using the install program that comes with SimCity for Windows. Do NOT use the install program that comes with the Graphics Sets.

SIMCITY TERRAIN EDITOR

The SimCity Terrain Editor, now included with SimCity Classic, allows you to custom-design landforms for your cities, modify the landforms of existing cities, and more. There is no special version of the Terrain Editor for Windows, but you can run it under Windows as a DOS program. Consult your Windows manual for instructions.

SOUND

SimCity for Windows has two types of sounds, background music and sound effects. They can be turned on or off individually. The music and sound support all Windows 3.1 compatible sound cards. You must have the appropriate sound drivers installed. Check your Windows manual and sound card manual.

PRINTING

SimCity for Windows doesn't directly support printing. It will let you write your city to disk in .PCX format, which can be loaded into most paint programs (including Paintbrush, which comes with Windows). Once in the paint program, you can edit it, add street names, building names, borders, etc., and print it.

KEYBOARD AND MOUSE

Like any other Windows program, SimCity for Windows can be played without a mouse, but it is much easier to control with one.

There are a number of keyboard shortcuts to help you find your way around SimCity without a mouse. And even mouse users will speed up their play by using a combination of mouse and keyboard controls.

The **KEYBOARD REFERENCE CHART** on the System/User Reference Card that comes with the game lists all the keyboard shortcuts.

SimCity for Windows follows the standard Microsoft Windows interface rules for windows and menus. In many places, we also use the **SPACE BAR** or **INSERT KEY** to "click" and emulate the **LEFT MOUSE BUTTON**, and the **DELETE KEY** to emulate the **RIGHT MOUSE BUTTON**.

DIFFERENCES FROM DOS SIMCITY

SimCity for Windows is very similar to the DOS version. There are a few interface differences, due to the way Windows works, and a few extra features to make playing easier and more fun. The main differences are:

- A great new title screen with Maxine the Cow.
- The Windows interface (of course).
- A fancy new *control bar for easy window and option control.*
- No yucky red sheet copy protection!!
- Floating toolboxes for the Edit, Map, and Graph Windows.
- Bookmarks to easily mark and return to any location in the Edit or Map Window.
- New background music.
- On-line Help using the standard Windows Help system.
- A number of different keyboard commands for those without mice.

GETTING STARTED

If you already have the DOS version of SimCity, you may keep it there or remove it. Installing SimCity for Windows won't change it or erase it or move it or even talk to it.

Before you can run SimCity for Windows, you must install it to a hard disk. This package includes 3 1/2" disks. If you need 5 1/4" disks see the free disk offer card in the box.

You will need approximately 2MB free space on your hard disk to install SimCity, plus about 100K for each additional Graphic Set you install, plus more space to store the cities you create (approx. 30K per city).

RUNNING THE INSTALL PROGRAM

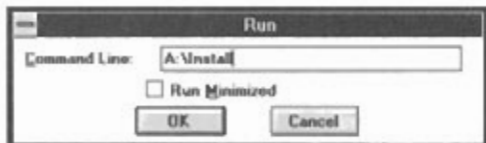
Boot your computer.

Put the 3 1/2" Disk #1 (or the 5 1/4" Disk #1 if you ordered it) in your A: or B: floppy drive.

Start Windows, and open the **PROGRAM MANAGER**.

Open the **FILE MENU** and select **Run...**

In the Run Dialog Box, type **A:INSTALL**, or **B:INSTALL**, then click **OK** or hit **RETURN**.



After you start the **INSTALL** program, a dialog box will appear. It will display three choices: **Install SimCity for Windows**, **Install Graphics Sets**, and **Display Readme File**, each with a button. You can click on any or all of the three buttons, then click **CONTINUE** or hit **RETURN**.

If more than one choice has been checked, then they will all be performed by the **INSTALL** program, in order. You don't have to choose all of them. You can always go back and use the **INSTALL** program to install the Graphics Sets or view the **README** file later.

INSTALLING SIMCITY FOR WINDOWS

INSTALLING SIMCITY GRAPHICS SETS

INSTALLING SIMCITY

Another dialog box will appear, asking you to type in your name (to personalize your copy of SimCity), and to type in where you want to install SimCity. The default location is C:\SIMCITYW. If you're happy with that, just click **CONTINUE** or hit **RETURN**. If you want to put it in another directory, type in the new location, then click **CONTINUE** or hit **RETURN** to actually begin the installation.

Follow the instructions on the screen when you are asked to change disks. When the installation is done, you will see a message that tells you that SimCity for Windows has been successfully installed.

The SimCity for Windows icon will be installed in a MAXIS Program Group. We do this to subtly hint that you fill this group with lots and lots of our fine products, but if you think we're being too presumptuous, you can drag the SimCity for Windows icon to any other group you want, then cruelly and viciously delete the Maxis Group.

If you selected **Install Graphics Sets** in the opening dialog box, you will next see the Install Graphics Sets dialog box. Insert an original Graphics Set disk in a drive, then select the A: or B: drive to tell the program where to look for the sets.

Note: Even if you have the Graphics Sets installed to work with SimCity for DOS, you will have to re-install them for them to work with SimCity for Windows. And they must be installed with the install program that comes with SimCity for Windows, not the install program that comes with the Graphics Sets.

Click on the **READ DISK** button. The Graphics Sets that are on the disk and available for installing will be listed on the left side of the dialog box. Next, click on and highlight the name(s) of the Graphics Set(s) you want to install, then click **INSTALL** to begin installation. As the Graphics Sets are installed, they will be listed on the right.

Warning: Wait until the installation program stops and the light goes out on your disk drive before removing the disk.

If you want to install more sets from another disk, remove the disk from the drive, then insert the new disk and click on the **READ DISK** button again. The available sets on the new disk are displayed. You can select them and install them as before. Repeat the process until you have installed all the sets you want, then click **DONE**.

DISPLAYING THE README FILE

If you checked **Display Readme** in the first dialog box, the Windows NOTEPAD accessory will open and display the text of the README.TXT file. This file contains any last-minute information about the program and additions, omissions, or corrections to this manual. When you are done, quit NOTEPAD.

This README.TXT file can also be displayed at any time using NOTEPAD or any other text editor without running the Install program.

Now you're ready to enter SimCity. Open the Maxis Group in the Program Manager, and double-click on the SimCity icon to start the game.

STARTING SIMCITY FOR WINDOWS





SimCity

TUTORIAL —

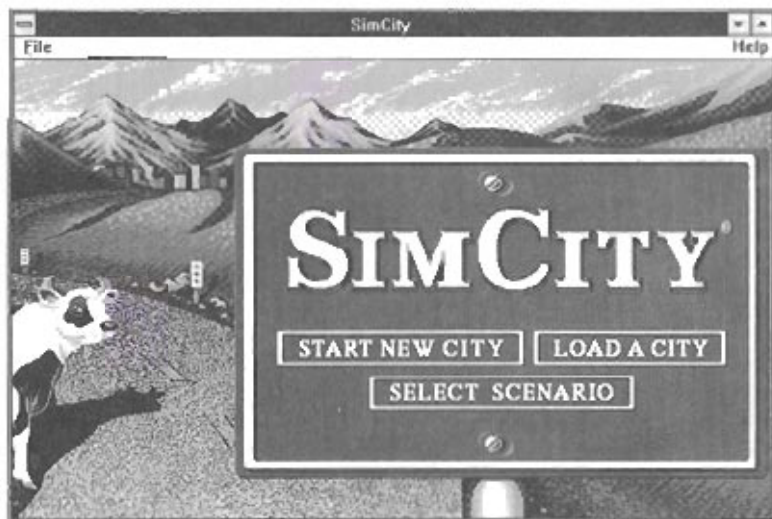
A WALK THROUGH YOUR CITY

Boot your computer, start Windows, and double-click on the SimCity icon to start SimCity.

SimCity for Windows follows all the standard Windows interface rules for menus, windows, and dialog boxes, whether you have a mouse or only use a keyboard. If you have any questions about controlling windows that aren't answered in this manual, consult your Microsoft Windows manual.

There are many keyboard shortcuts in SimCity to make life easier for those without mice, and even quicker for those with mice. They are all listed in the Keyboard Chart on the User Reference Card.

Note: For the rest of this tutorial, we will assume you are familiar with the basics of Microsoft Windows, and that you have a mouse. If you don't know how to use Windows, consult your Microsoft Windows manual. If you use Windows without a mouse, you must enjoy suffering, so we'll contribute by asking you to take a look through the "Controlling SimCity" segment of the Reference Section before proceeding with the tutorial. It explains all the tortures you have to go through to use Windows without a mouse.



After starting SimCity for Windows, the first thing you will see is Maxine the Cow standing near a road sign giving you the following choices: **START NEW CITY**, **LOAD A CITY**, and **SELECT SCENARIO**.

Click on "START A NEW CITY."

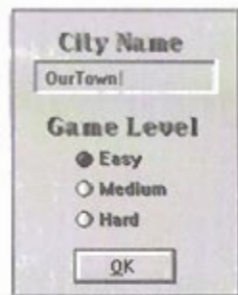
Now you will choose your city's name, and set the **GAME PLAY LEVEL**.

The default name is "Simwhere." If you wish to change it, type in your new name. For this tutorial, use the name "OurTown." You may use up to eight letters. The extension ".cty" will automatically be added to the end of the city name.

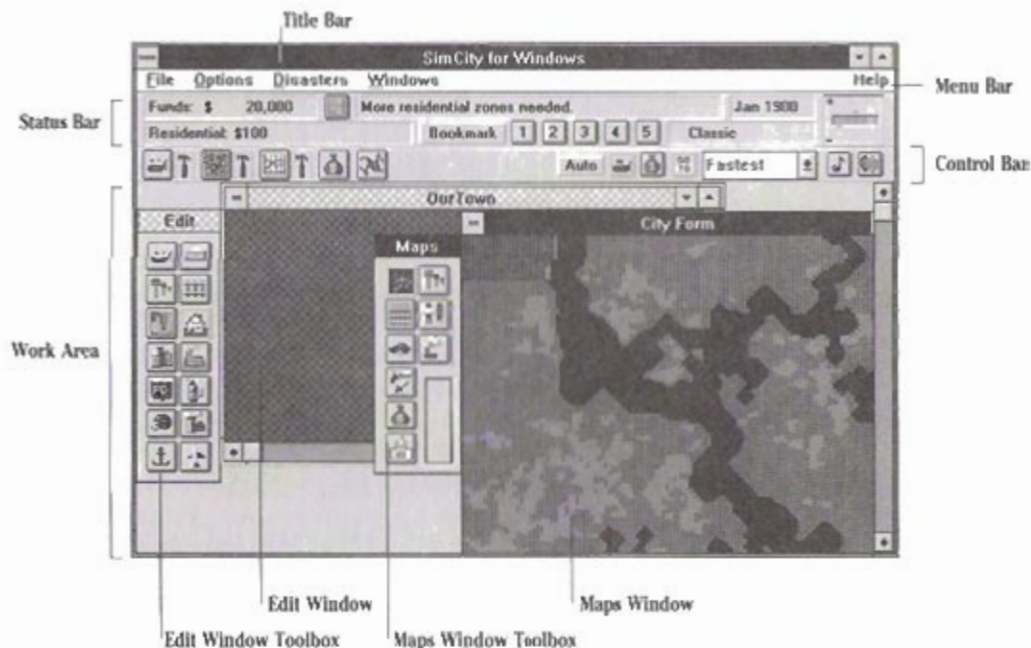
Once you have named your city, you can set the **GAME PLAY LEVEL**. To do this, just click on the button to the left of "Easy," "Medium," or "Hard." The **GAME PLAY LEVEL** changes many factors, including how much money you start with, how many disasters you will have, and how tolerant your Sims are. For now leave it at "Easy." Click on **OK** or hit RETURN.

You will see a progress bar that lets you know that a new landform is being generated.

You are now in the **SimCity WINDOW**. This is the "parent" window where all the SimCity "child" windows appear. All windows in SimCity for Windows follow the standard Microsoft Windows interface rules for moving, sizing, minimizing, maximizing, and closing.



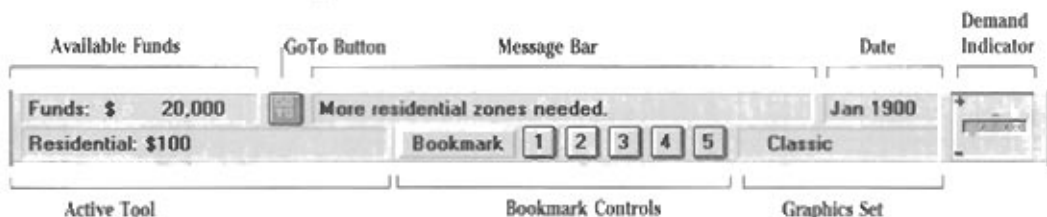
SIMCITY WINDOW



Along the top of the SimCity Window is the **TITLE BAR**, which displays the program name and has the usual Microsoft Windows window controls. Below the **TITLE BAR** is the **MENU BAR**.

Below the **MENU BAR** is the **STATUS BAR**, which displays important information about your city, and the **CONTROL BAR**, which provides helpful tools for controlling game options. Both the **STATUS BAR** and the **CONTROL BAR** can be turned off if you want to enlarge the **WORK AREA** below.

Below the **CONTROL BAR** is the **WORK AREA** where the windows that display your city or information about it appear.



STATUS BAR

In the top left corner of the **STATUS BAR** your current available **FUNDS** are displayed. Everything you do costs money, and this is the amount of money you have for zoning and building your city.

Below the **FUNDS** is the **ACTIVE TOOL DISPLAY**, which shows what tool is active for use in the **EDIT WINDOW**, and how much it costs to use it (in SimCity, not even the first time's free).

To the right of the **FUNDS** is the **GOTO BUTTON**, which will take you to the location mentioned (if any) in the **MESSAGE BAR** just to the right of the **GOTO BUTTON**. The **MESSAGE BAR** displays messages from the Sims who live in your city.

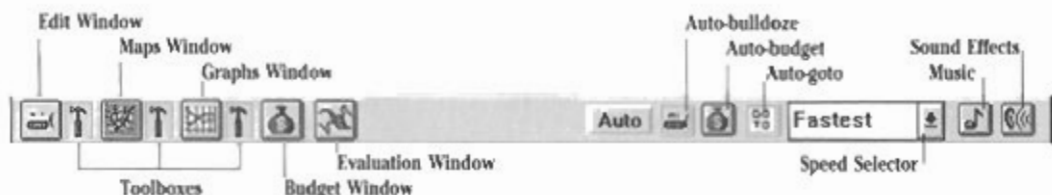
To the right of the **MESSAGE BAR**, your city's current **DATE** is displayed.

Below the **MESSAGE BAR** are the **BOOKMARK CONTROLS**. These controls let you mark locations in your city and quickly return to them.

Below the **DATE** is a display of the **GRAPHICS SET** currently in use. It will say *Classic* (the graphics that come with SimCity), unless you get the optional SimCity Graphics Sets to display your cities in alternate architectures from the past or future.

To the right of the DATE is the DEMAND INDICATOR. This shows your city's demand for commercial, residential and industrial zones. If the bar extends up, the demand is positive—the Sims want more of these zones. If the bar extends down, the demand is negative—there are more than enough of these zones. If there is no bar at all, then there are the right amount of zones. This indicator reacts slowly, so give it a few minutes to catch up with you after you put down some zones.

The CONTROL BAR is a row of buttons for setting game options.



The first eight buttons are for opening windows and toolboxes. There is a button for each of the following windows: EDIT, MAPS, GRAPHS, BUDGET, and EVALUATION.

The first three windows, EDIT, MAPS, and GRAPHS, each have a toolbox. The toolboxes for these windows can be turned on and off with the toolbox buttons (hammers) to the right of the window buttons.

The next three buttons are for setting auto-options. They toggle auto-bulldoze, auto-budget, and auto-goto on and off.

To the right of the auto-option buttons is the speed selector. The current speed is displayed. To change the speed, click on the arrow to see a list of possible speeds to run SimCity, then click on the one you want.

Next come two sound-option toggles. The first one toggles background music on and off. The second toggles sound effects on and off.

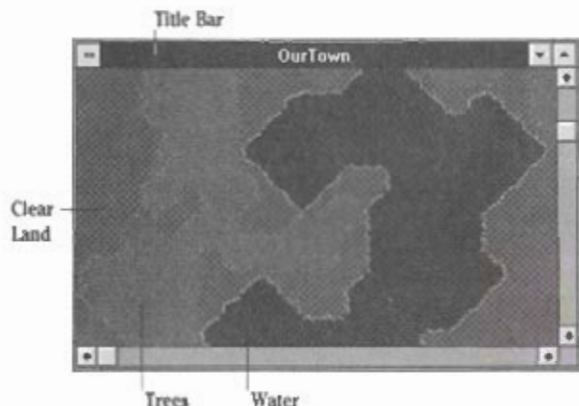
CONTROL BAR



When you first start SimCity for Windows, the MAPS WINDOW is open and active in the WORK AREA, along with the MAPS WINDOW TOOLBOX. Behind it is the EDIT WINDOW and the EDIT WINDOW TOOLBOX.

EDIT WINDOW

Let's take a look at the EDIT WINDOW. To activate it along with its toolbox, click on any part of it, or select EDIT from the WINDOWS MENU. The EDIT WINDOW is where you do the actual building and zoning of your city. At the top of the EDIT WINDOW is the TITLE BAR. It displays the name of the city.



The EDIT WINDOW can be maximized to fill the WORK AREA and minimized to an icon like any other window in Microsoft Windows.

The main portion of the window is the landform. Your available landform is made of three types of terrain, which will appear differently depending on your monitor. The brown areas are CLEAR LAND, the green areas are forests and TREES, and the blue areas are WATER. You can build only on CLEAR LAND. You can clear forest and extend coastlines with your BULLDOZER. You can run roads, rails and power lines across water.

EDIT WINDOW TOOLBOX



To scroll the terrain under the EDIT WINDOW, use the SCROLL BARS. If the terrain won't go in one direction, that means you are at a boundary of your territory.

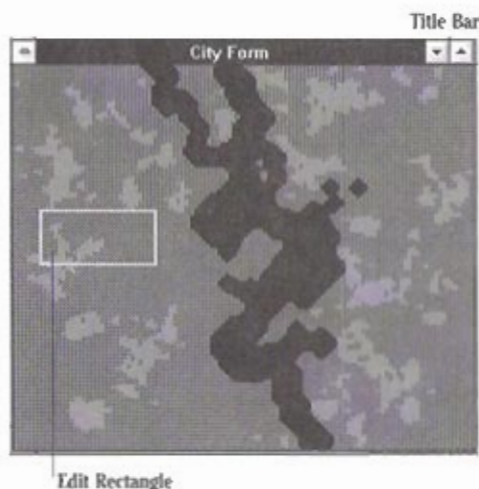
Along with the EDIT WINDOW is the EDIT WINDOW TOOLBOX. It has 14 icons representing your tools for zoning and building. Somewhere on the screen, even if you don't have a mouse, is the pointer. This will change size and shape depending on the active tool. Click on these tools to activate them.

You can move the EDIT WINDOW TOOLBOX around the screen separately from the EDIT WINDOW.

NOTE: The BUDGET WINDOW will pop up once a year in "city time." For now, when it does pop up, just click the GO WITH THESE FIGURES box at the bottom.

MAPS WINDOW

To get an overview of your entire city limits, look at the **MAPS WINDOW**. You can activate the **MAPS WINDOW** by clicking on any exposed part of it, or by selecting **MAPS** from the **WINDOWS MENU**.



This window displays many different demographic views of the city, chosen by the icons in the **MAPS WINDOW TOOLBOX**. The type of map is shown at the top of the **MAPS WINDOW**, in the **TITLE BAR**.

Somewhere in the **MAPS WINDOW** is the **EDIT RECTANGLE**. This rectangle outlines the part of the city that is shown close-up in the **EDIT WINDOW**. Click on and drag the rectangle so it covers a place on the map with open land, trees, and water. When you release the mouse button, the **EDIT WINDOW** will redraw at the new location.

MAPS WINDOW TOOLBOX



BUILDING A CITY



Coal
Nuclear



Now we'll go back to the EDIT WINDOW and build a city. The easiest way to get there is to just click on any exposed part of the EDIT WINDOW. It will be brought to the top, covering most of the MAPS WINDOW. When you have more than one window on the screen at a time, it is a good idea to leave a part of each one showing, so you can easily bring it to the top by clicking on it.

To begin a city we need: places for Sims to live, places for Sims to work, and power.

You can only build on clear land, so use the **BULLDOZER** to clear away some trees. Click on the **BULLDOZER ICON** in the EDIT WINDOW TOOL BOX. Move the pointer over to land. It is now a small square, outlining the area that will be bulldozed every time you click. Move your **BULLDOZER** pointer over some trees and click. The forest section under your pointer is now **CLEAR LAND**. Now, hold the button down and move the pointer slowly across the forest. Mass destruction. Clear a large area of land to prepare for building.

Click on the **RESIDENTIAL ICON**, then move back to your terrain. Your pointer is now a larger square outline. This outline indicates how much clear space you will need to create a Residential Zone—a place for Sims to live. Clicking in clear terrain "zones" the land. The "R" in the center of the zone indicates that it is a Residential Zone. The flashing lightning symbol indicates that the zone has no power. Place a few more Residential Zones adjacent to the first one.

NOTE: If you have trouble placing a zone, make sure it is on open land. You cannot zone on water or over other zones. You cannot zone over trees, unless you have Auto-Bulldoze activated.

Now decide where to position a **POWER PLANT** in your city. Click on the **POWER PLANT ICON**. A small menu will appear, giving you the option of choosing a coal or nuclear plant. For now, click on the **NUCLEAR POWER PLANT**. The outline for a Power Plant is even larger than for the Residential Zone. Place the Power Plant in some open space near your residential zones. If your Power Plant is not directly adjacent to a Residential Zone, you will need to run a **POWER LINE** from your Power Plant to the residential zones.

To do this, click on the **POWER LINE ICON**. Using your mouse, as you would in a paint program, lay **POWER LINES** from your Power Plant to your Residential Zones. Adjacent Power Line sections will automatically connect to each other. Roadways and Transit Lines connect in the same manner. In a moment, the flashing symbols in the Residential Zones will disappear,

indicating that your zones have been powered. Any zones that are adjacent to a powered zone do not need separate power lines run to them. Soon you will see small houses start to appear. The Sims have started to move in.

NOTE: *When you zone land, you designate where building is allowed. It is the Sims who actually build.*

Now that you have a few Residential Zones, you're ready for **COMMERCIAL** and **INDUSTRIAL** areas: places for the Sims to work, shop, and transact business. Select the **COMMERCIAL ICON** and place a few **COMMERCIAL ZONES** near your Residential ones. Then select the **INDUSTRIAL ICON** and place some **INDUSTRIAL ZONES**. Connect all necessary Power Lines.

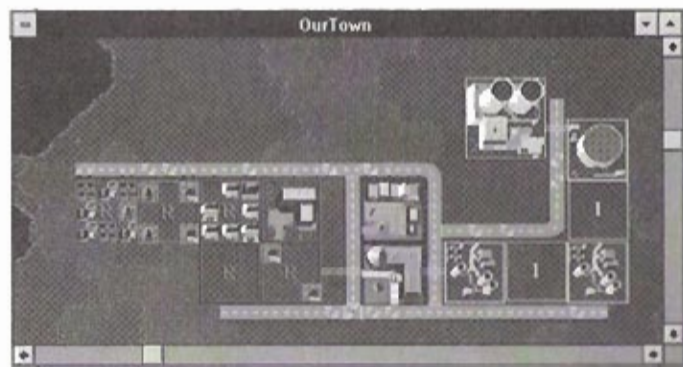


NOTE: *There is a delay between the time you connect power to a zone and the time the flashing lightning symbol disappears. This delay gets longer as your city gets larger.*

Notice that as you select different icons, the icon's description and its associated cost will be displayed in the **STATUS BAR** just below the **FUNDS**. If you do not have enough money in your treasury to pay for a certain function, that icon will be "ghosted" on your screen and is unavailable for use.



Before your new city can really begin to develop, you need roads. Click on the **ROAD ICON** and add roads from your residential housing to the commercial and industrial areas to allow the Sims to commute to work. Road sections connect themselves like Power Line sections. Once you have roads, traffic will be generated, and zones will develop.



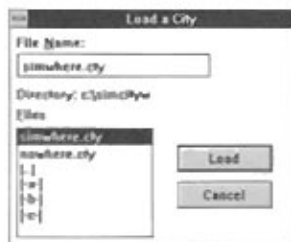


Now open the **BUDGET WINDOW** either by selecting BUDGET from the WINDOWS MENU or by clicking on the BUDGET WINDOW ICON (money bag) on the CONTROL BAR. This window is where you set the level of funding for your fire, police, and transportation departments. Click the **UP** or **DOWN ARROWS** to change the funding levels. You can also adjust the current property tax rate. If you have no police or fire departments, you can't fund them. You cannot fund more than 100%. Since your city is so new, you can't do much here now, but later, when your city is larger, you can cut the funding for the fire and police departments and for road maintenance and watch your city imitate real life. Click the **GO WITH THESE FIGURES** box when you are done.

Now click on any exposed part of the **MAPS WINDOW** to bring it to the front. You can get an idea of the size of your city, and how much room you have left. Try the different map views by clicking on the icons in the MAPS WINDOW TOOLBOX. You will need this information to build and adjust conditions in your city. For example, you can pinpoint the areas with the highest crime to determine locations for new police stations.

Additional information can be gained through the available **GRAPHS**. Unlike the maps, which only show the current state of your city, the graphs give you a record of the past so you can gauge trends and cycles.

Another way to gather information about your city is by using the **QUERY FUNCTION**. To use this, point to any area of your city in the EDIT WINDOW, hold down the "Q" key, and press and hold the left mouse button. You will be shown a window filled with information on the area under the pointer.



Now, let's **SAVE** the city to disk. Open the FILE MENU and select **Save City**. You will see the File Saving Dialog Box. SimCity files are saved like any other files under Microsoft Windows. When you save them, the **.CTY** extension will be added automatically. To load a city, open the FILE MENU and select **Load City**. You will see the File Loading Dialog Box. Only files with the **.CTY** extension will be displayed. Either double-click on the city name you want to load, or highlight it and click the **LOAD** button.

This is all the basic information you need to run SimCity, but we suggest reading on. The **User Reference** section explains in detail how to use each program function. **Inside SimCity** explains the inner workings of the simulator, and gives some hints and tips for using it. There is also an essay on **The History of Cities and City Planning**, and a **Bibliography** for serious City Planners.

USER REFERENCE

IN GENERAL

In general, SimCity follows all the standards and conventions of the Microsoft Windows interface. You can select which windows are displayed. Windows can be moved around the screen. They can be brought to the front or hidden by selecting the appropriate WINDOWS MENU function, clicking on the CONTROL BAR, or using keyboard commands. Some windows can be resized. If you arrange the windows so there is always a part of each one showing, you can bring a window to the front by clicking on any part of it.

THE MOUSE

In SimCity, as in other Windows-based programs, your mouse is your friend. Playing without it is possible, but difficult. SimCity primarily uses the left mouse button. The main function of the right mouse button is to activate the bulldozer function. If you have a middle button, SimCity ignores it.

SimCity follows the standard Microsoft Windows rules for using menus, pressing buttons, checking boxes, moving windows, etc.

There are some functions in SimCity that are only activated through the keyboard. There are also keyboard shortcuts that can be used along with the mouse to speed up operation of SimCity. These are all explained below, and in the KEYBOARD REFERENCE CHART.

THE KEYBOARD

There are many keyboard functions in SimCity. Keep the KEYBOARD REFERENCE CHART handy.

GETTING HELP

At any time you need help with menus, controls, or windows, press F1.

INSERT, DELETE AND THE SPACE BAR

The INSERT and SPACE keys emulate the left mouse button.
The DELETE key emulates the right mouse button.

CURSOR KEYS AND NUMERIC KEYPAD

The CURSOR keys are very useful in the EDIT and MAPS WINDOWS if you are running SimCity without a mouse. When the EDIT WINDOW is active, they

CONTROLLING SIMCITY FOR WINDOWS

move the pointer associated with the current editing tool around the window. When the **MAPS WINDOW** is active, they move the **EDIT RECTANGLE**. The other keys on the numeric keypad also move the pointer:

- Home** moves the pointer one space up and one to the left.
- End** moves the pointer one space down and one to the left.
- PgUp** moves the pointer one space up and one to the right.
- PgDn** moves the pointer one space down and one to the right.
- 5** moves the pointer to the center of the window.

When used with the **CTRL** key, the above keys move the pointer faster:

- Ctrl-Left** moves the cursor to the far left of the window.
- Ctrl-Right** moves the cursor to the far right of the window.
- Ctrl-Up** moves the cursor to the top of the window.
- Ctrl-Down** moves the cursor to the bottom of the window.
- Ctrl-Home** moves the cursor to the upper-left corner of the window.
- Ctrl-End** moves the cursor to the lower-left corner of the window.
- Ctrl-PgUp** moves the cursor to the upper-right corner of the window.
- Ctrl-PgDn** moves the cursor to the lower-right corner of the window.

The above keys, when used with the **ALT** key, scroll the terrain under the **EDIT WINDOW** one full page.

TAB & SHIFT-TAB

If you are not using a mouse, then **TAB** and **SHIFT-TAB** are very helpful. They cycle the pointer around the "Hot Spots" of any window, message box or control bar. Hot Spots are places where you can type in something, activate an icon or change a setting. For example, in the toolboxes, instead of using the **CURSOR KEYS** to move the pointer to an icon and clicking, you can hit the **TAB** and **SHIFT-TAB** keys to cycle through the icons.

Q activates the **QUERY** function — this gives you information on items or areas in the city. While in the **EDIT WINDOW**, point to an item or area with the pointer, hold down the "Q" key, and click the left mouse button or hit **SPACE** or **INSERT**.

The **SHIFT** keys constrain road laying, rail laying, bulldozing and park building to a straight line.

KEYBOARD SHORTCUTS

ESCAPE will cancel open menus and close unwanted dialog boxes. When in doubt, hit **ESCAPE**. Eventually, if you keep hitting **Escape**, it will minimize the **SimCity** program to an icon.

OPENING MENUS

Alt-F	FILE MENU	Alt-W	WINDOWS MENU
Alt-O	OPTIONS MENU	Alt-H	HELP MENU
Alt-D	DISASTERS MENU		

OPENING WINDOWS AND ACTIVATING COMMANDS

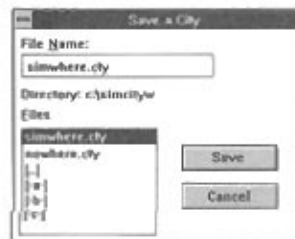
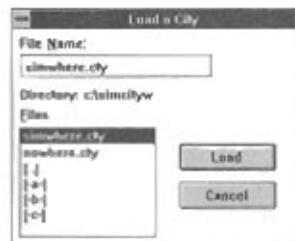
Ctrl-L	Activates Load City menu function
Ctrl-S	Activates Save City menu function
Ctrl-X	Exits SimCity
Ctrl-A	Toggles Auto-Bulldoze mode on and off
Ctrl-M	Opens the MAP WINDOW
Ctrl-G	Opens the GRAPHS WINDOW
Ctrl-B	Opens the BUDGET WINDOW
Ctrl-E	Opens the EDIT WINDOW
Ctrl-U	Opens the EVALUATION WINDOW
Ctrl-C	Closes the front window
Ctrl-H	Minimizes the front window
Ctrl-TAB	Cycles through the open "child" windows
Ctrl-1 to Ctrl-5	Retrieves BOOKMARKS 1-5, respectively (the same as clicking on the 1-5 buttons on the STATUS BAR)
Alt-U	Returns EDIT WINDOW to original location after Autogoto

OTHER SPECIAL KEYS

P	Temporarily activates the POWER LINE icon as long as it is held down
T	Temporarily activates the TRANSIT LINE
R	Temporarily activates the ROAD icon
B	Temporarily activates the BULLDOZER icon
0	Pauses the Simulator
1	Sets Simulator to Slow speed
2	Sets Simulator to Average speed
3	Sets Simulator to Fast speed
4	Sets Simulator to Fastest speed
Alt-S	Toggles on and off the STATUS BAR
Alt-C	Toggles on and off the CONTROL BAR
Alt-E	Activates the EDIT WINDOW TOOLBOX
Alt-M	Activates the MAP WINDOW TOOLBOX
Alt-G	Activates the GRAPH WINDOW TOOLBOX
Shift-1 to Shift-5	Saves the current active "child" window, including size and location to BOOKMARKS 1-5, respectively (the same as holding down the Shift key and clicking on the 1-5 buttons on the STATUS BAR)
Ctrl-Shift-T	Brings back Toolboxes if they slide up under Control Bar

MENUS

FILE MENU



LOAD GRAPHICS brings up a dialog box that lists available Graphics Sets, and allows you to change the architecture of your city. This is optional, and requires SimCity Graphics Sets 1 or 2, available at your local software store. For the Graphics Sets to work with SimCity for Windows, they must be installed first—using the install program that comes with SimCity for Windows, not the one that comes with the Graphics Sets.

LOAD SCENARIO brings up a menu of available SCENARIOS to load and run.

START NEW CITY generates a new, empty terrain. Clears existing city (if any) from memory. You will be given a chance to go back and save the old city first. Next, you will be given a chance to set the GAME PLAY LEVEL and name your city.

LOAD CITY brings up the File Loading Dialog Box allowing you to load a previously saved city. If you have an existing city in progress, SimCity will first ask if you want to save changes to your old city before loading another, and allow you to cancel the function if you wish.

SAVE CITY AS... brings up the File Saving Dialog Box allowing you to save the scenario or city in progress to disk for later use. Use this option to save a city for the first time, or if you want to save it under a different name, or to a different disk or subdirectory.

NOTE: Once you have loaded a scenario, it can be saved and reloaded, like any city, without the impending disaster.

SAVE CITY saves the scenario or city in progress to disk. Use this option to save a city under the same name and to the same place that it has already been saved. If you wish to change the name or location of a city, use the **SAVE CITY AS...** option. If you choose **SAVE CITY** and your city has not yet been saved, you will be asked to name the city and indicate where to save it.

PRINT brings up a dialog box allowing you to save your city as a paint file. The file format is .PCX, which will load into many paint programs, including Paintbrush (the one that comes with Windows). Once in the paint program, you can add street names, borders, etc. to your city and print it out.

EXIT ends SimCity session.

OPTIONS MENU

Most of the options set in this menu are saved with the city. When an option is active, there will be a checkmark to the left of the option. Some of these options can also be set by using the CONTROL BAR.

AUTO-BULLDOZE allows you to place zones, roadways, etc. directly on top of trees and shoreline without manually bulldozing first. You will be charged the same as for manual bulldozing.

AUTO-BUDGET keeps your budget at the same percentage settings without asking for approval every year. If there isn't enough money to meet the budget, then funds will be allocated first to the Transit system, then to the Fire Department, then to the Police.

AUTO-GOTO automatically transports you to disasters and major events.

MUSIC toggles the background music on and off. The simulation runs slightly faster with the music off.

SOUND EFFECTS toggles the sound effects on and off. The simulation runs slightly faster with the sound off.

SPEED brings up a sub-menu allowing you to set the simulation speed. **FASTEST** sets city time to the maximum speed possible on your machine. **PAUSE** stops time. Zoning and building are possible in paused time, but there will be no city growth or evolution.

ANIMATE ALL activates animation and updating in all windows. When it is not active, only the front window will be animated or updated. When this option is off, the simulation runs faster. This option is not saved with a city.

FREQUENT ANIMATION sets the frequency that the simulation stops crunching numbers and animates the screen. When this option is off, the simulation, and therefore time, will run faster.

STATUS BAR toggles the display of the STATUS BAR on and off.

CONTROL BAR toggles the display of the CONTROL BAR on and off.

MINIMIZE PAUSED automatically pauses the game when it is minimized.

SAVE OPTIONS saves your current options settings to disk as the new default. The next time you start SimCity for Windows these options will be in effect.

DISASTERS MENU

The DISASTERS MENU allows you to set natural disasters loose in your city. Use these disasters to test your ability to deal with emergencies in your city or just to release some aggression. More information on disasters, their causes, and dealing with them is presented later.

****WARNING**** *It is a good idea to save your city to disk before you set a disaster loose—just in case.*

FIRE starts a fire somewhere on the map.

FLOOD causes a flood to occur near the water.

AIR DISASTER causes a plane to crash. If there are no planes in the air, one will be generated.

TORNADO causes a tornado to appear somewhere on the map.

EARTHQUAKE causes a MAJOR earthquake.

MONSTER sets a monster loose in your city.

DISABLE eliminates the random disasters.

WINDOWS MENU

MAPS opens the MAP WINDOW.

GRAPHS opens the GRAPHS WINDOW.

BUDGET opens the BUDGET WINDOW.

EDIT opens the EDIT WINDOW.

EVAL opens the EVALUATION WINDOW.

HELP... opens the on-line Help for SimCity.

HELP MENU

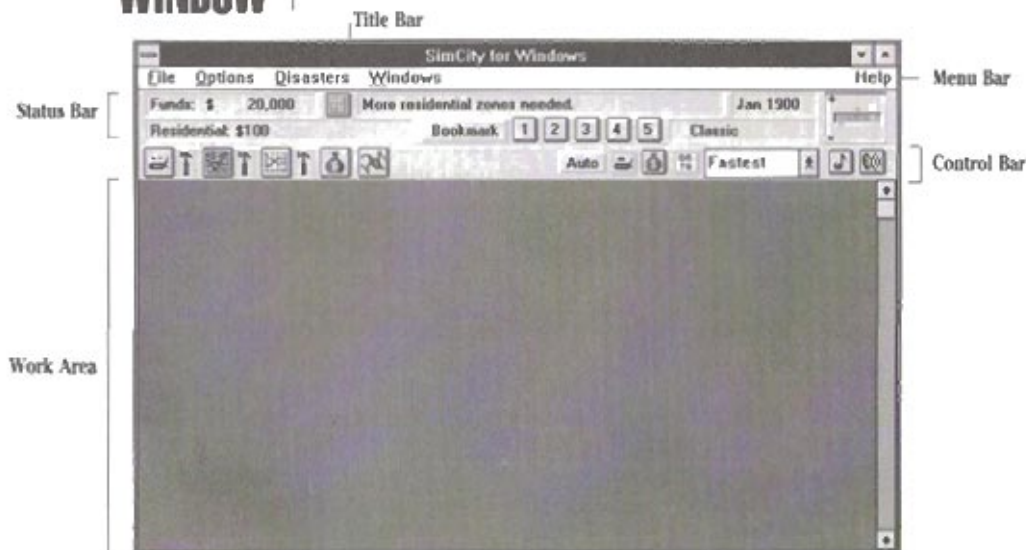
THE SIMCITY WINDOW

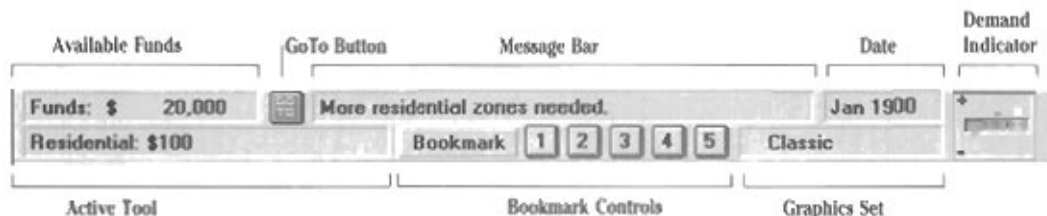
The SIMCITY WINDOW is the "parent" window where all the SimCity "child" windows appear. All windows in SimCity for Windows follow the standard Microsoft Windows interface rules for moving, sizing, minimizing, maximizing, and closing.

At the top of the SimCity Window is the **TITLE BAR**, which displays the program name. Below that is the **MENU BAR**.

Below the **MENU BAR** are the **STATUS BAR**, which displays important information about your city, and the **CONTROL BAR**, which provides helpful tools for controlling toolboxes and game options. They may look like one big bar, but they are really two bars. Honest. Both the **STATUS BAR** and the **CONTROL BAR** can be turned off if you want to enlarge the **WORK AREA**, which is the rest of the window, where all the "child" windows go.

SIMCITY WINDOW





The STATUS BAR displays the following information:

AVAILABLE FUNDS

This is how much money you have in your treasury for zoning, building and maintenance.

ACTIVE TOOL DISPLAY

This shows which tool is active for use in the EDIT WINDOW, and how much it costs to use.

MESSAGE BAR

This is where you see messages from the Sims who live in your city

GOTO BUTTON

If the MESSAGE BAR refers to a location, clicking this button will take you there.

DATE

This is a display of the current month and year in your city.

GRAPHICS SET

This is a display of the graphics set currently in use. It will be *Classic* (the graphics that come with SimCity), unless you get the optional SimCity Graphics Sets to display your cities in alternate architectures from the past or future.

DEMAND INDICATOR

This shows your city's demand for commercial, residential and industrial zones. If the bar extends up, the demand is positive—the Sims want more of these zones. If the bar extends down, the demand is negative—there are more than enough of these zones. If there is no bar at all, then there are the right amount of zones. This indicator reacts slowly, so give it a few minutes to catch up with you after you put down some zones.

THE STATUS BAR

BOOKMARKS

These controls let you mark locations in your city and quickly return to them. Bookmarks can save your place in either the EDIT WINDOW or the MAPS WINDOW. It saves the current view of the active window, including the size and location in the WORK AREA. Bookmarks are not saved, and they clear every time you start SimCity, open a city or Scenario, or start a new city.

To set a Bookmark, have your MAP or EDIT WINDOW active in the WORK AREA. Hold down the **SHIFT** key and click on one of the Bookmark buttons, or just hit Shift along with a number, 1-5.

To return to a Bookmark, click on the Bookmark button, or hit **Ctrl** along with the number.



THE CONTROL BAR

The CONTROL BAR has the following buttons and controls:

WINDOW AND TOOLBOX CONTROLS

The first eight buttons are for opening and activating windows and toolboxes.

The first button opens the EDIT WINDOW. When you open the EDIT WINDOW, the EDIT WINDOW TOOLBOX will be opened with it.

The third button opens the MAP WINDOW. When you open the MAP WINDOW, the MAP WINDOW TOOLBOX will be opened with it.

The fifth button opens the GRAPH WINDOW. When you open the GRAPH WINDOW, the GRAPH WINDOW TOOLBOX will be opened with it.

To the right of each of the above three window icons is a toolbox icon that closes and re-opens the toolbox for that window. Toolboxes automatically open and close with their windows, and you will usually want to keep them open, but if you want to dump toolboxes to get a good screen shot, use these buttons.



The seventh button opens the BUDGET WINDOW.

The eighth button opens the EVALUATION WINDOW.

OPTIONS CONTROLS

The next four controls toggle auto-options on and off, and set the speed.

The first Option Control toggles Auto-Bulldoze on and off. When Auto-Bulldoze is on, you can place roads, rails, power lines or zones over trees and shoreline without manually bulldozing first. You will be charged the same as for manual bulldozing.

The second Option Control toggles Auto-Budget on and off. When Auto-Budget is on, the BUDGET WINDOW won't appear every year for your approval. The tax rate and payment will remain the same until you decide to change them or you run out of money.

The third Option Control toggles Auto-Goto on and off. When Auto-Goto is on, if a message in the MESSAGE BAR refers to a location, the EDIT WINDOW will automatically scroll to that location.

Next is the current speed display. To change the speed, click on the arrow to see a list of possible speeds to run SimCity, then click on the one you want.

SOUND CONTROLS

The first Sound Control toggles background music on and off.

The second Sound Control toggles sound effects on and off.



THE EDIT WINDOW AND TOOLBOX



EDIT WINDOW

You build and zone your city in the **EDIT WINDOW** using the tools in the **EDIT WINDOW TOOLBOX**.

The **EDIT WINDOW**, like all windows in SimCity for Windows, follows the standard Microsoft Windows interface rules for opening, closing, sizing, maximizing, minimizing, restoring and moving. If you have any questions about window manipulation, check your Microsoft Windows manual.

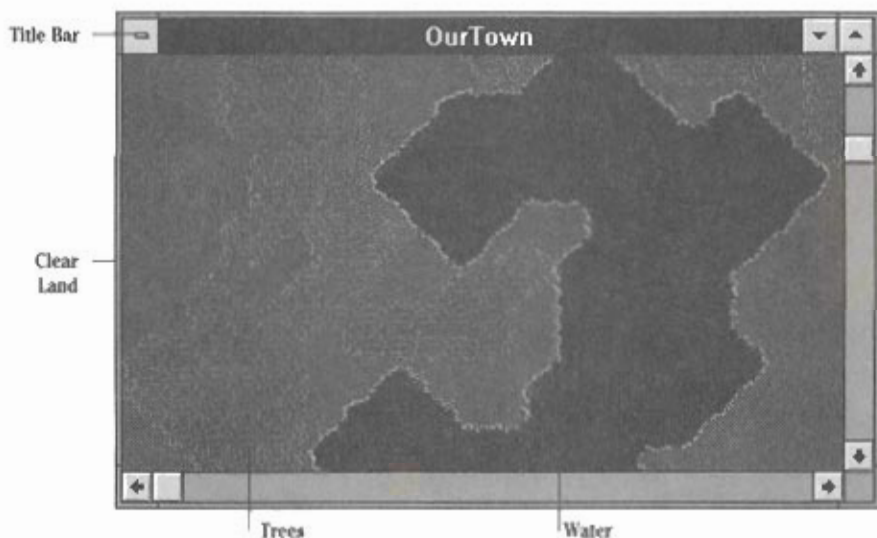
The **EDIT WINDOW** automatically opens when you start SimCity. It can be closed at any time, and re-opened by choosing **EDIT** from the **WINDOWS MENU**, clicking on the **EDIT WINDOW ICON** in the **CONTROL BAR**, or hitting **Ctrl-E**.

SCROLLING

Only part of your city will show at any one time in the **EDIT WINDOW**. You can scroll the city around in the window by using the **SCROLL BARS**, or by using the **CURSOR** and **NUMERIC KEYPAD** keys. See the **KEYBOARD REFERENCE CHART** for all the keyboard-based options for scrolling.

PUSHING BUTTONS AND PLACING ZONES

To push buttons or place zones, move the cursor or pointer over the button or area you want with the mouse or the keyboard, and click the left mouse button. If you don't have a mouse, use either the **INSERT** or **SPACE** keys to emulate the left mouse button.



TERRAIN

There are three types of terrain in the EDIT WINDOW: Open Land, Trees, and Water.

OPEN LAND is where you can zone and build. Depending on the type of monitor and graphics card you have, it will be shown as brown, or as a very light shade with speckles.

TREES and **FORESTS** are shown as green, or as a medium shade. You cannot zone or build on trees. You may **BULLDOZE** trees and forests to turn them into clear land. While some bulldozing is necessary, clearing away too much green area will result in lower property values.

WATER is shown as blue, or as a dark shade. You cannot zone or build on water. You must bulldoze coastlines to create landfills before you can build or zone there. Roads, rails and power lines can be laid across water, with no turns or intersections.

EDIT WINDOW TOOLBOX

The EDIT WINDOW TOOLBOX has 14 different tools that you can use for building and editing your city. The tools are selected by clicking on them with a mouse, or by using the TAB and SHIFT-TAB keys to cycle through the icons and pressing the SPACE BAR to activate them. The active tool and the cost to use it is displayed in the STATUS BAR.

There are also shortcut keys for the most-used tools. See the KEYBOARD REFERENCE CHART or the Keyboard section of CONTROLLING SIMCITY above.

EDITING TOOLS

The tools are activated by clicking on them. The active one appears depressed. If you don't have enough funds to use an tool, its icon will be ghosted. When a tool is selected, a rectangle will accompany the pointer in the EDIT WINDOW to indicate the size and area of land that will be affected.

BULLDOZER clears trees and forests, creates landfill along the water, levels developed, existing zones and clears rubble caused by disasters. The Auto-Bulldoze option works on natural terrain, power lines, roads and rails, but not on zones. Bulldozing the center of a zone will destroy the whole zone. Bulldozing one section of land costs \$1.



EDIT WINDOW TOOLBOX





ROADS connect developed areas. Intersections and turns are automatically created. Lay continuous roads by clicking and dragging your pointer. Be careful—if you accidentally lay a road in the wrong place you will have to pay for bulldozing and rebuilding. Holding down the **SHIFT** key while laying roads will constrain them to a straight line.

Roads may not be placed over zoned areas. They may be placed over trees, shrubbery, and shoreline only after bulldozing or activating the Auto-Bulldoze function from the **OPTIONS MENU**. Roads can cross over power lines and rails only at right angles. Laying roads across water creates a bridge. Bridges can only be built in a straight line—no curves, turns or intersections. Shorelines must be bulldozed prior to building a bridge, unless the Auto-Bulldoze function from the **OPTIONS MENU** is active.

Roadways are maintained by the transit budget, and wear out if there is a lack of funding. The amount of yearly funding requested by the transportation department is \$1 for each section of road, \$4 for each section of bridge. It costs \$10 to lay one section of road and \$50 to lay one section of bridge.



POWER LINES carry power from power plants to zoned land and between zones. All developed land needs power to function. Power is conducted through adjacent zones. Unpowered zones display the flashing power symbol. There is a delay between the time you connect power to a zone and when the flashing symbol disappears that grows longer as the city grows larger.

Power lines cannot cross zoned land, and can be built over trees, shrubbery, and shoreline only after bulldozing, or after activating the Auto-Bulldoze function from the **OPTIONS MENU**. Holding down the **SHIFT** key while laying power lines will constrain them to a straight line.

Junctions and corners are automatically created. Lay continuous power lines by clicking and dragging your pointer. Power lines across water must be horizontal or vertical—no turns, curves or intersections. Power lines consume some power due to transmission inefficiencies. It costs \$5 to lay one section of power line on land, \$25 on water.



TRANSIT LINES create a railway system for intra-city mass transit. Lay continuous transit lines by clicking and dragging your pointer. Intersections and turns are created automatically. Holding down the **SHIFT** key while laying tracks will constrain them to a straight line. Tracks laid under rivers will appear as dashed lines. These are underwater tunnels, and must be vertical or horizontal—no turns, curves or intersections.

Transit lines are maintained by the transit budget. The level of funding affects the efficiency of the system. The amount of yearly funding requested by the transportation department is \$4 for each section of rail, and \$10 for each section of tunnel. It costs \$20 per section of track laid on land, \$100 per section under water.

PARKS can be placed on clear land. Parks, like forests and water, raise the land value of surrounding zones. Parks can be bulldozed as fire breaks or to reserve space for later mass transit expansion. Holding down the SHIFT key while building parks will constrain them to a straight line. It costs \$10 to zone one park.

RESIDENTIAL ZONES are where the Sims live and build houses, apartments and community facilities such as schools, hospitals and churches.

Most Residential zones develop into one of four values: slums, lower middle class, upper middle class, and upper class. They can range in population density from single-family homes to high-rise apartments and condominiums. Some Residential zones will automatically develop into Churches and Hospitals. Factors influencing residential value and growth are pollution, traffic density, population density, surrounding terrain, roadway access, parks and utilities. It costs \$100 to zone one plot of land as Residential.

COMMERCIAL ZONES are used for many things, including retail stores, office buildings, parking garages and gas stations. There are four values for commercial property, and five levels of growth, from the small general store to tall skyscrapers. Factors influencing the value and growth of commercial areas include internal markets, pollution, traffic density, residential access, labor supply, airports, crime rates, transit access and utilities. It costs \$100 to zone one plot of land as Commercial.

INDUSTRIAL ZONES are for heavy manufacturing and industrial services. There are four levels of industrial growth, from small pumping stations and warehouses to large factories. Factors influencing industrial growth are external markets, seaports, transit access, residential access, labor supply and utilities. It costs \$100 to zone one plot of land as Industrial.

POLICE DEPARTMENTS lower the crime rate in the surrounding area. This in turn raises property values. Place these in high-density crime areas as defined by your Crime Rate map. The efficiency of a station depends on the level of police department funding. It costs \$500 to build a Police Station. Full yearly maintenance of each Police Station is \$100.





FIRE DEPARTMENTS make surrounding areas less susceptible to fires. When fires do occur, they are put out sooner and do less damage if a station is near. The effectiveness of fire containment depends on the level of fire department funding. It costs \$500 to build a Fire Station. Full yearly maintenance of each Fire Station is \$100.



STADIUMS encourage residential growth, once a city has become fairly large. You may build a stadium in a smaller city without negative (or positive) effect. Stadiums indirectly generate a lot of revenue, but create a lot of traffic. Properly maintaining a stadium requires a good road and transit network. It costs \$3000 to build a Stadium.



Coal
Nuclear

POWER PLANTS can be coal or nuclear, chosen from a sub-menu provided when you activate the Power Plant icon. The nuclear plant is more powerful but carries a slight risk of meltdown. The coal plant is less expensive, but less powerful, and it pollutes. All zoned land needs power to develop and grow. When developed land loses power, it will degenerate to barren ground unless power is restored. Connecting too many zones to a Power Plant causes brownouts.

Coal power plants cost \$3000 to build, and supply enough energy for about 50 zones. Nuclear plants cost \$5000 and supply electricity for about 150 zones.



SEAPORTS increase the potential for industrial growth. They have little effect in a small city, but contribute a lot to industrialization in a large city. Seaports should be placed on a shoreline. The shoreline must be bulldozed prior to zoning a Seaport, unless Auto-Bulldoze is active. Once the port is operational, you may see ships in the water. It costs \$5000 to zone land for use as a Seaport.



AIRPORTS increase the growth potential of your commercial markets. Once a city starts getting large, commercial growth will level off without an Airport. Airports are large and expensive and should not be built unless your city can afford one. Position Airports to keep flight paths over water whenever possible, lessening the impact of air disasters. Once you build an Airport you will see planes flying above your city to and from the Airport. There is also a traffic helicopter that alerts you to heavy traffic areas. It costs \$10,000 to zone land for use as an Airport.

THE BUDGET WINDOW



At the end of each year taxes are collected, and the BUDGET WINDOW will appear (unless you select the Auto-Budget function). You will be asked to set the funding levels for the fire, police and transportation departments, and to set the property tax rate.

The BUDGET WINDOW can be opened from the WINDOWS MENU by hitting Ctrl-B, or by clicking on the BUDGET WINDOW ICON in the CONTROL BAR.

When Auto-Budget is active, all the funding levels will remain at full funding, or at your last setting. If there is not enough money to completely fund the budget, money will go to the Transit Department first, then to the Fire Department, then to the Police Department.

You can raise and lower budget levels by clicking on the little arrows that correspond to each category. A percentage indicator will display the level of funding that will be maintained if you turn on the Auto-Budget function. You may adjust your tax rate by clicking on the arrows next to the tax rate indicator. Click on "GO WITH THESE FIGURES," or hit RETURN to exit the BUDGET WINDOW.

Use the TAB and SHIFT-TAB keys to cycle the pointer around to all the HOT SPOTS. When adjusting funding or tax levels, clicking on an arrow with the left mouse button (or SPACE or INSERT) will move the amount up or down by 1%. Clicking on an arrow with the right mouse button or the DELETE key will move the amount up or down by 10%.

NOTE: When you first load in a city, all the Budget amounts will be zeroed out until the next January. This first year is a "grace period," and all City Services will be considered completely funded.

2011 Fiscal Budget			
TAX RATE		▲ %07 ▼	
TAXES COLLECTED		\$1793	
	Amount Requested	Amount Allocated	Funding Level
Trans	1901	1901	▲ %100 ▼
Police	400	400	▲ %100 ▼
Fire	300	300	▲ %100 ▼
CASH FLOW \$808			
PREVIOUS FUNDS \$20,000			
CURRENT FUNDS \$19,192			
<input type="button" value="GO WITH THESE FIGURES"/>			

TAX RATE

The maximum tax rate you can set is 20%.

The minimum tax rate you can set is 0%.

The optimum tax rate for fast growth is between 5% and 7%.

To slow city growth without actually shrinking, set the tax rate to 8% or 9%.

The tax collection from each zone is based on the following formula:

$$\text{Tax} = \text{Population} \times \text{Land Value} \times \text{Tax Rate} \times \text{a Scaling Constant.}$$

The scaling constant changes with the difficulty level of the game.

FUNDING LEVELS

The amount of yearly funding requested for the fire and police departments is \$100 per station. Until you actually build fire or police stations, you cannot fund them. You cannot allocate more than 100% of the requested funding for fire and police departments—SimCity police officers and fire inspectors are honest and will not accept your bribes. Allocating less than the requested amount will decrease the effective coverage of the police or fire station.

The amount of yearly funding requested for the transportation department is \$1 for each section of road, \$4 for each section of bridge (roads over water), \$4 for each section of rail, and \$10 for each section of tunnel (underwater rails). You cannot allocate more than 100% of the requested funds.

Funding transportation maintenance slightly below 100% will cause slow, minor deterioration of the transit system—an occasional pothole or bad track section. Funding between 90% and 75% will cause noticeable damage—many sections of road and rail will be unusable. Funding below 75% will cause rapid deterioration of your transit system.

CASH FLOW

$\text{Cash Flow} = \text{Taxes Collected} - \text{Total Allocated Funds}$. It will be a negative number if your yearly maintenance costs are greater than your yearly tax intake.

A major difference between SimCity and a real city is that SimCity does not allow budget deficits. If you don't have the money, you can't spend it. Try not to let your city run with a negative cash flow.

The MAPS WINDOW, which can be opened from the WINDOWS MENU by hitting Ctrl-M, by clicking on the MAPS WINDOW ICON in the CONTROL BAR, or by hitting RETURN, gives you various overviews of your city.

The MAPS WINDOW can be resized. If it is too small to display the whole map, scroll bars will appear. Somewhere in the map is the EDIT RECTANGLE. This rectangle shows the area of the map that is visible in the EDIT WINDOW. You can move the rectangle around the map with the mouse or cursor keys to change the area that the EDIT WINDOW displays. The rectangle will stop at the borders of your city. If the entire map isn't displayed, moving the rectangle to the edge of the window will cause the map to scroll.

You may also notice letters on the map. These are markers to let you know where moveable objects are. An "S" marks the location of a ship. An "R" marks the location of a railroad train. An "H" marks the location of a helicopter. An "A" marks the location of an airplane. An "M" marks the location of a Monster, and a "T" marks the location of a Tornado.



THE MAPS WINDOW TOOLBOX

The MAPS WINDOW TOOLBOX has nine icons, each of which shows a different view of your city. When the views use colors or grey scales to show density, rate, or comparative levels, a Density Key will be shown in the lower-right corner of the toolbox.

THE MAPS WINDOW AND TOOLBOX



MAPS WINDOW

MAPS WINDOW TOOLBOX





✓ Population Density
Population Growth



✓ Police
Fire

THE MAPS

The **CITY FORM MAP** shows the physical shape of your city, showing developed and non-developed areas. Use this map to plan city expansion.

The **POWER GRID MAP** shows the power network of your city. Use this map to locate unpowered zones and breaks in the power lines.

The **TRANSPORTATION MAP** is a road and rail map of the city. Use this map to examine traffic access to all parts of the city and plan further expansion of the network.

The **POPULATION MAPS** icon brings up a sub-menu offering two map views. The **POPULATION DENSITY** view displays the average number of people occupying an area each day. Use this map to locate under-utilized areas and overpopulated areas.

The **POPULATION GROWTH** view shows the most recent growth (positive or negative) of your city, and where it is occurring.

The **TRAFFIC DENSITY MAP** shows the amount of traffic on the roads. Spot traffic problems and determine where new roadways are needed.

The **POLLUTION INDEX MAP** shows levels of pollution throughout the city. Pollution is generated primarily by industry, traffic, and coal power plants.

The **CRIME RATE MAP** shows the level and location of crime in your city. Crime is calculated from population density, land value, and proximity of police stations.

The **LAND VALUE MAP** shows the relative value of land within the city limits. Land values are used to establish the amount of revenue generated by taxes.

The **CITY SERVICES** icon brings up a sub-menu offering views of police or fire services.

The **POLICE INFLUENCE MAP** displays the effective radius of Police Stations based on their location, power, funding levels, and access.

The **FIRE PROTECTION MAP** displays the effective radius of Fire Stations based on their location, power, funding levels, and access.

USING THE MAPS

The MAP WINDOW should be constantly referred to in all stages of city planning, building and managing. Printing the map and sketching in your plan with pencil or pen can save a lot of bulldozing and re-zoning and rebuilding.

BEFORE YOU BUILD

Use the map before beginning a new city to plan:

- where you want your city center,
- where you want the high-value waterfront residential areas,
- where you will cross water with bridges, power lines and tunnels,
- where to place power plants,
- where to place large industrial sections away from the residential sections,
- and the general layout of the city.

DURING CITY GROWTH

- Use the map to guide your city's growth around forest areas, to preserve the trees and improve property values.
- Use the transportation map along with the traffic density map to plan traffic control and expansion.
- Use the city maps to make sure you have the proper ratio of residential to commercial to industrial zones.
- Use the pollution map to detect problem areas, and disperse the industrial zones and/or replace roads with rails.
- Printing out the map in various stages of development and doing some preliminary expansion planning with a pencil can be useful. Printouts can also be used for city historical records.

DURING CITY MAINTENANCE

- Use the power grid map to locate zones that have lost power.
- Use the city services maps to evaluate the effective coverage of your police and fire departments.
- Use the crime rate map to locate problem areas that need more police protection.
- Use the pollution map to locate problem areas.
- Use the transportation and traffic density map to determine where to replace roads with rails.
- Use the land value map to locate depressed areas for improvement or replacement.
- Use the city maps to maintain the proper ratio of residential to commercial to industrial zones.

GRAPHS WINDOW AND TOOLBOX

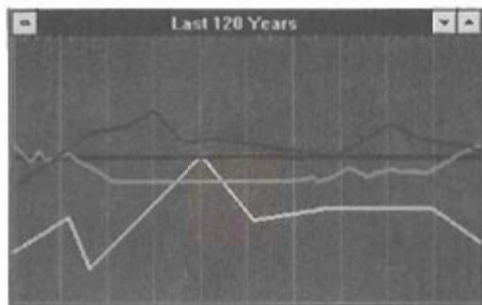


The **GRAPHS WINDOW** gives you time-based graphs of various city data. It can be opened through the **WINDOWS MENU**, by hitting **Ctrl-G**, or by clicking on the **GRAPHS WINDOW ICON** in the **CONTROL BAR**.

The **GRAPHS WINDOW TOOLBOX** has eight icons, six of which select different graphs of city data. The other two select the time range the data covers.

Multiple graphs can be viewed at once. Each graph is a different color. Active icons are outlined in the same color as their corresponding data line.

GRAPHS WINDOW



GRAPHS WINDOW TOOLBOX



THE GRAPHS

The **RESIDENTIAL POPULATION GRAPH** shows the total population in residential zones.

The **COMMERCIAL POPULATION GRAPH** shows the total population in commercial zones.

The **INDUSTRIAL POPULATION GRAPH** shows the total population in industrial zones.

The **CRIME RATE GRAPH** shows the overall crime rate of the entire city.

The **CASH FLOW GRAPH** shows your city's cash flow: money collected in taxes minus money it took to maintain your city. The line in the center of the **CASH FLOW GRAPH** represents a cash flow of zero. Do not build more infrastructure (roads, rails, police departments, fire stations) than you can support with tax revenues.

The **POLLUTION GRAPH** shows the overall average pollution reading of the entire city.

You may view graphs for time periods of either the last 10 years or the last 120 years by clicking on the **10 YEAR** or **120 YEAR** buttons.



USING THE GRAPHS

The Graphs give information on many of the same factors as the Maps, but show the information over time. Graphs are for locating trends in city life that won't be noticeable in a Map. If you look at a Map, for example the crime rate map, once every year, a very slight rise in the crime rate will not be noticeable. But on a Graph, you could easily locate the upward trend in crime because you will be viewing the levels for a number of years at the same time.

Residential, commercial and industrial population growth and/or decline can be tracked and displayed. If you notice a downward trend in any of these, refer to the User Reference Card to locate potential problems and solutions.

Crime rate can be displayed, revealing slight but consistent upward or downward trends.

Use the **CASH FLOW GRAPH** to track your city's efficiency as it grows. If your maintenance costs are higher than your tax revenues, you will have a negative cash flow.

Use the **POLLUTION GRAPH** to catch rising levels of pollution before they reach a problem level.

THE EVALUATION WINDOW



The **EVALUATION WINDOW** gives you a performance rating. You can access it through the **WINDOWS MENU**, by clicking on the **EVALUATION WINDOW ICON** in the **CONTROL BAR**, or by hitting **Ctrl-U**.

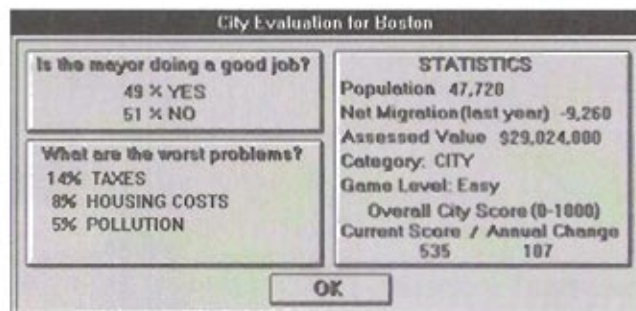
PUBLIC OPINION is presented in poll form, rating your overall job as mayor and listing what the public regards as the city's most pressing problems. You are advised to keep your residents happy or they might migrate away, and you will be left with a "ghost town."

In general, if more than 55% of the populace thinks you are doing a good job, then you can feel secure about keeping your job.

If 10% or less of the people think something is a problem, then it's not too bad.

These are most of the problems that citizens complain about, and how to correct them:

- | | |
|------------------------|--|
| Traffic - | Replace dense sections of roads with rails. |
| Crime - | Add police stations and/or raise property values. |
| Pollution - | Replace roads with rails, disperse industrial zones. |
| Housing - | Zone more residences. |
| Housing costs - | Zone more residences in low property value areas. |
| Fires - | Build more fire departments. |
| Taxes - | Lower taxes (if you can). |
| Unemployment - | Zone more commercial and industrial areas. |



STATISTICS on **POPULATION**, **NET MIGRATION**, and **ASSESSED VALUE** are displayed, along with the city's **GAME LEVEL** and the **OVERALL CITY SCORE**. This data is calculated once a year at budget time.

POPULATION is the number of residents in your city.

The **NET MIGRATION** statistic provides a rating of the desirability of your city. If people are leaving in droves, then you know something is rotten in SimCity.

The **ASSESSED VALUE** is the combined value of all city-owned property: roads, rails, power plants, police and fire stations, airports, seaports, parks, etc. It does not include residential, commercial and industrial zones.

The **CATEGORIES** are defined by population as follows:

Village	0 to 1,999
Town	2,000 to 9,999
City	10,000 to 49,999
Capital	50,000 to 99,999
Metropolis	100,000 to 499,999
Megalopolis	500,000 and above.

OVERALL CITY SCORE is a composite score based on the following factors (some positive, some negative):

MAJOR FACTORS - Crime, pollution, housing costs, taxes, traffic, unemployment, fire protection, unpowered zones, city growth rate.

MINOR FACTORS - Stadium needed (but not built), seaport needed (but not built), airport needed (but not built), road funding, police funding, fire department funding, and fires.

A large population is not necessarily a sign of a successful city. Population size does not affect the overall city score, since low population could indicate a new or growing city.

Since city growth rate does affect the overall city score, a city in which growth has been intentionally stopped for environmental or aesthetic reasons will have a slightly lower score.

DISASTERS

Disasters will randomly occur as you play SimCity. At higher game levels the disasters will happen more often. Most disasters can be activated from the DISASTERS MENU. Random disasters can be eliminated by the DISABLE option on the DISASTERS MENU.

FIRES can start anywhere in the city. Fires spread fairly rapidly through forests and buildings, and more slowly over roadways. Fire will not cross water or clear land.

The effectiveness of the fire department (which can be viewed in the MAPS WINDOW) is based on how close it is to the fire, and its funding levels. Fires inside this effective radius will be extinguished automatically. If you have no operational fire departments in the area, you can try to control the fire yourself. Since fire will not spread across clear terrain, you can build fire breaks with the bulldozer. Just surround the fire with clear areas and it will stop spreading and eventually burn itself out.

Note: You cannot directly bulldoze a fire.

FLOODING occurs near the water. Floods gradually spread and destroy buildings and utilities. After a while the flood waters recede, leaving behind cleared terrain.

AIR CRASHES can happen anywhere in the city if an airport is operational. This happens whenever aircraft collide with things, such as tornados or another aircraft. When a crash occurs, a fire will start, unless the crash is on water. A good strategy is to locate the airport away from the central city to minimize the fire damage.

TORNADOS can occur anywhere on the map at any time. Very fast and unpredictable, they can appear and disappear at a moment's notice. Tornados destroy everything in their path, and can cause planes, helicopters, trains, and ships to crash.

EARTHQUAKES are the most devastating disaster. This is a MAJOR Earthquake—between 8.0 and 9.0 on the Richter Scale. It will destroy buildings and start fires. The initial damage will vary with the severity of the earthquake, and the eventual fire damage depends on your fire-control efforts.

When an Earthquake occurs, you will see the EDIT WINDOW shake for a while. When it stops, you will have to take charge and control the scattered fires. Use the bulldozer to contain the largest fires first and work your way down to the smaller ones.

MONSTER ATTACKS are provoked by high levels of pollution. A monster destroys everything in its path, starts fires, and causes planes, helicopters, trains and ships to crash.

MELTDOWNS are only possible if you are using a nuclear power plant. If a meltdown occurs, your nuclear plant will explode into flames. The surrounding area will be unusable for the remainder of the simulation due to radioactive contamination. Meltdowns are not available on the DISASTERS MENU.

SHIPWRECKS can occur once you have an operating seaport. They can cause fires where the ship crashes into a shore or bridge. Shipwrecks are not available on the DISASTERS MENU.

SCENARIOS

The Scenarios provide both real and hypothetical problems for you to deal with in seven famous (and one not-so-famous) cities. They present various levels of difficulty. Some problems are in the form of disasters that will occur some time after you start. Other problems are more long-term, such as crime.

Your task is to deal with the problem at hand as well as possible under the circumstances. After a certain amount of time the city residents will rate your performance in a special election. If you do very well, you may be given the key to the city. However, if you do poorly, they just might run you out of town.

NOTE: To avoid the disaster that is tied to a scenario, save it to disk and reload the city from the saved file.

DULLSVILLE, USA 1900 – BOREDOM

Things haven't changed much around here in the last hundred years or so and the residents are beginning to get bored. They think Dullsville could be the next great city with the right leader. It is your job to attract new growth and development, turning Dullsville into a Metropolis by the 21st century.

Difficulty	Time Limit	Win Condition
Easy	30 years	Metropolis

SAN FRANCISCO, CA 1906 – EARTHQUAKE

Damage from the earthquake was minor compared to that of the ensuing fires, which took days to control. 1500 people died. Controlling the fires should be your initial concern here. Afterwards, clearing the remaining rubble will allow the city to start rebuilding.

Difficulty	Time Limit	Win Condition
Very Difficult	5 years	Metropolis

HAMBURG, GERMANY 1944 – FIRE

Allied fire bombing of German cities in WWII caused tremendous devastation and loss of life. People living in the inner cities were at greatest risk. You must control the firestorms during the bombing and then rebuild the city after the war.

Difficulty	Time Limit	Win Condition
Very Difficult	5 years	Metropolis

BERN, SWITZERLAND 1965 – TRAFFIC

The roads here are becoming more congested with automobile traffic every day, and the residents are upset. They demand that you do something about it. Some have suggested a mass transit system as the answer, but this may require major rezoning in the downtown area.

Difficulty	Time Limit	Win Condition
Easy	10 years	Low Average Traffic Density

TOKYO, JAPAN 1957 – MONSTER ATTACK

A large reptilian creature rose from Tokyo Bay and rampaged through the city, destroying much of the industry along the bay.

Difficulty	Time Limit	Win Condition
Moderately Difficult	5 years	City Score above 500

DETROIT, MI 1972 – CRIME

By 1970, competition from overseas and other economic factors pushed the once "automobile capital of the world" into recession. Plummeting land values and unemployment increased crime in the inner-city to chronic levels. You have just been elected after promising to reduce the crime and rebuild the industrial base of the city.

Difficulty	Time Limit	Win Condition
Moderately Difficult	10 years	Low Average Crime Density

BOSTON, MA 2010 – NUCLEAR MELTDOWN

A major meltdown is about to occur at one of the new downtown nuclear reactors. The area in the vicinity of the reactor will be severely contaminated by radiation, forcing you to restructure the city around it.

Difficulty	Time Limit	Win Condition
Very Difficult	5 years	City Score above 500

RIO DE JANEIRO, BRAZIL 2047 – FLOOD

In the mid-21st century, the greenhouse effect raised global temperatures 6 degrees F. Polar icecaps melted and raised sea levels worldwide. Coastal areas were devastated by flood and erosion. Unfortunately, some of the largest cities in the world are located on the coasts.

Difficulty	Time Limit	Win Condition
Moderately Difficult	10 years	City Score above 500

GAME PLAY LEVEL

GROWING A CITY

When you first start a new city you must pick a difficulty level. Once a city is started you cannot change the game play level; it remains at your initial setting for the life of the city. The game level setting is displayed in the evaluation window.

This level—Easy, Medium, or Hard—adjusts the simulation to your current abilities by altering several factors. A harder setting will increase the chance of disasters, make residents more intolerant of taxation, cause maintenance costs to grow, etc.

While growing a city, refer often to the **USER REFERENCE CARD**. It provides a chart of **CITY DYNAMICS**: how all factors of city life and growth are related.

The main points to keep in mind while growing a city are:

- Grow slow. Watch your money.

- All zones must be powered to develop.

- Zones must be developed to generate tax money.

- Roads or rails must provide access to and from each zone for it to fully develop.

- There is a yearly maintenance cost for each section of road, rail, bridge and tunnel. This can add up. Don't build too many roads and rails and generate high maintenance costs before your city can generate enough tax revenues to support them.

- Extra power plants and redundant power lines are expensive, but can keep zones from losing power and deteriorating during a disaster or emergency.

- Rails can carry much more traffic than roads. While building and zoning an area that you predict will generate heavy traffic, install rails instead of roads in the early stages of development.

- If you get a lot of heavy traffic warnings, replace roads with rails. You can even build an entirely roadless city.

- Grouping zones together, four or five in a row touching each other, can eliminate a lot of power line segments.

- Airports, seaports and stadiums won't help a small city grow—so save your money until the city gets larger. The Sims will tell you when they need these things.

- Place zones, roads, etc. carefully—they cannot be moved, and you will have to pay to bulldoze them and rebuild.

As a rule of thumb, the number of residential zones should be approximately equal to the sum of commercial and industrial zones. When your city is small, you will need more industrial zones than commercial, and when your city gets larger, you will need more commercial zones than industrial.

Separate the residential areas from the industrial areas.

Proximity to forest, parks, and water increases land value, which increases the taxes collected. Don't bulldoze any more forest than you must.

Natural shoreline increases property values more than landfill shoreline.

Keep in mind that proximity to downtown raises property values. The simulator defines the downtown area as "the center of mass of the population density." It calculates the average geographical center of the population.

A bigger, more populous city is not necessarily better. Having a self-supporting, profitable city with pleasant surroundings is better than a huge city that is always broke and has no forest or shoreline.

Use the various maps and graphs to plan city growth, locate problems, and track your progress. Look for areas that need police and fire coverage as you go, so you don't have to go back and bulldoze developed zones to make room for police and fire stations.

Save your city to disk before trying any major new policy so you can go back if your plan doesn't work.

Print out your city in different stages of evolution to track and plan growth.

Check the EVALUATION WINDOW often. The Sims will let you know how you are doing. Also, the statistics can be useful; if your population is shrinking, don't go zoning new areas that may never develop—look for problems in the existing zoned areas, and spend your time and money solving them.

SAVE YOUR CITY TO DISK OFTEN!!!

NOTE: *There is only one animated train car at a time in SimCity. It will not necessarily cover every section of track. This does not mean that the tracks are not working. Don't worry, everything is OK.*

THE SYSTEM/ USER REFERENCE CARD

Included in the SimCity box is the SYSTEM/USER REFERENCE CARD, which includes the system information, plus the ZONE EVOLUTION CHART, the CITY DYNAMICS CHART, and the KEYBOARD/CONTROL BAR REFERENCE CHART.

ZONE EVOLUTION CHART

The Zone Evolution Chart shows the various levels of development and decline of residential, commercial and industrial zones. The level of development depends on the land value and population density. The graphic set shown on the Zone Evolution Chart is from the Hercules graphics set. Other graphics modes will differ, but they are very similar.

Use this chart along with the Query function to identify and investigate individual zones.

CITY DYNAMICS CHART

The City Dynamics Chart lists the factors of city life and growth and shows how they interrelate. Use this chart to guide you in designing your city. It will help you find solutions to the Sims' complaints, and to problems you discover from the maps and graphs.

KEYBOARD/CONTROL BAR REFERENCE CHART

The Keyboard Reference Chart gives a summary of all the keyboard-controlled functions and shortcuts, and an explanation of the functions on the CONTROL BAR.

INSIDE SimCity

HOW THE SIMULATOR WORKS AND STRATEGIES FOR USING IT

Many factors influence the chance of your city's prospering or floundering: both internal factors (the structure and efficiency of your city) and external factors (the regional economy, disasters, etc.).

Your city is divided into three primary zones: Residential, Industrial, and Commercial. These zones symbolize the three basic pillars upon which a city is based: population, industry, and commerce. All three are necessary for your city to grow and thrive.

RESIDENTIAL ZONES are where the Sims live. Here they build houses, apartments and community facilities such as churches and schools. Sims are the work force for your city's commercial and industrial zones.

INDUSTRIAL ZONES are used to site warehouses, factories, and other unsightly and polluting structures which have a negative impact on surrounding zones. One of the major goals of planning is to separate these "nuisances" from the areas where people live. In this simulation, industrial zones represent the "basic" production of your city. Things produced here are sold outside the city to an "external market," bringing money into the city for future growth.

COMMERCIAL ZONES represent the retail stores and services in your city, including gas stations, grocery stores, banks, and offices. Commercial areas are mainly dedicated to producing goods and services needed within your city. This is called "non-basic" production or production for the "internal market."

The major factors controlling residential population are birthrate, availability of jobs and housing, unemployment, and quality of life within the city.

Birthrate as used here is actually a combination of the birthrate (+) and the deathrate (-). Within SimCity there is always a positive birthrate.

ZONES

POPULATION — RESIDENTIAL

EXTERNAL MARKET — INDUSTRIAL

INTERNAL MARKET — COMMERCIAL

Availability of jobs (the employment rate) is a ratio of the current commercial and industrial populations to the total residential population. As a rule of thumb, the number of commercial and industrial zones together should roughly equal the number of residential zones.

If there are more jobs in your city than residents, new settlers will be attracted. If the job market declines during a local recession, your people will migrate away in search of jobs.

Housing for your residents is built in the residential zones. These zones must be powered and connected to the places of employment by roads. The structures built in residential zones are influenced by land value and population density.

Quality of life is a measure of relative “attractiveness” assigned to different zone locations. It is affected by negative factors such as pollution and crime and positive factors such as parks and accessibility.

There are thousands of variables that influence your city. All these variables can be influenced by your actions with the exception of one.

The external market (the economic conditions that exist outside of your city) is controlled by the simulation—(here is nothing you can do to change it. In many ways, this external market is the original source of all city growth. Towns frequently begin as production centers (steel towns, refineries, etc.) that service a demand in the surrounding region. As time passes, the external market grows to reflect the regional growth going on around your city.

The industry in your city will attempt to grow as the external market grows. For this to happen there must be room for expansion (more industrial zones) and an adequate labor supply (more residential zones).

The internal market is completely influenced by the conditions within your city. Internal production, created in the commercial zones, represents all the things that are purchased and consumed within the city. Food stores, gas stations, retail stores, financial services, medical care, etc.—all depend on a nearby population to service. Within SimCity, the size of the internal market determines the rate at which commercial zones will prosper. Commercial zones need enough zoned land to build on and an existent,

sufficient work force to employ. The structures built in commercial zones are mainly influenced by land value and population density.

Commercial zones grow and develop to serve the expanding internal market. Commercial growth will usually be slow at first, when the population is small and needs very little. As your city grows, commercial growth will accelerate and the internal market will become a much larger consumer of your total city production. This accelerating effect, when the external/industrial production is overtaken by the accelerating internal/commercial sector, can turn a sleepy little town of 50,000 into a thriving capital of 200,000 in a few short years.

The tax rate you set controls the amount of income generated by your city. As taxes are collected each year (simulation time), the BUDGET WINDOW will appear, giving you the fiscal details of your city and a chance to adjust rates. The simulation determines the amount of revenue collected by assessing each zone an amount based on its land value, current level of development and the current tax rate.

The tax rate has a global affect on your city's growth rate. If you set it low (0-4%), growth will be brisk, but the city income will be low. If you set it high (10-20%), you will collect a lot in the short run, but in the long run tax income will decrease along with the population. You must keep tax income high enough to invest in new development, but low enough not to scare off residents and businesses. A high tax rate is one way to control city growth, should you want to experiment with "growth control measures."

City budgeting affects the way your city grows. City infrastructure cost is represented by three departments: police, fire, and transportation. You may set the funding levels separately for each. All three departments will request a certain level of funding each year. You may supply all or part of the requested funds, in the attempt to balance safety needs and budgetary concerns.

POLICE DEPARTMENTS

Police stations lower the crime rate within a territory. The effective radius of your police station is related to the amount of funding allocated to the police department.

TAX RATE

BUDGETING

POWER

FIRE DEPARTMENTS

Fire departments prevent and extinguish fires. The level of funding determines the effective radius of a fire department. Fire departments put out fires within this radius much sooner than outside it, and decrease the chance that they will start in the first place. Fire departments cost \$100 per year to fund.

TRANSPORTATION DEPARTMENT

When you build roads and rail systems, you are charged for construction and yearly maintenance. The larger your transportation network, the more it will cost for upkeep. If you decide not to or are unable to pay this maintenance cost, roads will slowly deteriorate and become unusable. The maintenance cost for each piece is: Road - \$1, Bridge - \$4, Rail - \$4, Rail tunnel - \$10.

Electrical power makes modern cities possible. Efficient and reliable power transmission to all zones is the goal of good "power management."

Periodically in the simulation the entire power grid of your city is checked for links to power. If a zone is connected (by other zones or power lines) to a power plant, the zone is considered powered.

Zones must be powered for development to occur. Many things (such as fires, tornados, earthquakes and bulldozers) can knock down power lines and cause blackouts in parts of your city. Development will stop in unpowered zones, and if power is not quickly restored, the zone will decline back to its original state of emptiness.

Redundant power plants and power connections can make your power grid more reliable, but running more line adds construction costs.

TRANSPORTATION AND TRAFFIC

One of the most important elements of city structure is the transportation network. It moves Sims and goods throughout your city. Roads typically occupy as much as 25-40% of the land in urban areas. Traffic along these roads indicates which sections of your road system are used the most.

Traffic levels are simulated by a process known as "Trip Generation." Over time, each populated zone in the city will generate a number of trips, depending on the population. Each generated trip starts at the origin zone, travels down the road, and if a "proper destination" is reached, ends at the destination zone—otherwise, the trip fails. Trip failure indicates inaccessibility of a zone and limits its growth.

The majority of generated trips represent people commuting to and from work. Additional traffic is generated by residents traveling to shopping, recreation, etc. When analyzing traffic, the simulator tests the following traffic routes:

FROM: ORIGIN

Residential zones
Commercial zones
Industrial zones

TO: DESTINATION

Commercial zones and Industrial zones
Residential zones and Industrial zones
Residential zones

When Sims drive away from an origin zone, they have a limited "trip range" in which to find a destination zone. Heavy traffic decreases the trip range. If the destination zone is too far away, the trip is unsuccessful. Repeated unsuccessful trips will cause the Sims to move out of the origin zone.

Each road has a limited capacity for traffic. When this capacity is exceeded, traffic jams will form. Traffic jams drastically lower the capacity of a road, compounding the problem and frustrating drivers.

Traffic conditions fluctuate quickly. Avoid traffic problems by providing several routes for the traffic to take.

A road must be adjacent to a zone for the zone to be connected to the traffic pattern. Zones do not conduct traffic the way they conduct power.

Pollution levels are tracked in all areas of your city. This is a general "nuisance level" that includes air and water pollution, noise pollution, toxic wastes, etc. Pollution has a negative impact on the growth of residential areas.

The primary cause of pollution is industrialized zones. The level of pollution created by an industrial zone increases with its level of growth.

Traffic is another cause of pollution. There are limited means of combating the pollution level. Lowering traffic density, limiting industrial development, and separating the pollution from the residential areas will help.

Crime rates are influenced by population density, local law enforcement, and land values. As population density increases in an area, the number of crimes committed increases. Crime will also increase in areas of low land value.

POLLUTION

CRIME

LAND VALUE

The most effective way to deal with high crime rates is to introduce a police station into the area. Based on its level of funding, the police station will reduce the rate of crime in its sphere of influence. A long-term approach to lowering crime is to raise the land value of the area. One way to do this is to demolish and rezone (urban renewal).

Land value is one of the most fundamental aspects of urban structure. The land value of an area affects how that area is used. In this simulation the land value of an area is based on terrain, accessibility, pollution, and distance to downtown.

The farther the residents have to go to work, the lower the land value where they live, due in part to transportation costs. The value of commercial zones depends greatly on accessibility by the populace.

Land value is also affected by surrounding terrain. If land is closer to water, trees, agricultural areas, or parks, its value will rise. Creative placement of zones within the terrain, with little bulldozing, can make good use of this natural advantage.

HISTORY OF CITIES AND CITY PLANNING

BY CLIFF ELLIS

INTRODUCTION

The building of cities has a long and complex history. Although city planning as an organized profession has existed for less than a century, all cities display various degrees of forethought and conscious design in their layout and functioning.

Early humans led a nomadic existence, relying on hunting and gathering for sustenance. Between 8,000 and 10,000 years ago, systematic cultivation of plants and the domestication of animals allowed for more permanent settlements. During the fourth millennium B.C., the requirements for the "urban revolution" were finally met: the production of a surplus of storable food, a system of writing, a more complex social organization, and technological advances such as the plough, potter's wheel, loom, and metallurgy.

Cities exist for many reasons, and the diversity of urban forms can be traced to the complex functions that cities perform. Cities serve as centers of storage, trade, and manufacture. The agricultural surplus from the surrounding countryside is processed and distributed in cities. Cities also grew up around marketplaces, where goods from distant places could be exchanged for local products. Throughout history, cities have been founded at the intersections of transportation routes, or at points where goods must shift from one mode of transportation to another, as at river and ocean ports.

Religious elements have been crucial throughout urban history. Ancient peoples had sacred places, often associated with cemeteries or shrines, around which cities grew. Ancient cities usually had large temple precincts with monumental religious buildings. Many medieval cities were built near monasteries and cathedrals.

Cities often provided protection in a precarious world. During attacks, the rural populace could flee behind city walls, where defense forces assembled to repel the enemy. The wall served this purpose for millennia, until the invention of heavy artillery rendered walls useless in warfare. With the

CONSTRAINTS ON CITY FORM

advent of modern aerial warfare, cities have become prime targets for destruction rather than safe havens.

Cities serve as centers of government. In particular, the emergence of the great nation-states of Europe between 1400 and 1800 led to the creation of new capital cities or the investing of existing cities with expanded governmental functions.

Washington, D.C., for example, displays the monumental buildings, radial street pattern, and large public spaces typical of capital cities.

Cities, with their concentration of talent, mixture of peoples, and economic surplus, have provided a fertile ground for the evolution of human culture: the arts, scientific research, and technical innovation. They serve as centers of communication, where new ideas and information are spread to the surrounding territory and to foreign lands.

Cities are physical artifacts inserted into a preexisting natural world, and natural constraints must be respected if a settlement is to survive and prosper. Cities must conform to the landscape in which they are located, although technologies have gradually been developed to reorganize the land to suit human purposes. Moderately sloping land provides the best urban site, but spectacular effects have been achieved on hilly sites such as San Francisco, Rio de Janeiro, and Athens.

Climate influences city form. For example, streets have been aligned to take advantage of cooling breezes, and arcades designed to shield pedestrians from sun and rain. The architecture of individual buildings often reflects adaptations to temperature, rainfall, snow, wind and other climatic characteristics.

Cities must have a healthy water supply, and locations along rivers and streams, or near underground watercourses, have always been favored. Many large modern cities have outgrown their local water supplies and rely upon distant water sources diverted by elaborate systems of pipes and canals.

City location and internal structure have been profoundly influenced by natural transportation routes. Cities have often been sited near natural harbors, on navigable rivers, or along land routes determined by regional topography.

Finally, cities have had to survive periodic natural disasters such as earthquakes, hurricanes, tornados, and floods. The San Francisco earthquake of 1906 demonstrated how natural forces can undo decades of human labor in a very short time.

City planners must weave a complex, ever-changing array of elements into a working whole: that is the perennial challenge of city planning. The physical elements of the city can be divided into three categories: networks, buildings, and open spaces. Many alternative arrangements of these components have been tried throughout history, but no ideal city form has ever been agreed upon. Lively debates about the best way to arrange urban anatomies continue to rage, and show no signs of abating.

NETWORKS

Every modern city contains an amazing array of pathways to carry flows of people, goods, water, energy, and information. Transportation networks are the largest and most visible of these. Ancient cities relied on streets, most of them quite narrow by modern standards, to carry foot traffic and carts. The modern city contains a complex hierarchy of transportation channels, ranging from ten-lane freeways to sidewalks. In the United States, the bulk of trips are carried by the private automobile, with mass transit a distant second. American cities display the low-density sprawl characteristic of auto-centered urban development. In contrast, many European cities have the high densities necessary to support rail transit systems.

Modern cities rely on complex networks of utilities. When cities were small, obtaining pure water and disposing of wastes was not a major problem, but cities with large populations and high densities require expensive public infrastructure. During the nineteenth century, rapid urban growth and industrialization caused overcrowding, pollution, and disease in urban areas. After the connection between impure water and disease was established, American and European cities began to install adequate sewer and water systems. Since the late nineteenth century, cities have also been laced with wires and conduits carrying electricity, gas, and communications signals.

BUILDINGS

Buildings are the most visible elements of the city, the features that give each city its unique character. Residential structures occupy almost half of all urban land, with the building types ranging from scattered single-family

ELEMENTS OF URBAN STRUCTURE

EVOLUTION OF URBAN FORM

homes to dense high-rise apartments. Commercial buildings are clustered downtown and at various subcenters, with skyscrapers packed into the central business district and low-rise structures prevailing elsewhere, although tall buildings are becoming more common in the suburbs. Industrial buildings come in many forms ranging from large factory complexes in industrial districts to small workshops.

City planners engage in a constant search for the proper arrangement of these different types of land use, paying particular attention to the compatibility of different activities, population densities, traffic generation, economic efficiency, social relationships, and the height and bulk of buildings.

OPEN SPACES

Open space is sometimes treated as a leftover, but it contributes greatly to the quality of urban life. "Hard" spaces such as plazas, malls, and courtyards provide settings for public activities of all kinds. "Soft" spaces such as parks, gardens, lawns, and nature preserves provide essential relief from harsh urban conditions and serve as space for recreational activities. These "amenities" increasingly influence which cities will be perceived as desirable places to live.

The first true urban settlements appeared around 3,000 B.C. in ancient Mesopotamia, Egypt, and the Indus Valley. Ancient cities displayed both "organic" and "planned" types of urban form. These societies had elaborate religious, political, and military hierarchies. Precincts devoted to the activities of the elite were often highly planned and regular in form. In contrast, residential areas often grew by a slow process of accretion, producing the complex, irregular patterns that we term "organic." Two typical features of the ancient city are the wall and the citadel: the wall for defense in regions periodically swept by conquering armies, and the citadel—a large, elevated precinct within the city—devoted to religious and state functions.

Greek cities did not follow a single pattern. Cities growing slowly from old villages often had an irregular, organic form, adapting gradually to the accidents of topography and history. Colonial cities, however, were planned prior to settlement using the grid system. The grid is easy to lay out, easy to comprehend, and divides urban land into uniform rectangular lots suitable for development.

The Romans engaged in extensive city-building activities as they consolidated their empire. Rome itself displayed the informal complexity created by

centuries of organic growth, although particular temples and public districts were highly planned. In contrast, the Roman military and colonial towns were laid out in a variation of the grid. Many European cities, including London and Paris, sprang from these Roman origins.

We usually associate medieval cities with narrow winding streets converging on a market square with a cathedral and city hall. Many cities of this period display this pattern, the product of thousands of incremental additions to the urban fabric. However, new towns seeded throughout undeveloped regions of Europe were based upon the familiar grid. In either case, large encircling walls were built for defense against marauding armies; new walls enclosing more land were built as the city expanded and outgrew its former container.

During the Renaissance, architects began to systematically study the shaping of urban space, as though the city itself were a piece of architecture that could be given an aesthetically pleasing and functional order. Many of the great public spaces of Rome and other Italian cities date from this era. Parts of old cities were rebuilt to create elegant squares, long street vistas, and symmetrical building arrangements. Responding to advances in firearms during the fifteenth century, new city walls were designed with large earthworks to deflect artillery, and star-shaped points to provide defenders with sweeping lines of fire. Spanish colonial cities in the New World were built according to rules codified in the Laws of the Indies of 1573, specifying an orderly grid of streets with a central plaza, defensive wall, and uniform building style.

We associate the baroque city with the emergence of great nation-states between 1600 and 1750. Ambitious monarchs constructed new palaces, courts, and bureaucratic offices. The grand scale was sought in urban public spaces: long avenues, radial street networks, monumental squares, geometric parks and gardens. Versailles is a clear expression of this city-building model; Washington, D.C. is an example from the United States. Baroque principles of urban design were used by Baron Haussmann in his celebrated restructuring of Paris between 1853 and 1870. Haussmann carved broad new thoroughfares through the tangled web of old Parisian streets, linking major subcenters of the city with one another in a pattern that has served as a model for many other modernization plans.

Toward the latter half of the eighteenth century, particularly in America, the city as a setting for commerce assumed primacy. The buildings of the bourgeoisie expanded along with their owners' prosperity: banks, office

TRANSITION TO THE INDUSTRIAL

buildings, warehouses, hotels, and small factories. New towns founded during this period were conceived as commercial enterprises, and the neutral grid was the most effective means to divide land up into parcels for sale. The city became a checkerboard on which players speculated on shifting land values. No longer would religious, political, and cultural imperatives shape urban development; rather, the market would be allowed to determine the pattern of urban growth. New York, Philadelphia, and Boston around 1820 exemplify the commercial city of this era, with their bustling, mixed-use waterfront districts.

Cities have changed more since the Industrial Revolution than in all the previous centuries of their existence. New York had a population of about 313,000 in 1840 but had reached 4,767,000 in 1910. Chicago exploded from 4,000 to 2,185,000 during the same period. Millions of rural dwellers no longer needed on farms flocked to the cities, where new factories churned out products for new markets made accessible by railroads and steamships. In the United States, millions of immigrants from Europe swelled the urban populations. Increasingly, urban economies were being woven more tightly into the national and international economies.

Technological innovations poured forth, many with profound impacts on urban form. Railroad tracks were driven into the heart of the city. Internal rail transportation systems greatly expanded the radius of urban settlement: horsecars beginning in the 1830s, cable cars in the 1870s, and electric trolleys in the 1880s. In the 1880s, the first central power plants began providing electrical power to urban areas. The rapid communication provided by the telegraph and the telephone allowed formerly concentrated urban activities to disperse across a wider field.

The industrial city still focused on the city center, which contained both the central business district, defined by large office buildings, and substantial numbers of factory and warehouse structures. Both trolleys and railroad systems converged on the center of the city, which boasted the premier entertainment and shopping establishments. The working class lived in crowded districts close to the city center, near their places of employment.

Early American factories were located outside of major cities along rivers that provided water power for machinery. After steam power became widely available in the 1830s, factories could be located within the city in proximity to port facilities, rail lines, and the urban labor force. Large manufacturing zones emerged within the major northeastern and midwestern cities such as

Pittsburgh, Detroit, and Cleveland. But by the late nineteenth century, factory decentralization had already begun, as manufacturers sought larger parcels of land away from the congestion of the city. Gary, Indiana, for example, was founded in 1906 on the southern shore of Lake Michigan by the United States Steel Company.

The increasing crowding, pollution, and disease in the central city produced a growing desire to escape to a healthier environment in the suburbs. The upper classes had always been able to retreat to homes in the countryside. Beginning in the 1830s, commuter railroads enabled the upper middle class to commute in to the city center. Horsecar lines were built in many cities between the 1830s and 1880s, allowing the middle class to move out from the central cities into more spacious suburbs. Finally, during the 1890s electric trolleys and elevated rapid transit lines proliferated, providing cheap urban transportation for the majority of the population.

The central business district of the city underwent a radical transformation with the development of the skyscraper between 1870 and 1900. These tall buildings were not technically feasible until the invention of the elevator and steel-frame construction methods. Skyscrapers reflect the dynamics of the real estate market; the tall building extracts the maximum economic value from a limited parcel of land. These office buildings housed the growing numbers of white-collar employees in banking, finance, management, and business services, all manifestations of the shift from an economy of small firms to one of large corporations.

THE FORM OF THE MODERN CITY IN THE AGE OF THE AUTOMOBILE

The city of today may be divided into two parts: (1) an inner zone, coextensive with the boundaries of the old industrial city, and (2) suburban areas, dating from the 1920s, which have been designed for the automobile from the beginning.

The central business districts of American cities have become centers of information processing, finance, and administration rather than manufacturing. White-collar employees in these economic sectors commute in from the suburbs on a network of urban freeways built during the 1950s and 1960s; this "hub-and-wheel" freeway pattern can be observed on many city maps. New bridges have spanned rivers and bays, as in New York and San Francisco, linking together formerly separate cities into vast urbanized regions.

Waves of demolition and rebuilding have produced "Manhattanized" downtowns across the land. During the 1950s and 1960s, urban renewal programs cleared away large areas of the old city, releasing the land for new office buildings, convention centers, hotels, and sports complexes. Building surges have converted the downtowns of American cities into forests of tall office buildings. More recently, office functions not requiring a downtown location have been moved to huge office parks in the suburbs.

Surrounding the central business area lies a large band of old mixed-use and residential buildings that house the urban poor. High crime, low income, deteriorating services, inadequate housing, and intractable social problems plague these neglected areas of urban America. The manufacturing jobs formerly available to inner-city residents are no longer there, and resources have not been committed to replace them.

These inner-city areas have been left behind by a massive migration to the suburbs that began in the late nineteenth century but accelerated in the 1920s with the spread of the automobile. Freeway building after World War II opened up even larger areas of suburban land, which were quickly filled by people fleeing central city decline. Today, more people live in suburbs than in cities proper. Manufacturers have also moved their production facilities to suburban locations that have freeway and rail accessibility.

Indeed, we have reached a new stage of urbanization beyond the metropolis. Most major cities are no longer focused exclusively on the traditional downtown. New subcenters have arisen round the periphery, and these subcenters supply most of the daily needs of their adjacent populations. The old metropolis has become a multi-centered urban region. In turn, many of these urban regions have expanded to the point where they have coalesced into vast belts of urbanization—what the geographer Jean Gottman termed "megalopolis." The prime example is the eastern seaboard of the United States from Boston to Washington. The planner C.A. Doxiadis has speculated that similar vast corridors of urbanization will appear throughout the world during the next century. Thus far, American planners have not had much success in imposing a rational form on this process. However, New Town and greenbelt programs in Britain and the Scandinavian countries have, to some extent, prevented formless sprawl from engulfing the countryside.

THE ECONOMICS OF URBAN AREAS

Since the 1950s, city planners have increasingly paid attention to the economics of urban areas. When many American cities experienced fiscal crises during the 1970s, urban financial management assumed even greater

importance. Today, planners routinely assess the economic consequences of all major changes in the form of the city.

Several basic concepts underlie urban and regional economic analysis. First, cities cannot grow if their residents simply provide services for one another. The city must create products that can be sold to an external purchaser, bringing in money that can be reinvested in new production facilities and raw materials. This "economic base" of production for external markets is crucial. Without it, the economic engine of the city grinds to a halt.

Once the economic base is established, an elaborate internal market can evolve. This market includes the production of goods and services for businesses and residents within the city. Obviously, a large part of the city's physical plant is devoted to facilities for these internal transactions: retail stores of all kinds, restaurants, local professional services, and so on.

Modern cities are increasingly engaged in a competition for economic resources such as industrial plants, corporate headquarters, high-technology firms, and government facilities. Cities try to lure investment with an array of features: low tax rates, improved transportation and utility infrastructure, cheap land, and a skilled labor force. Amenities such as climate, proximity to recreation, parks, elegant architecture, and cultural activities influence the location decisions of businesses and individuals. Many older cities have had difficulty surviving in this new economic game. Abandoned by traditional industries, they are now trying to create a new economic base involving growth sectors such as high technology.

Today, cities no longer compete in mere regional or national markets: the market is an international one. Multinational firms close plants in Chicago or Detroit and build replacements in Asia or Latin America. Foreign products dominate whole sectors of the American consumer goods market. Huge sums of money shift around the globe in instantaneous electronic transactions. Cities must struggle for survival in a volatile environment in which the rules are always changing. This makes city planning even more challenging than before.

Modern city planning can be divided into two distinct but related types of planning. Visionary city planning proposes radical changes in the form of the city, often in conjunction with sweeping changes in the social and economic order. Institutionalized city planning is lodged within the existing structures of government, and modifies urban growth processes in moderate, pragmatic

MODERN CITY PLANNING

ways. It is constrained by the prevailing alignment of political and economic forces within the city.

VISIONARY OR UTOPIAN CITY PLANNING

People have imagined ideal cities for millennia. Plato's Republic was an ideal city, although lacking in the spatial detail of later schemes. Renaissance architects designed numerous geometric cities, and ever since architects have been the chief source of imaginative urban proposals. In the twentieth century, Le Corbusier, Frank Lloyd Wright, Paolo Soleri, and dozens of other architects have designed cities on paper. Although few have been realized in pure form, they have influenced the layout of many new towns and urban redevelopment projects.

In his "Contemporary City for Three Million People" of 1922 and "Radiant City" of 1935, Le Corbusier advocated a high-density urban alternative, with skyscraper office buildings and mid-rise apartments placed within park-like open spaces. Different land uses were located in separate districts, forming a rigid geometric pattern with a sophisticated system of superhighways and rail transit.

Frank Lloyd Wright envisioned a decentralized low-density city in keeping with his distaste for large cities and belief in frontier individualism. The Broadacre City plan of 1935 is a large grid of arterials spread across the countryside, with most of the internal space devoted to single-family homes on large lots. Areas are also carefully set aside for small farms, light industry, orchards, recreation areas, and other urban facilities. A network of superhighways knits the region together, so spatially dispersed facilities are actually very close in terms of travel time. In many ways, Wright's Broadacre City resembles American suburban and exurban developments of the post-WWII period.

Many other utopian plans could be catalogued, but the point is that planners and architects have generated a complex array of urban patterns from which to draw ideas and inspiration. Most city planners, however, do not work on a blank canvas; they can only make incremental changes to an urban scene already shaped by a complicated historical process.

INSTITUTIONALIZED CITY PLANNING

The form of the city is determined primarily by thousands of private decisions to construct buildings, within a framework of public infrastructure and regulations administered by city, state, and federal governments. City

planning actions can have enormous impacts on land values. From the point of view of land economics, the city is an enormous playing field on which thousands of competitors struggle to capture value by constructing or trading land and buildings. The goal of city planning is to intervene in this game in order to protect widely shared public values such as health, safety, environmental quality, social equity, and aesthetics.

The roots of American city planning lie in an array of reform efforts of the late nineteenth century: the Parks movement, the City Beautiful movement, campaigns for housing regulations, the Progressive movement for government reform, and efforts to improve public health through the provision of sanitary sewers and clean water supplies. The First National Conference on City Planning occurred in 1909, the same year as Daniel Burnham's famous Plan of Chicago. That date may be used to mark the inauguration of the new profession. The early city planners actually came from diverse backgrounds such as landscape architecture, architecture, engineering, and law, but they shared a common desire to produce a more orderly urban pattern.

The zoning of land became, and still is, the most potent instrument available to American city planners for controlling urban development. Zoning is basically the dividing of the city into discrete areas within which only certain land uses and types of buildings can be constructed. The rationale is that certain activities or building types don't mix well; factories and homes, for example. Illogical mixtures create nuisances for the parties involved and lower land values. After several decades of gradual development, land-use zoning received legal approval from the Supreme Court in 1926.

Zoning isn't the same as planning: it is a legal tool for the implementation of plans. Zoning should be closely integrated with a Master Plan or Comprehensive Plan that spells out a logical path for the city's future in areas such as land use, transportation, parks and recreation, environmental quality, and public works construction. In the early days of zoning this was often neglected, but this lack of coordination between zoning and planning is less common now.

Two other important elements of existing city planning are subdivision regulations and environmental regulations. Subdivision regulations require that land being subdivided for development be provided with adequate streets, sewers, water, schools, utilities, and various design features. The goal is to prevent shabby, deficient developments that produce headaches for both their residents and the city. Since the late 1960s, environmental

CONCLUSION: GOOD CITY FORM

regulations have exerted a stronger influence on patterns of urban growth by restricting development in floodplains, on unstable slopes, on earthquake faults, or near sensitive natural areas. Businesses have been forced to reduce smoke emissions and the disposal of wastes has been more closely monitored. Overall, the pace of environmental degradation has been slowed, but certainly not stopped, and a dismaying backlog of environmental hazards remains to be cleaned up. City planners have plenty of work to do as we move into the twenty-first century.

What is the good city? We are unlikely to arrive at an unequivocal answer; the diversity of human needs and tastes frustrates all attempts to provide recipes or instruction manuals for the building of cities. However, we can identify the crucial dimensions of city performance, and specify the many ways in which cities can achieve success along these dimensions.

A most useful guide in this enterprise is Kevin Lynch's *A Theory of Good City Form* (Cambridge, MA, MIT Press, 1981). Lynch offers five basic dimensions of city performance: vitality, sense, fit, access, and control. To these he adds two "meta-criteria," efficiency and justice.

For Lynch, a vital city successfully fulfills the biological needs of its inhabitants, and provides a safe environment for their activities. A sensible city is organized so that its residents can perceive and understand the city's form and function. A city with good fit provides the buildings, spaces, and networks required for its residents to pursue their projects successfully. An accessible city allows people of all ages and backgrounds to gain the activities, resources, services, and information that they need. A city with good control is arranged so that its citizens have a say in the management of the spaces in which they work and reside.

Finally, an efficient city achieves the goals listed above at the least cost, and balances the achievement of each goal with all the others. They cannot all be maximized at the same time. And a just city distributes benefits among its citizens according to some fair standard. Clearly, these two meta-criteria raise difficult issues which will continue to spark debates for the foreseeable future.

These criteria tell aspiring city builders where to aim, while acknowledging the diverse ways of achieving good city form. Cities are endlessly fascinating because each is unique, the product of decades, centuries, or even millennia of historical evolution. As we walk through city streets, we walk through

time, encountering the city-building legacy of past generations. Paris, Venice, Rome, New York, Chicago, San Francisco—each has its glories and its failures. In theory, we should be able to learn the lessons of history and build cities that our descendants will admire and wish to preserve. That remains a constant challenge for all who undertake the task of city planning.

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