

SimCity®

The City Simulator

User Documentation

DOS Version
for
IBM/Tandy
& Compatibles



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Dedicated to Cassidy

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INTRODUCTION

FOREWORD

Enter SimCity and take control. Be the undisputed ruler of a sophisticated real-time City Simulation. Become the master of existing cities such as San Francisco, Tokyo, and Rio de Janeiro, or create your own dream city (or dream slum) from the ground up.

Whether you take over an existing city or build your own, you are the Mayor and City Planner with complete authority.

Your city is 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, the city deteriorates.

The next few sections will explain the overall concept of SimCity and give information that will help you win Scenarios and design and build better cities.

ABOUT SYSTEM SIMULATIONS

SimCity is the first of a new type of entertainment/education software, called **SYSTEM SIMULATIONS**. 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, including:

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 dealing with disasters, crime, and pollution; and

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.

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

Zone – Set zoning boundaries for parks, 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 multi-tasking 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 you 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 XT-compatible running at 4.77 MHz, life in SimCity will be much slower than on a 386 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

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

SCENARIOS

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 which 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.

GETTING STARTED

COPY PROTECTION

SimCity is copy-protected. We are using a form of protection that is not on the disk. You can easily run the program from a hard disk and make backup copies.

NOTE: It is a good idea to make and use copies of the SimCity disk(s), and keep the originals in a safe place.

During the game you will need to look up information from a red sheet of paper that is included with the game. The Red Sheet cannot be photocopied. **DON'T LOSE IT!**

SIMCITY GRAPHICS

SimCity for IBM, Tandy, and compatibles supports many graphics standards, including:

CGA in the high-res monochrome mode – 640x200

MCGA in high-res monochrome mode only – 640x480

Hercules monochrome – 720x348

Tandy graphics – 320x200 in 16 colors

EGA high-res and VGA – 640x350 in 16 colors (requires 256K video RAM and 640K system RAM)

EGA low-res – 320x200 in 16 colors (if you have only 128K video RAM or 512K system RAM)

EGA high-res monochrome – 640 x 350 (if you have only 128K video RAM or 512K system RAM)

SOUND

SimCity includes digitized sounds that support the Tandy sound chip. It also supports a new low-cost sound board for IBM and compatible computers—the SOUNDMASTER board from COVOX. There is an information sheet and order form for this board included with the game. SimCity can also send the digitized sounds out through the speaker built into most computers, but the sound quality is not very good.

PRINTING

SimCity supports only Epson-compatible printers hooked to a parallel port. You can print your city on one page, or as a six-page poster.

KEYBOARD, MOUSE, AND JOYSTICK

SimCity can be played without a mouse or joystick, but it is much easier to control with one. To help you find your way around SimCity, there is a KEYBOARD REFERENCE CHART, included on the USER REFERENCE CARD that comes with the game.

If you have a mouse driver installed, the joystick will be ignored.

INSTALLING SIMCITY

Before you can run SimCity, you must install it to let it know, among other things, what kind of monitor you are using. You will notice that we have included both 5 1/4" and 3 1/2" disks. Grab the one(s) that fit your computer and put the other(s) away.

FLOPPY DISK INSTALLATION

If you want to run SimCity from a floppy disk, you will need two (2) blank, formatted floppy disks. One will become your working copy of SimCity, the other will hold the cities you build.

NOTE: If you have a 5 1/4" 360K disk drive, not all the files you need to run SimCity will fit on one disk. You may from time to time be asked to put in one of the original disks during the play of the game. Keep copies of both original disks handy during play.

HARD DISK INSTALLATION

You will need approximately 580K free space on your hard disk to install SimCity, and more space to store the cities you create.

The install program must be run from a floppy disk. It will create a SimCity sub-directory on your hard drive, and will copy the program and scenario files as well as the proper graphics and sound files to that sub-directory.

RUNNING THE INSTALL PROGRAM

Boot your computer.

Put the 3 1/2" disk or 5 1/4" Disk #1 in your floppy drive.

At the prompt, type **INSTALL**, and hit **RETURN**.

You will be asked: **Install from drive: [*] A: [] B:**

Use the **RIGHT** and **LEFT CURSOR KEYS** to move the asterisk to the drive you are installing from, and hit **RETURN**.

The program will then ask for confirmation. Hit "**Y**" or **RETURN** to confirm, "**N**" to go back and change your selection.

You will then be asked: **Install to drive: [] A: [] B: [*] C: [] D:**

Use the **RIGHT** and **LEFT CURSOR KEYS** to move the asterisk to the drive you are installing to, and hit **RETURN**.

If you are installing to a floppy, you will be reminded to put your floppy in the drive.

At the prompt: **Destination Directory -> C:\SIMCITY,**

or: -> **B:**,

hit **RETURN**, or change the directory name, then hit **RETURN**.

NOTE: If you only have one floppy disk drive, and no hard drive, you must install from the A: drive to the A: drive. The program will prompt you when to change disks.

The program will then ask for confirmation. Hit "**Y**" or **RETURN** to confirm, "**N**" to go back and change your selection.

Next, you will be asked which graphics display you have. Use the **RIGHT** and **LEFT CURSOR KEYS** to move the asterisk to the proper graphics set, and hit **RETURN**.

If you have CGA, MCGA, Hercules, or Tandy graphics, you have only one choice. If you have an EGA (or VGA) card, you have three:

640x350 in 16 colors – requires 640K RAM and 256K video RAM, and a color monitor.

320x200 in 16 colors – requires 512K RAM and 128K video RAM, and a color monitor.

640x350 monochrome – requires 512K RAM and 128K video RAM, and a color or monochrome monitor.

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The program will then ask for confirmation. Hit "Y" or **RETURN** to confirm, "N" to go back and change your selection.

Next you will be asked what type of **JOYSTICK** (if any) you will be using. Use the **RIGHT** and **LEFT CURSOR KEYS** to move the asterisk to the proper setting, and hit **RETURN**.

NOTE: You cannot have both a mouse and joystick installed at the same time.
If you have a mouse driver installed, the computer will ignore the joystick.

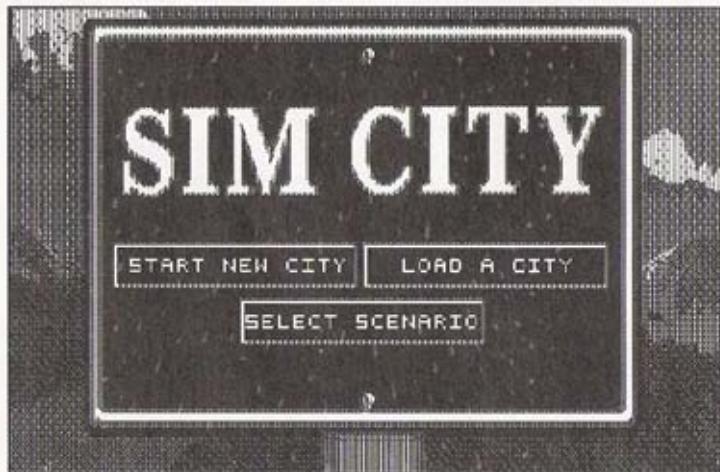
The program will then ask for confirmation. Hit "Y" or **RETURN** to confirm, "N" to go back and change your selection.

Next you will be asked about **SOUND**. Use the **RIGHT** and **LEFT CURSOR KEYS** to move the asterisk to the proper setting, and hit **RETURN**. If you wish no sound, choose None. If you want the digitized sounds sent through your built-in speaker (low-quality) choose IBM; if you have a Tandy computer with a DAC chip, choose Tandy Digital. If you have a COVOX Sound Master board installed, choose that.

You will be asked to confirm your sound installation, then you will be asked to reconfirm all your choices once more.

Now the SimCity program, scenarios, and the proper sound and graphics files will be copied to the destination disk. If you are installing from the 5 1/4" Disk 1, you will be asked to put in Disk 2 so that more files can be copied.

Now you're ready to enter SimCity.



TUTORIAL — A WALK THROUGH YOUR CITY

Boot your computer, and install a mouse driver if you are using a mouse.

If you have installed SimCity to a floppy disk, put the disk in drive A:. At the A:> prompt, type **SIMCITY** and hit **RETURN**.

If you have installed it to a hard disk, **make sure that the SimCity sub-directory is the CURRENT DIRECTORY**. Type **SIMCITY** at the prompt, and hit **RETURN**.

NOTE: If you are running SimCity with only one floppy disk drive and no hard drive, you must keep the installed copy in the A: drive until the program is completely loaded. When you want to save your city, then take out the SimCity disk and put in the data disk. If and when you need to put the SimCity disk back, the program will prompt you.

Soon you will see the road sign giving you the following choices: **START NEW CITY**, **LOAD A CITY**, and **SELECT SCENARIO**. Somewhere on the screen will be a pointer.

NOTE: The pointer is controlled by a mouse, a joystick, or by the cursor keys. When this tutorial instructs you to "CLICK" on something, it means to move the pointer to that spot, and either click the left mouse button, the joystick button, or the space bar. There are many keyboard shortcuts mentioned later in this manual. See the included KEYBOARD REFERENCE CHART.

Move the pointer to "**START A NEW CITY**," and CLICK the mouse button, the joystick button or hit the space bar.

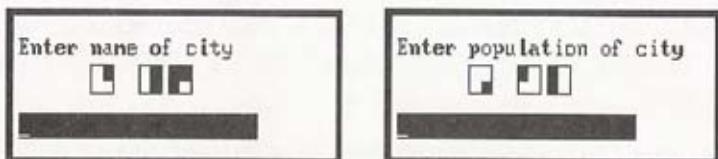
Now you will choose your city's name, and set the **GAME PLAY LEVEL**.



The default name is "Heresville." If you wish to change it, CLICK on the name Heresville. The pointer will disappear. Type in your new name, and hit RETURN. For this tutorial, I will use the name "OurTown." You may use up to 17 letters, but when you save your city to disk it will be cut off at eight letters, and have the extension ".cty" 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 box 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 the "OK" box.

NOTE: Every so often, while playing SimCity, you will be presented with a small box with three symbols, and you will be asked for the Name or Population of a city. When this happens, you will need the Red Sheet that came with the game. The first symbol is like a page number. Find the page that has the same symbol in the upper-right corner.



Next, go down the columns on that page, looking at the two symbols to the left of each city name, until they match the other two symbols on the screen. Then enter the City Name, or Population, and hit RETURN.

You will have three chances to get it right. It is very important—the lives and welfare of many Sims depend on you getting this right.

Now you will see a message that lets you know that a new landform is being generated.

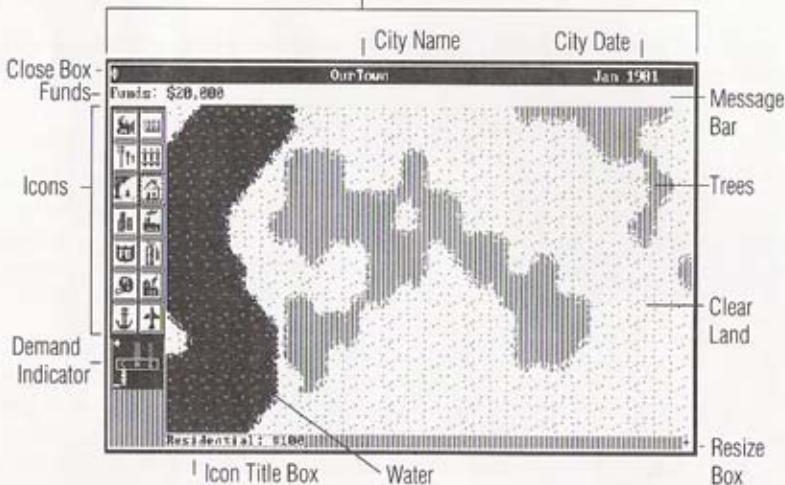
Now terraforming

You are now in SimCity.

Along the top of the screen is the **MENU BAR**. Below that is the **EDIT WINDOW**.

Edit Window

Title Bar



The **EDIT WINDOW** is where you will do the actual building and zoning. At the top of the EDIT WINDOW is the **TITLE BAR**. This displays the name of the city, and the date. On the left side of the TITLE BAR is the **CLOSE BUTTON**. If you CLICK on this button, the window will close, or go away. Go ahead and try it.

Now let's get it back. Move the pointer to the **WINDOWS MENU** in the upper-right corner of the screen. CLICK on the word **WINDOWS**, and the menu will appear. If you have a mouse or joystick, move the pointer down to **EDIT**, and click the left button. If you are using the keyboard, use the CURSOR KEYS to highlight **EDIT**, and hit the SPACE BAR. The window comes back.

***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.*

Below the TITLE BAR is the **MESSAGE BAR**. The left side always displays your available **FUNDS**. The rest of the bar will occasionally display messages to you from the Sims.

Note the **ICONS** (pictures) below the MESSAGE BAR on the left. They are buttons that work just like icons in various draw and paint programs. These are your zoning and building functions. Somewhere in the middle of the window is the pointer. This will change size and shape depending on the active icon.

Below the ICONS is the **DEMAND INDICATOR**. This gives the demand levels for Commercial, Residential, and Industrial zones, and can be helpful in planning your city.

Below the DEMAND INDICATOR and to the right is the **ICON TITLE BOX**, giving the name and cost of the active ICON.

At the bottom right corner of the window is the **RESIZE BOX**. You can point to this, click and hold, and drag it to stretch the size of the EDIT WINDOW.

The main portion of the window is the land. Your available land is made of three types of terrain, which will appear differently depending on your monitor. The brown (or lightest-shaded) areas are **CLEAR LAND**, the green (or medium-shaded) areas are forests and **TREES**, and the blue (or darkest-shaded) 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.

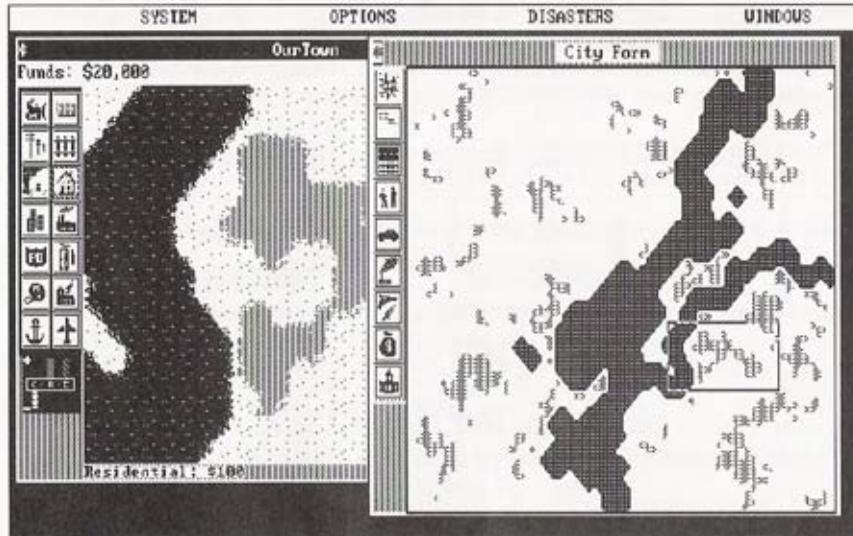
To scroll the terrain under the EDIT WINDOW, move the pointer to the top, bottom, sides or corners of the screen. Use the MOUSE, JOYSTICK or CURSOR KEYS. If it won't go in one direction, that means you are at a boundary of your territory.

***NOTE:** For now, keep the Scroll Lock off.*

Another way to scroll is to hold down the **CTRL KEY** while using the CURSOR KEYS. Holding down the CTRL KEY while operating a JOYSTICK will also cause scrolling.

To get an overview of your entire city limits, look at the **MAP WINDOW**. You can open the MAP WINDOW by going to the WINDOWS MENU and clicking on "MAPS," but there is also a shortcut: hit **RETURN**.

You can see many different demographic views of the city, chosen by the icons on the left. The type of map is shown at the top of the window, in the **TITLE BAR**. At the left of the TITLE BAR is the **CLOSE BUTTON** for this window.



Somewhere in the MAP WINDOW is a large **RECTANGLE**. This RECTANGLE outlines the close-up view in the EDIT WINDOW. CLICK and hold on the RECTANGLE and DRAG it to cover a place on the map with open land, trees, and water, and release. The EDIT WINDOW will redraw at the new location.

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**.  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 (or SPACE BAR) down and move the pointer slowly across the forest. Mass destruction. Clear a large area of land to prepare for building.

CLICK 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.

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Now decide where to position a **POWER PLANT** in your city. Point to the **POWER PLANT ICON** and CLICK. A small menu will appear, giving you the option of choosing a coal or nuclear plant. For now, CLICK on the **COAL 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.



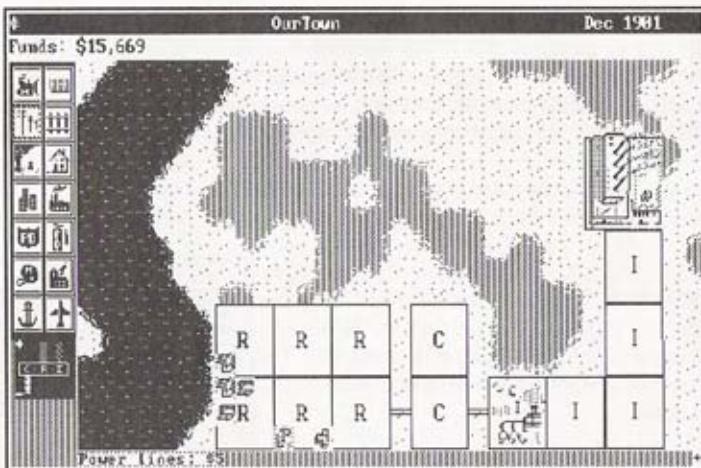
To do this, CLICK the **POWER LINE ICON**. Using your pointer and button or space bar, lay **POWER LINES** from your Power Plant to your Residential Zones. Adjacent power line sections will automatically connect to each other. Roadways and Transit Lines connect in the same manner. In a moment, the flashing 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.



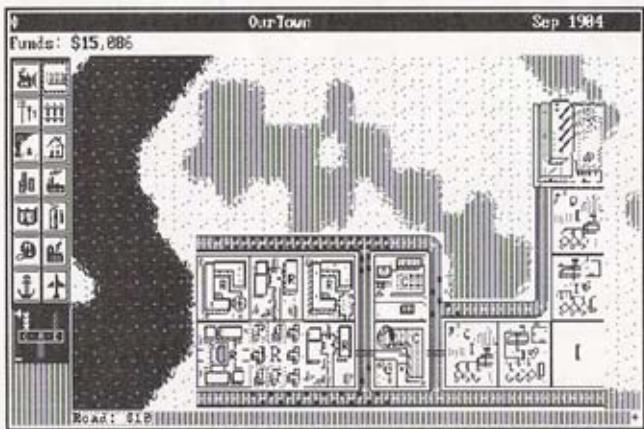
NOTE: There is a delay between the time you connect power to a zone and the time the flashing lightning symbol disappears. This delay gets longer as your city gets larger.



Notice that as you select different icons, the icon's description and its associated cost will be displayed in the box near the lower left corner of the window. The MESSAGE BAR displays your total funds available. 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.

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Now, 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.



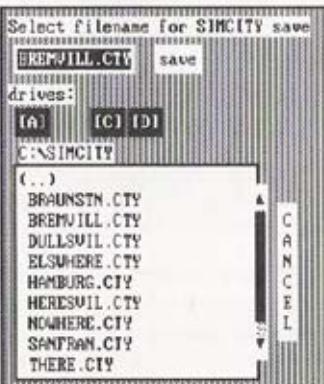
Now move the pointer to the **MENU BAR**, CLICK on the **WINDOWS MENU**, and select **BUDGET**. This is where you set the level of funding for your fire, police, and transportation departments. CLICK the **UP** or **DOWN ARROWS** to change the funding levels. You can also adjust the current property 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 come back later. CLICK the **GO WITH THESE FIGURES** box when you are done.

Now CLICK on any showing part of the **MAPS WINDOW**. Now 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 at the left. 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, move the pointer to any area of your city in the **EDIT WINDOW**, hold down the "Q" key, and press the left mouse button, joystick button, or space bar. You will be shown a small window filled with information on the area under the pointer.

Now, let's **SAVE** the city to disk. If you are using a two-floppy system, make sure you have a formatted disk in drive B:. If you are using a one floppy system, take the SimCity disk out of the A: drive, and put in your data disk. CLICK on the **SYSTEMS MENU**. Highlight **Save City**, and CLICK. You will see the **"File Saving Screen."**



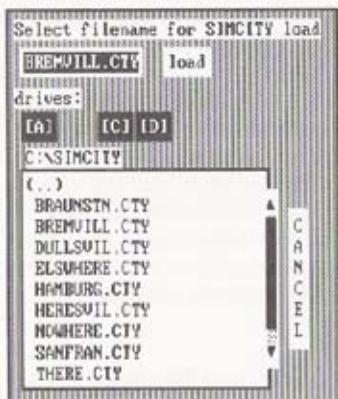
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Near the top is a box with the name of your city. If you wish to change it now, CLICK on the name, and type in a new one.

Below that is the list of drives. CLICK on the drive to which you want to save the city.

Below that is the **Files Box**. If it is your hard drive, you may see your sub-directories, in parentheses, listed in the Files Box. CLICK on the sub-directory name to open it, and CLICK on (...) to move up one level of directory. If all the files or directories do not show, CLICK on the UP and DOWN ARROWS to the right of the files.

When you have chosen your city name and drive, and sub-directory (if any), then CLICK on the **Save Box**. Your city will now be preserved for future use.



To load a city, open the SYSTEM MENU, and CLICK on **Load a City**. You will see the **File Loading Screen**. It looks and works almost like the File Saving Screen.

CLICK on the drive from which you want to load. Then find the right sub-directory (if any), and CLICK on the name of the city you want to load. The name will appear in the box at the top of the screen.

Now CLICK on the little box that says **LOAD**, and your city will be back in action.

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

CONTROLLING SIMCITY

IN GENERAL

A big part of controlling SimCity is controlling the windows. 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. We suggest that you arrange the windows so there is always a part of each one showing. To bring a window to the front, just CLICK on any part of it.

WITH A MOUSE

In SimCity, you will primarily use 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.

To activate menus with a mouse, move the mouse pointer to the menu you wish to view, and press and hold the left mouse button. The menu will be displayed. Move the pointer down the menu to the item you want to activate, and release the mouse button. The menu item will be activated. Some menu items will bring up a sub-menu. When this occurs, just move the pointer to the selection you want, and press and release the left mouse button.

Icons are selected by moving the mouse pointer to the icon you want, and clicking the left button. Building and zoning functions are performed by moving the pointer to the desired location, and clicking the left mouse button.

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.

WITH A JOYSTICK

The joystick is used just like the mouse. The Joystick Button emulates the left mouse button. The joystick will not work if a mouse driver is installed. Holding down the **Ctrl key** while operating the Joystick causes the screen to scroll without the cursor moving.

WITH A KEYBOARD

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

Note: When running SimCity, the NumLock should be off.

CURSOR KEYS AND NUMERIC KEYPAD

The **CURSOR KEYS** move the pointer around the screen.

The **INSERT** and **SPACE** keys emulate the left mouse button.

The **DELETE** key emulates the right mouse button.

"5" moves the pointer to the center of the screen.

HOME moves the pointer to the left side of the screen.

END moves the pointer to the right side of the screen.

PgUp moves the pointer to the top of the screen.

PgDn moves the pointer to the bottom of the screen.

When used with the **Ctrl key**, the CURSOR KEYS and NUMERIC KEYPAD scroll the terrain or city under the EDIT WINDOW.

- Ctrl-Left Arrow** (4) scrolls the city to the left.
- Ctrl-Right Arrow** (6) scrolls the city to the right.
- Ctrl-Up Arrow** (8) scrolls the city up.
- Ctrl-Down Arrow** (2) scrolls the city down.
- Ctrl-Home** (7) scrolls the city angularly up and to the left.
- Ctrl-End** (1) scrolls the city angularly down and to the left.
- Ctrl-PgUp** (9) scrolls the city angularly up and to the right.
- Ctrl-PgDn** (3) scrolls the city angularly down and to the right.

+ and -

If you are not using a mouse, then + and - on the NUMERIC KEYPAD are very helpful. They cycle the pointer around the "HOT SPOTS" of any window or message box. HOT SPOTS are places where clicking the pointer will either activate an icon, or change a setting. For example, in the EDIT WINDOW, instead of using the CURSOR KEYS to move the pointer to an icon and clicking, you can hit the + or - keys to cycle through and activate the icons. In the BUDGET WINDOW, where there are many small arrows to click on to change the settings. It can be difficult to accurately locate the pointer using the CURSOR KEYS. Use the + and - keys to cycle to the spot you want.

KEYBOARD SHORTCUTS

ESCAPE will cancel any menu and many functions. When in doubt, hit **ESCAPE**.

In POP-UP MESSAGES that ask for a YES or NO answer, Hit "**Y**" or **RETURN** for YES, and "**N**" or **ESCAPE** for NO.

Holding down the **ALT** key while hitting the first letter of a menu name will open the menu.

- Alt-S** opens the SYSTEM MENU
- Alt-O** opens the OPTIONS MENU
- Alt-D** opens the DISASTERS MENU
- Alt-W** opens the WINDOWS MENU

SimCity also follows the **Tandy Deskmate** interface for opening menus:

- F2** brings up the first menu – SYSTEM
- F3** brings up the next – OPTIONS
- F4** brings up the next – DISASTERS, and
- F5** brings up the last – WINDOWS

Once a menu is displayed, you may use the UP and DOWN CURSOR KEYS to highlight the menu choice, and hit SPACE or INSERT to activate it. You may also highlight a menu choice by hitting the key with the first letter of the choice. If there is more than one menu choice beginning with the same letter, then repeatedly hitting the key will cycle the highlight through all the choices beginning with that letter. For example, once the SYSTEM MENU is open, if you hit the "L" key, "LOAD SCENARIO" will be highlighted. Hit the "L" key again, and "LOAD CITY" will be highlighted. Hit it again and "LOAD SCENARIO" will be highlighted again, etc.

To close a menu without choosing a function, hit the **ESCAPE** key.

Many menu items can be activated directly, without displaying the menu. This is done through the following **CTRL-key** combinations.

Ctrl-L	Activate Load City menu function
Ctrl-S	Activate Save City menu function
Ctrl-X	Exit SimCity, and return to DOS
Ctrl-A	Toggles Auto-Bulldoze mode on and off
Ctrl-M	Brings up the MAP WINDOW (also the ENTER or RETURN key)
Ctrl-G	Brings up the GRAPHS WINDOW
Ctrl-B	Brings up the BUDGET WINDOW
Ctrl-E	Brings up the EDIT WINDOW
Ctrl-U	Brings up the EVALUATION WINDOW
Ctrl-C	Closes the front window
Ctrl-H	Hides the front window (moves it to the bottom)
Ctrl-P	Position the front window
Ctrl-R	Resize the EDIT WINDOW

OTHER SPECIAL KEYS

P	Temporarily activates the POWER LINE icon as long as it is held down
T	Temporarily activates the TRANSIT LINE icon as long as it is held down
R	Temporarily activates the ROAD icon as long as it is held down
B	Temporarily activates the BULLDOZER icon as long as it is held down
O	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

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.

TAB Hitting TAB is the same as clicking on the GOTO button. Hitting TAB again will return you to where you were.

F10 Hides the front window.

SCROLL LOCK disables EDIT WINDOW scrolling by moving the pointer to the edges of the screen. Scrolling can still be performed by using the Ctrl key with the NUMERIC KEYPAD.

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

MENUS

SYSTEM MENU

ABOUT SIMCITY brings up a screen giving fascinating and vital information about SimCity and Maxis.

PRINT brings up a window giving you the choice of printing out your city on a single page, or on a multi-page poster. SimCity printing only supports Epson-compatible printers.

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

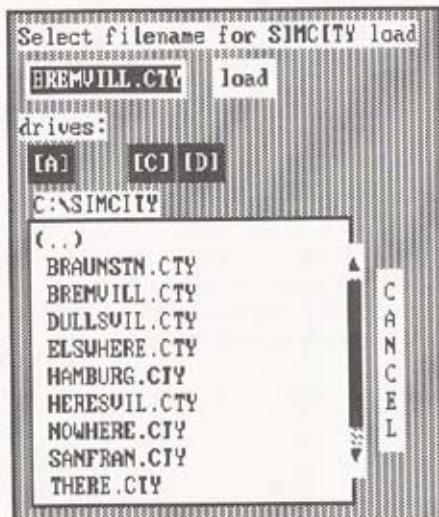
START NEW CITY generates a new, empty terrain. Clears existing city (if any) from memory. You will be asked if you are sure, to give you a chance to go back and save the old city first. You will next be given a chance to set the GAME PLAY LEVEL and name your city.

LOAD CITY brings up the "File Loading Screen," 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.

Once the File Loading Screen is open, choose the drive you want to load from, by moving the cursor to the drive letter and pressing the left mouse button, the SPACE key, or the INSERT key. Only city data files will be displayed. Sub-directories are shown in parentheses. To view the files in a sub-directory, CLICK on its name. To move up a sub-directory level CLICK on the double dot (..). If there are more files than can be displayed in the window, CLICK on the up and down arrows to the right of the file names to scroll through the list.

You may also enter the name of the file you wish to load by clicking on the file name box and typing it in. If you decide not to load a city at this time, you may CLICK on CANCEL or hit ESCAPE.

Use the + and - keys to move the pointer to the various HOT SPOTS in the File Loading Screen.



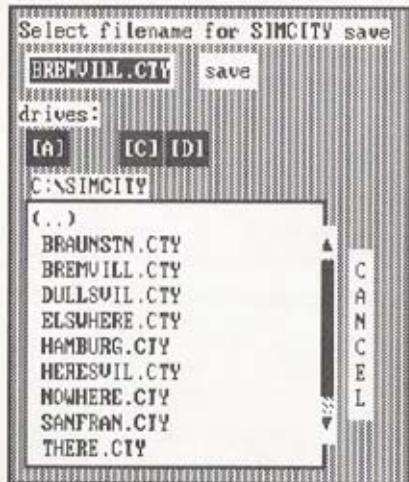
SAVE CITY AS......brings up the "File Saving Screen," allowing you to save the scenario or city in progress to disk for later use. Use this option to save a city for the first time, or if you want to save it under a different name, or to a different disk or sub-directory.

Once the File Saving Screen is open, choose the drive you want to save to, by moving the cursor to the drive letter and pressing the left mouse button, the SPACE key, or the INSERT key. Only city data files will be displayed. Sub-directories are shown in parentheses. To view the files in a sub-directory, CLICK on its name. To move up a sub-directory level CLICK on the double dot (..). If there are more files than can be displayed in the window, CLICK on the up and down arrows to the right of the file names to scroll through the list.

Once you have located the place you wish to save your city, enter the name under which you wish to save the city by clicking on the file name box and typing it in. Then CLICK on the SAVE button. If you decide not to save a city at this time, you may CLICK on CANCEL or hit ESCAPE.

Use the + and - keys to move the pointer to the various HOT SPOTS in the File Saving Screen.

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.

EXIT ends SimCity, and returns you to DOS.

OPTIONS MENU

Most of the options set in this menu are saved with the city. When an option is active, there will be an arrow head to the left of the option.

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 the Police.

AUTO-GOTO automatically transports you to the scene of a disaster or major event. If AUTO-GOTO is not active, and there is a disaster or event, you will be given a message in the EDIT WINDOW MESSAGE BAR and you will be supplied with a GOTO button.  To go to the disaster or event, click on the button, or hit the TAB key. Hit the TAB key again to return  to where you were.

SOUND toggles the city sounds on and off. It will say SOUND ON when it is active, and SOUND OFF when it is not. 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 maximum speed possible on your machine. FAST is slightly slower. AVERAGE is the default setting. SLOW is the slowest setting. PAUSE stops time. Zoning and building are possible in paused time, but there will be no growth or evolution.

If you have a computer based on an 8088 running at 4.77 MHz (XT-compatible) you will probably want to be at the Fastest setting most of the time.

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

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.

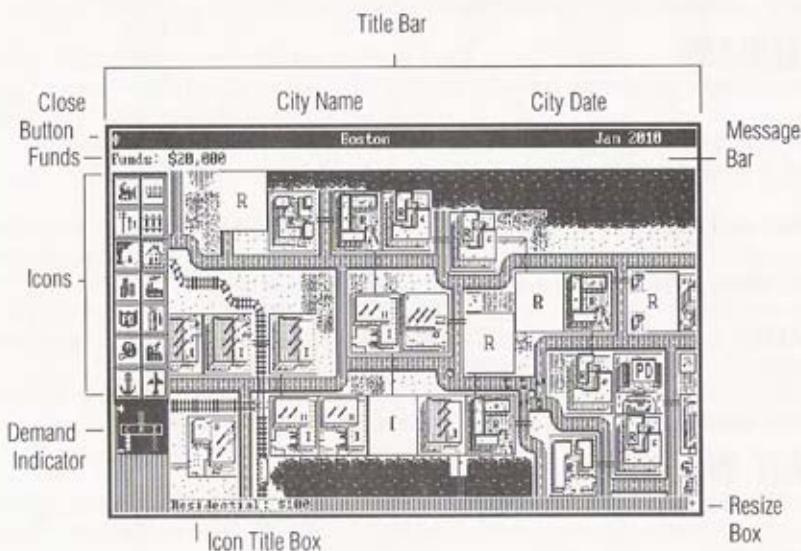
CLOSE closes the top window.

HIDE moves the top window to the bottom.

POSITION activates the cursor keys to move the active window.

RESIZE activates the cursor keys to resize the EDIT WINDOW.

THE EDIT WINDOW



THE EDIT WINDOW

This is where all actual zoning and building takes place.

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 it 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 GADGETS

The **TITLE BAR** displays the city name and date. Clicking and dragging the Title Bar allows you to relocate the EDIT WINDOW. On the far left of the Title Bar is the **CLOSE BUTTON**. Clicking on this button will close the window.

The **MESSAGE BAR**, located directly below the Title Bar, displays your current FUNDS, status messages to you from the simulator, and demand messages from the Sims themselves. Clicking on the message bar will bring back the last message.



A **GOTO BUTTON** will appear in the Message Bar along with a message about a disaster or event somewhere in the city. Clicking on the GOTO button takes you to the scene of the disaster or event. The **TAB** key activates the GOTO button. Hitting TAB again will return you to where you were.

ICONS along the left side of the window are for selecting the editing functions. ICONS are activated by pointing to them and clicking the left mouse button. You can also use the + and - keys to cycle through the icons, and activate them. See the KEYBOARD REFERENCE CHART or the Keyboard section of CONTROLLING SIMCITY above.

The **ICON TITLE BOX**, located near the lower-left corner of the window, gives the name and cost of the selected Icon.



The **DEMAND INDICATOR**, located just below the Icons, lets you know how many Commercial, Residential, and Industrial zones the Sims need. If the bars point up, there is a positive demand—they need more. If the bars point down, there is a negative demand—they have too many.

The **RESIZE BOX**, located in the lower-right corner of the EDIT WINDOW, allows you to resize the window. Move the pointer to the resize box, and press and hold the mouse button, the SPACE bar or the INSERT key. Then drag the mouse or use the CURSOR KEYS to resize the window. When you let go of the button or key, the window will redraw at its new size.

EDIT WINDOW ICONS

Active icons are highlighted. Ghosted icons are unavailable due to lack of funds. When an icon is selected, a rectangle will accompany the pointer 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.

Note: *Bulldozing the center of a zone will destroy the whole zone.*

Bulldozing one section of land costs \$1.



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.

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.

Holding down the SHIFT key while laying roads will constrain them to a straight line.

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. The delay grows longer as the city grows larger.

Power lines cannot cross zoned land. They can be built over trees, shrubbery, and shoreline only after bulldozing, or activating the Auto-Bulldoze function from the OPTIONS MENU.

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.

Holding down the SHIFT key while laying power lines will constrain them to a straight line.

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. Place tracks in heavy traffic areas to help alleviate congestion.

Intersections and turns are created automatically. Lay continuous transit lines by clicking and dragging your pointer. Tracks laid under rivers will appear as dashed lines. These are underwater tunnels, and must be vertical or horizontal—no turns, curves or intersections.

Holding down the SHIFT key while laying tracks will constrain them to a straight line.

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 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, 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 Department. 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.



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

When your first taxes are collected in a new city, and each year after, 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.

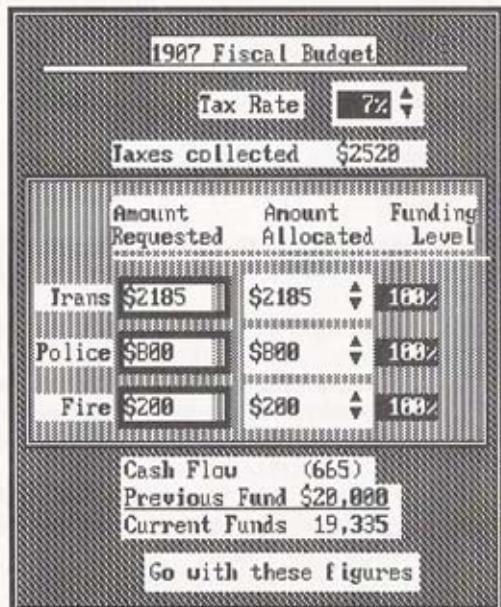
The BUDGET WINDOW can be opened from the WINDOWS MENU, or by hitting Ctrl-B.

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



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 taxes collected 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 that you have placed. 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.

Transportation maintenance funding 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.

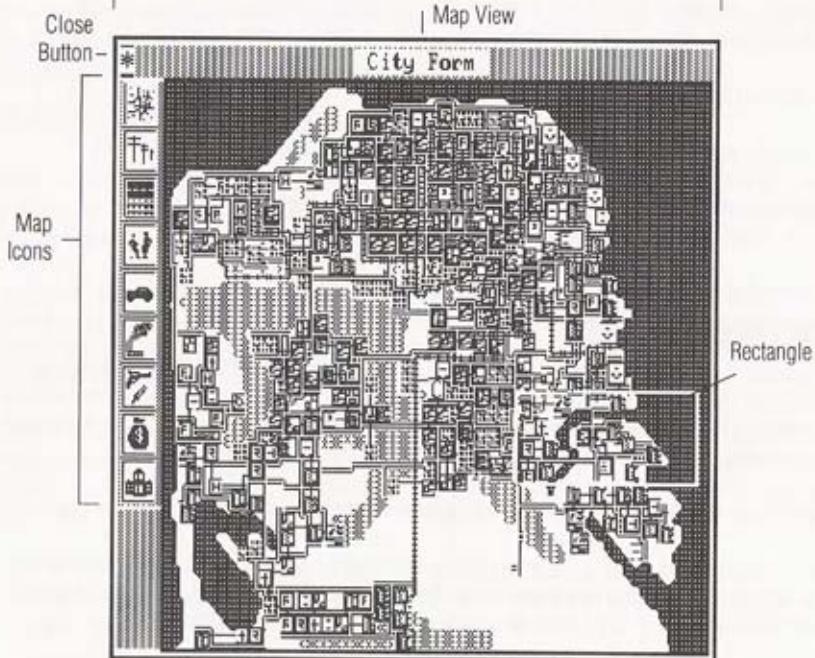
CASH FLOW

Cash Flow = Taxes Collected – 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.

MAPS WINDOW

Title Bar



CITY FORM



POWER GRID



TRANSPORTATION



POPULATION



TRAFFIC DENSITY



POLLUTION



CRIME



LAND VALUE



CITY SERVICES



DENSITY KEY

MAPS WINDOW

The MAPS WINDOW, which can be opened from the WINDOWS MENU, by hitting Ctrl-M, or hitting RETURN, gives you various overviews of your city. In the main portion of MAPS WINDOW is a RECTANGLE that outlines the area shown in the EDIT WINDOW. You can move the rectangle around the map with the mouse or cursor keys to change the area displayed in the EDIT WINDOW.

For demographic maps that show density, rate or comparative levels, a Density Key will be shown in the lower-left corner of the window. Depending on your monitor and graphics card, this will either be in color or in shades.

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 **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.

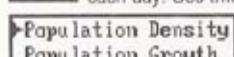


The **TRANSPORTATION MAP** is a road and rail map of the city. Use this map to examine traffic access to all parts of the city and plan further expansion of the network.



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

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

USING THE MAPS

The MAP WINDOW should be constantly referred to in all stages of city planning, building and managing.

BEFORE YOU BUILD

Use the map before beginning a new city to plan:

- where you want your city center,
- where you want the high-class 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.

Printing the map and sketching in your plan with pencil or pen can save a lot of bulldozing and re-zoning and rebuilding.

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 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.

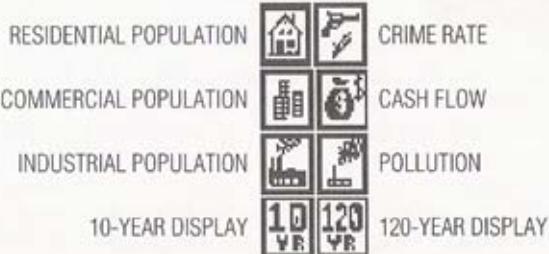
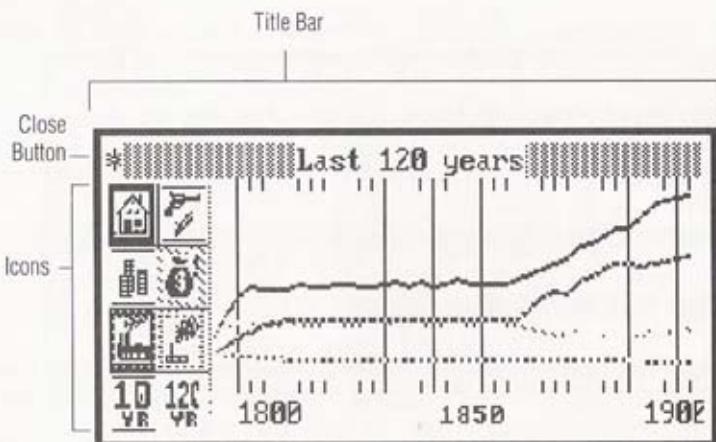
Use the pollution map to locate problem areas.

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



GRAPHS WINDOW

The GRAPHS WINDOW gives you time-based graphs of various city data. It can be opened through the WINDOWS MENU or by hitting Ctrl-G. Click and drag the TITLE BAR to relocate the window.



You may view graphs for time periods of either the last 10 years or the last 120 years by clicking on the "10-YEAR/120-YEAR" button.



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.

Note: Cash flow has little to do with your current funds, or how much you spend in building and zoning (except that city expansion will increase both taxes collected and maintenance costs).



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

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, every year, a very slight rise in the crime rate will not be noticeable. But on a Graph, you would 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.

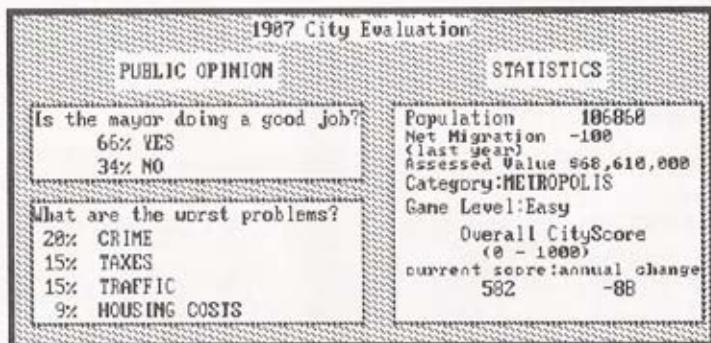
Crime rate can be displayed, revealing slight but consistent upward or downward trends.

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, 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 of 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, somewhat slower 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 which 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 which 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 right leader. It is your job to attract new growth and development, turning Dullsville into a Metropolis by the 21st century.

Difficulty: Easy

Time Limit: 30 years

Win Condition: Metropolis

SAN FRANCISCO, CA 1906 – 8.0 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: Very Difficult

Time Limit: 5 years

Win Condition: 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: Very Difficult

Time Limit: 5 years

Win Condition: 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: Easy

Time Limit: 10 years

Win Condition: 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: Moderately difficult

Time Limit: 5 years

Win Condition: 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: Moderately Difficult

Time Limit: 10 years

Win Condition: 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: Very Difficult

Time Limit: 5 years

Win Condition: 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: Moderately Difficult

Time Limit: 10 years

Win Condition: City Score above 500

GAME PLAY LEVEL

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.

GROWING A CITY

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.

Boards 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 during a disaster or emergency and deteriorating.

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 USER REFERENCE CARD

Included in the SimCity box is the USER REFERENCE CARD, which includes the ZONE EVOLUTION CHART, THE CITY DYNAMICS CHART, AND THE KEYBOARD 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 graphics 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 gather information on, 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 REFERENCE CHART

The Keyboard Reference Chart gives a visual summary of all the keyboard controlled functions and shortcuts.

LIST OF FILES ON THE DISKS

5 1/4" DISK #1

SIMCITY	.EXE	The SimCity executable program
INSTALL	.EXE	The Installation program
BERN	.PSN	Scenario File
BOSTON	.PSN	Scenario File
DETROIT	.PSN	Scenario File
DULLSVIL	.PSN	Scenario File
HAMBURG	.PSN	Scenario File
RIO	.PSN	Scenario File
SANFRAN	.PSN	Scenario File
TOKYO	.PSN	Scenario File
SOUNDDAT	.V4	Sound Data File

5 1/4" DISK #2

CEGADAT	.PGF	EGA High-Res Color Graphics File
CEGANTR0	.PPF	EGA High-Res Color Intro Screen
CEGASCEN	.PPF	EGA High-Res Color Scenario Menu Screen
SEGADAT	.PGF	EGA Low-Res Color Graphics File
SEGANTRO	.PPF	EGA Low-Res Color Intro Screen
SEGASCEN	.PPF	EGA Low-Res Color Scenario Menu Screen
CGADAT	.PGF	CGA Graphics File
CGANTRO	.PPF	CGA Intro Screen
CGASCEN	.PPF	CGA Scenario Menu Screen
MONODAT	.PGF	Monochrome Graphics File (for Hercules and EGA Mono)
MONONTRO	.PPF	Monochrome Intro Screen (for Hercules and EGA Mono)
MONOSCEN	.PPF	Monochrome Scenario Menu Screen (for Hercules and EGA Mono)
TDYDAT	.PGF	Tandy Color Graphics File
TDYNTR0	.PPF	Tandy Color Intro Screen
TDYSCEN	.PPF	Tandy Color Scenario Menu Screen

The 3 1/2" disk contains all the files on both the above disks.

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.).

ZONES

Your city is divided into three primary zones: residential, commercial and industrial. 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."

POPULATION – RESIDENTIAL

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.

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.

EXTERNAL MARKET – INDUSTRIAL

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—there 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).

INTERNAL MARKET – COMMERCIAL

The internal market is completely influenced by the conditions within your city. Internal production, created in the commercial zones, represents all the things which 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.

TAX RATE

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."

BUDGETING

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.

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.

POWER

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

The entire power grid of your city is periodically checked in the simulation 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, tornadoes, 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 – 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

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

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.

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

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 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.

CONSTRAINTS ON CITY FORM

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.

ELEMENTS OF URBAN STRUCTURE

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 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.

EVOLUTION OF URBAN FORM

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 temple 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 which 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 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.

TRANSITION TO THE INDUSTRIAL CITY

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 which 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 which 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, which 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 which 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 which can be sold to an external purchaser, bringing in money which 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

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 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 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 have 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.

CONCLUSION: GOOD CITY FORM

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 the goals with one another. 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.

TROUBLESHOOTING

If you are having problems running SimCity, try the following:

1. You must run the INSTALL program—even to run SimCity from a floppy disk. See the User Documentation for instructions.
2. For 5 1/4" floppy installation, you must install to a new, blank, formatted floppy disk. You cannot install to the original disks. You can install the 3 1/2" disk to itself. When installing to a floppy, and you are asked for the sub-directory, don't put one in. Just install to the root directory: A:\ or B:\.
3. When running SimCity from a hard disk, make sure that you run it from the SimCity sub-directory, or it will not be able to load the graphics sets. To get to the SimCity sub-directory, type CDSIMCITY, then hit RETURN, then start the game.
4. Remove ALL memory-resident programs! This includes SideKick, PC Tools, Norton Commander, graphics devices that put your video ROM into RAM, and all utilities and shells—even Expanded Memory Managers. The easiest way to boot a totally clean system is to boot from a floppy-disk copy of your original DOS disk. You can also set up batch files to reconfigure your AUTOEXEC.BAT and CONFIG.SYS files. Consult your DOS manual or local hacker for help.
5. If SimCity runs, but the animated characters (ship, monster, airplane, etc.) are invisible, then you have something running memory-resident. Remove it.
6. If you are missing the smaller character set, or are having trouble running on a laptop, try running the DOS program GRAFTABL.
7. The SimCity graphics set for CGA is in the hi-res monochrome mode. It does not show in color.
8. Try turning off the sound. Try taking your machine out of "turbo" mode.
9. The copy protection can ask for the NAME or the POPULATION. Be sure you are entering the right information.
10. If you have done all of the above, and it still won't run, and you have a math coprocessor, try disabling the coprocessor by typing SET NO87 = DISABLE on the DOS command line, then hitting RETURN before running SimCity.
11. SimCity only supports IBM ProPrinter, Epson MX, RX, FX printers and compatibles.
12. If you are running DOS 4.0 or 4.01, make sure you have the shell turned off.
13. If all else fails, read the manual. If that fails, call us for technical support. When you call, please have the following information ready:
 - Make and model of your computer
 - DOS version
 - ROM BIOS make and version
 - A printout of your AUTOEXEC.BAT and CONFIG.SYS files
 - Make and model of your graphics card
 - How much RAM you have

If possible, be at your computer when you call, and have your SimCity manual and box handy.

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