SimCity Best Map FAQ

by WebGraphics   Updated to v1.03 on Oct 6, 2007

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       SIM CITY BEST MAP FAQ v 1.03 -by WebGraphics

Sim City, the Maxis game released for the Super Nintendo in 1991.

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To ask permission, or to request a copy of all 2000 Sim City maps, email me:

webgraphics2004 at yahoo dot ca

       Questions and Answers:

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Q: What is this!? [W01]

A: This document is an experiment, in FAQ format.

   It has a hypothesis, a procedure, a discussion and a conclusion.

   The hypothesis: That map #061 is the best map for Sim City.

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Q: Why did you create this FAQ? [W02]

A: I was skeptical of the claim that other FAQ writers were making that map
   #061 is the best map. They did not provide any proof, and I wanted to put
   it to the test.

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Q: What are your findings? What is the best map? [W03]

A: I have tested every map in Sim City. The data proves that map #061 is indeed
   the best one. The top 5 maps, in order, are:

   1. #061 (main series)        85.50% land
   2. #137 (main series)        84.80% land
   3. #728 (main series)        84.75% land
   4. #112 (alternate series)   84.45% land
   5. #492 (alternate series)   84.14% land

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Q: What is the best island map? [W04]

A: Considering just the island maps, I will say that map #108 from the
   alternate series is the best one. The top 5 island maps, in order, are:

   1. #108 (alternate series)   46.51% land
   2. #986 (alternate series)   46.37% land
   3. #371 (alternate series)   46.13% land
   4. #155 (main series)        45.93% land
   5. #151 (alternate series)   45.68% land

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Q: What is the worst map? [W05]

A: That is difficult to say.

   The worst *island* map is map #546 from the alternate series, with
   39.67% land.

   However, map #855 from the main series, which is not an island map, has a
   large concentration of water in the center of the map with 55.49% land.

   They are both very bad maps.
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Q: How many maps are there? [H01]

A: There are 2000 maps in Sim City, 681 of which are island maps.

   The first, main series of maps (000-999) is accessed through the main menu
   using the "start new city" option. From there you enter the "map select"
   screen where you enter a 3 digit number to get the map you want.

   Unfortunately, the load time of each map is quite long. Each new map takes
   around 14 seconds to load. With 1000 maps to choose from you can see how
   checking each individual map in this series would be very time consuming.

   In fact, it would take at least 4 hours to do this if you spent less than
   one second looking at each map!

   The second, alternate series of maps is accessed through the following
   trick:

   1. Select a map as you would normally and start a new game.
   2. Open the "load save" menu from the top row of menu buttons.
   3. Select "go to menu" and do not save.
   4. Go back to the "map select" screen. A second, alternate version of the
      map will now appear.

   As you can see, the alternate series of maps is much more time consuming to
   load than the main series!

   Each of the maps in the main series has an alternate map of the same number.
   That means there are 2000 maps in total.

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Q: If it is so hard to check the maps, then how do you know for sure map #061
   is actually the best one? [H02]

A: After doing a thorough test of all 2000 maps, I determined that #061 is the
   best one. I determined this by measuring the amount of water and coastline
   on each map.

   Map #061 and #728 are tied as having the least amount of water of all 2000
   maps.

   However, the water in map #061 is concentrated into a smaller region than in
   map #728. This means that map #061 is slightly easier to build on since you
   will encounter less coastline.

   The top five maps are all quite good, and it should be possible to achieve
   Megalopolis on each of them:

   1. #061 (main series)        85.50% land
   2. #137 (main series)        84.80% land
   3. #728 (main series)        84.75% land
   4. #112 (alternate series)   84.45% land
   5. #492 (alternate series)   84.14% land

   For info on how to achieve Megalopolis status, please check "Top
   Zoning/Donut Building FAQ" by Saint Cyan at GameFAQs. Using his guide you
   will achieve Megalopolis.
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Q: How the hell did you test each map?

A: Simple version [H03]:

  1. Take screenshots of each of the 2000 maps.
  2. Edit each screenshot so that only water and land is visible (forest and
     coastline bulldozed).
  3. Measure the amount of water, land and coastline in each screenshot.
  4. Sort the data in ascending order by least water.

  Complicated version [H04]:

  1. Take screenshots of each of the 2000 maps.

  Set up some of ZSNES's built in features in combination with an external
  macro program to generate the screenshots automatically.

  From ZSNES (http://www.zsnes.com/)
  -Fast forward, which can speed things up by 30X. Map loading time is less
   than a second at this speed.
  -Key combinations, so that pressing one button does a series of actions in
   the game.
  -Built in screen capture.

  From the macro
  -Automate certain keys in intervals over and over again, so you don't have
   to press them.

  Doing this at 30X speed means you can get all 2000 screenshots in under an
  hour.

  2. Edit each screenshot so that only water and land is visible (forest and
     coastline bulldozed).

  You now have 2000 screenshots. However, there is some extra data in each
  screenshot that is problematic. The raw screenshots cannot be processed
  systematically. The trees in the map and the area around the map that is
  part of the user interface must be removed first.

  You do this with a program called The GIMP (http://www.gimp.org/). This is a
  free image editor that has some handy command line tools for editing
  thousands of images at a time. You will need to use the following batch
  commands:

  (gimp-context-set-background '(176 168 136))       <-- Set background color to
                                                         cream
  (gimp-image-crop image 120 100 48 89)              <-- Crop out the user
                                                         interface
  (gimp-by-color-select drawable                     <-- Select all the water
                     '(64 128 128) 0 0 0 0 0)            areas of the map
  (gimp-selection-invert image)                      <-- Invert the selection, so
                                                         everything except the
                                                         water is selected
  (gimp-edit-bucket-fill drawable 1 0 100 0 0 0 0)   <-- Fill selection with the
                                                         background (set to
                                                         cream earlier)
  (gimp-image-convert-indexed image 0 0 2 0 0 "")    <-- Change image to indexed
```

This is probably confusing, but I am too lazy to give a detailed explanation
of how these commands work. Documentation is available with The GIMP that
goes into considerable detail.

By using these commands in a batch file you can edit all 2000 screenshots in
a few minutes with just one keystroke.

The resulting screenshots are cropped to the map area only and are indexed
to two colors. Water appears as blue and land appears as cream.

3. Measure the amount of water, land and coastline in each screenshot.

To do this you will use another free program used mostly by scientists to
analyze images. It's called ImageJ (http://rsb.info.nih.gov/ij/).

ImageJ can measure the number of pixels for each color for each image, and
output this data to a text file. Since blue means water you can use this
data to determine the percentage of water on each map. The built in macro
capability of ImageJ can process thousands of images in less than a minute
and is easy to set up. Once you have the data, export it to a text file.

4. Sort the data in ascending order by least water.

Very simple, import the text file from ImageJ into a spreadsheet and sort
it.

Q: How much error is there in the measurements using screenshots? [H05]

A: The error is not large and is probably within +/- 0.3%. To be safe I will
say the error is +/- 1%, which still allows me to sort the maps according
to total land or water with accuracy.

The reason for the error is the screenshots were slightly blurred before
processing. The reason I did this is they include some blue "water-like"
colors within the forest areas that are not actually water. As you recall it
was necessary to remove the forest areas from the screenshots in order to
process them. But since the forests contained some blue, this was being
considered as water and skewed the results.

The solution was to blur the images slightly so that any blue areas within
forest would essentially disappear. This also changed the coastline, which
is why there is a slight error.

Q: Can I see some actual data? [D01]

A: Sure.

Table 1: Top 50 maps sorted by land percentage [T01]

Rank	Map ID	Land	Coastline	Land - Coastline (est.)
1	#061_MAIN	87.7%	3.2%	84.5%
2	#137_MAIN	87.1%	3.2%	83.9%
3	#728_MAIN	87.7%	4.5%	83.2%

Rank	Map ID			
4	#112_ALT	87.0%	3.9%	83.1%
5	#492_ALT	86.9%	4.0%	82.9%
6	#582_ALT	87.1%	4.7%	82.4%
7	#849_MAIN	86.6%	4.2%	82.4%
8	#630_MAIN	86.5%	4.3%	82.2%
9	#203_ALT	85.6%	3.9%	81.7%
10	#367_ALT	85.7%	4.0%	81.7%
11	#737_MAIN	85.0%	3.5%	81.5%
12	#753_MAIN	85.0%	3.6%	81.4%
13	#670_ALT	85.6%	4.3%	81.3%
14	#356_ALT	86.1%	4.8%	81.3%
15	#885_ALT	85.2%	3.9%	81.3%
16	#031_MAIN	86.1%	4.9%	81.2%
17	#906_ALT	85.1%	3.9%	81.2%
18	#163_ALT	85.5%	4.3%	81.2%
19	#464_MAIN	84.6%	3.6%	81.0%
20	#921_MAIN	84.9%	4.0%	80.9%
21	#673_ALT	84.6%	3.7%	80.9%
22	#152_ALT	84.9%	4.0%	80.9%
23	#714_MAIN	85.4%	4.6%	80.8%
24	#498_MAIN	84.9%	4.3%	80.6%
25	#201_MAIN	85.6%	5.0%	80.6%
26	#799_MAIN	84.6%	4.2%	80.4%
27	#000_ALT	84.8%	4.4%	80.4%
28	#780_ALT	84.6%	4.3%	80.3%
29	#523_MAIN	84.8%	4.6%	80.2%
30	#098_ALT	84.2%	4.0%	80.2%
31	#555_ALT	84.1%	4.0%	80.1%
32	#589_ALT	85.1%	5.1%	80.0%
33	#794_ALT	84.7%	4.8%	79.9%
34	#983_MAIN	84.4%	4.5%	79.9%
35	#641_MAIN	83.6%	3.8%	79.8%
36	#388_ALT	84.6%	4.8%	79.8%
37	#438_ALT	83.9%	4.1%	79.8%
38	#111_MAIN	84.9%	5.2%	79.7%
39	#384_ALT	84.5%	4.8%	79.7%
40	#150_ALT	84.2%	4.5%	79.7%
41	#505_MAIN	83.9%	4.2%	79.7%
42	#819_MAIN	84.5%	4.9%	79.6%
43	#949_ALT	84.6%	5.0%	79.6%
44	#010_MAIN	84.5%	5.0%	79.5%
45	#671_ALT	83.9%	4.4%	79.5%
46	#402_MAIN	83.8%	4.3%	79.5%
47	#620_MAIN	84.1%	4.7%	79.4%
48	#029_MAIN	84.0%	4.6%	79.4%
49	#425_ALT	83.5%	4.1%	79.4%
50	#183_MAIN	83.5%	4.1%	79.4%

Table 2: Top 50 island maps sorted by land percentage [T02]

Rank	Map ID	Land	Coastline	Land - Coastline (est.)
1	#108_ALT	51.0%	6.7%	44.3%
2	#986_ALT	50.5%	6.3%	44.2%
3	#371_ALT	50.6%	6.7%	43.9%
4	#155_MAIN	50.0%	6.1%	43.9%
5	#151_ALT	49.9%	6.3%	43.6%
6	#756_MAIN	50.1%	6.5%	43.6%
7	#756_ALT	50.1%	6.6%	43.5%
8	#386_ALT	50.3%	6.9%	43.4%

```
9        #729_ALT        49.8%          6.5%           43.3%
10       #136_ALT        49.9%          6.6%           43.3%
11       #712_MAIN       50.4%          7.1%           43.3%
12       #386_MAIN       50.0%          6.8%           43.2%
13       #712_ALT        50.3%          7.1%           43.2%
14       #249_ALT        49.6%          6.5%           43.1%
15       #141_MAIN       49.4%          6.3%           43.1%
16       #205_ALT        49.7%          6.6%           43.1%
17       #249_MAIN       49.6%          6.5%           43.1%
18       #729_MAIN       49.7%          6.6%           43.1%
19       #653_MAIN       49.4%          6.4%           43.0%
20       #977_ALT        49.9%          6.9%           43.0%
21       #977_MAIN       49.9%          6.9%           43.0%
22       #652_ALT        49.5%          6.6%           42.9%
23       #141_ALT        49.0%          6.1%           42.9%
24       #654_ALT        49.6%          6.7%           42.9%
25       #682_MAIN       49.3%          6.4%           42.9%
26       #142_ALT        49.1%          6.3%           42.8%
27       #722_ALT        48.6%          5.8%           42.8%
28       #586_ALT        49.8%          7.0%           42.8%
29       #846_MAIN       49.7%          6.9%           42.8%
30       #690_ALT        49.8%          7.0%           42.8%
31       #328_ALT        49.8%          7.1%           42.7%
32       #442_MAIN       50.0%          7.3%           42.7%
33       #521_ALT        49.8%          7.1%           42.7%
34       #449_ALT        49.7%          7.1%           42.6%
35       #895_ALT        49.6%          7.0%           42.6%
36       #449_MAIN       49.7%          7.1%           42.6%
37       #273_ALT        49.8%          7.2%           42.6%
38       #577_ALT        50.1%          7.6%           42.5%
39       #930_MAIN       48.6%          6.1%           42.5%
40       #690_MAIN       49.2%          6.7%           42.5%
41       #226_ALT        49.5%          7.1%           42.4%
42       #084_ALT        48.6%          6.2%           42.4%
43       #302_MAIN       48.3%          5.9%           42.4%
44       #898_MAIN       49.1%          6.7%           42.4%
45       #917_MAIN       49.4%          7.0%           42.4%
46       #820_MAIN       49.4%          7.0%           42.4%
47       #772_MAIN       49.3%          6.9%           42.4%
48       #129_MAIN       49.6%          7.2%           42.4%
49       #933_ALT        49.1%          6.8%           42.3%
50       #090_ALT        49.1%          6.8%           42.3%
```

Table 3: Top 5 maps with additional data from the Sim City interface [T03]

Map ID	Land Area [1]	Water Area [1]	Water [1]	Water[2]
#061_MAIN	10514	1486	12.38%	12.3%
#137_MAIN	10423	1577	13.14%	12.9%
#728_MAIN	10514	1486	12.38%	12.3%
#112_ALT	10435	1565	13.04%	13.0%
#492_ALT	10424	1576	13.13%	13.1%

[1] This data is from Sim City itself and is 100% accurate.
[2] This data is from the screenshots, based on the color of the map.

Q: You list the total water in map #061 as 1486, but Sim City says the total

water is 1740. Why are all your water values too low? [D02]

A: There is a good reason for this.

   The Sim City data for water includes coastline in its calculation of total
   water on the map. This is misleading because unlike water, you can actually
   build on coastline. Coastline is just like regular land and should be
   included as land, not water.

   Once you build something on coastline it is no longer considered to be water
   by Sim City, and is moved into the total land calculation.

   The values I gave are the true values that do not include coastline in the
   calculation of total water.

Q: Okay, but map #061 and #728 have the same amount of water! How do you know
   which one is better? [D03]

A: Map #061 is slightly better.

   To explain this we review the role water plays in Sim City.

   Water is basically an obstacle you have to build around. This means that one
   big lake is better than many small rivers, even if the rivers take up the
   exact same area as the lake. The lake has less coastline and is therefore
   easier to build around.

   If two maps have the same amount of water, the one with the least amount of
   coastline is the better map.

   Just to be clear, coastline is defined as an area of land directly touching
   the water.

   There is no simple way to systematically measure coastline, but it can be
   done fairly easily from within Sim City itself. As I explained earlier, when
   Sim City calculates the total water for a map it includes coastline as
   water, despite the fact that coastline is no different than regular land.
   However, if you build something on coastline, or simply bulldoze it, it is
   no longer considered as water and is removed from the calculation.

   Therefore coastline is equal to the initial amount of water reported by Sim
   City minus the amount of water reported by Sim City after you bulldoze all
   areas of coastline on the map.

Table 4: Top 5 maps with coastline data [T04]

Map ID	Land [1]	Coastline [1]	Land - Coastline
#061_MAIN	10514	254	85.50%
#137_MAIN	10423	247	84.80%
#728_MAIN	10514	344	84.75%
#112_ALT	10435	301	84.45%
#492_ALT	10424	327	84.14%

[1] This data is from Sim City itself and is 100% accurate.

   There you have it, map #061 is clearly the best map of all 2000 maps of Sim
   City!

Q: What is the second best map? [D04]

A: The second best map is map #137 from the main series.

   As stated previously, both the total amount of land and the total amount of
   coastline must be considered when discussing the quality of a Sim City map.

   When bodies of water on a map are concentrated, there is less coastline
   and less obstacles to build around. When bodies of water are spread
   out, in the form of rivers and/or small lakes, there is more coastline
   and more obstacles to build around.

   Each map is 120x100 pixels, which gives a total area of 12000 pixels.

   Look back at Table 4 [T04], column "Land - Coastline"

   This column is equal to the total amount of land on the map minus the total
   amount of coastline on the map, divided by the area of the map. We know the
   area of the map is 12000 pixels, so using data from Table 4 [T04] the
   "Land - Coastline" for map #061 is:

   (Land - Coastline) / Total_Area = (10514 - 254) / 120000 = 85.50%

   This value reflects the total amount of land available and how much
   of that land is bordering water. The more coastline there is the lower the
   value.

   Using this system I will say that map 137 from the main series is the second
   best map.

   The top 5 maps, in order, are:

   1. #061 (main series)   85.50% land
   2. #137 (main series)   84.80% land
   3. #728 (main series)   84.75% land
   4. #112 (alternate series)   84.45% land
   5. #492 (alternate series)   84.14% land

Q: Can I see the actual macros you used? [A01]

A: I can show you the batch files I used with The GIMP and the macro I used
   with ImageJ. The key combination file for ZSNES is a binary file so I
   can't reproduce it here.

   The GIMP Batch Files

   batch-simplify: Converts raw screenshots into simple 2-bit images.

```
(define (batch-simplify pattern)
(let* ((filelist (cadr (file-glob pattern 1))))
  (while (not (null? filelist))
        (let* ((filename (car filelist))
                (image (car (gimp-file-load RUN-NONINTERACTIVE
                                            filename filename)))
               (drawable (car (gimp-image-get-active-layer image))))
```

```
                (gimp-context-set-background '(176 168 136))
                (gimp-context-set-foreground '(64 128 128))
                (gimp-image-crop image 120 100 48 89)
                (plug-in-gauss RUN-NONINTERACTIVE image drawable 1.0 1.0 0)
                (gimp-by-color-select drawable '(64 128 128) 0 0 0 0 0 0)
                (gimp-selection-grow image 1)
                (gimp-edit-bucket-fill drawable 0 0 100 0 0 0 0)
                (gimp-selection-invert image)
                (gimp-edit-bucket-fill drawable 1 0 100 0 0 0 0)
                (gimp-selection-none image)
                (gimp-image-convert-indexed image 0 0 2 0 0 "")
                (gimp-file-save RUN-NONINTERACTIVE
                                image drawable filename filename)
                (gimp-image-delete image))
            (set! filelist (cdr filelist)))))


 island-detect: Detects if an image is an island or regular map.

(define (island-detect pattern)
(let* ((filelist (cadr (file-glob pattern 1))))
  (while (not (null? filelist))
          (let* ((filename (car filelist))
                 (image (car (gimp-file-load RUN-NONINTERACTIVE
                                             filename filename)))
                 (drawable (car (gimp-image-get-active-layer image))))
            (gimp-context-set-foreground '(64 128 128))
            (gimp-selection-all image)
            (gimp-selection-shrink image 1)
            (gimp-edit-bucket-fill drawable 0 0 100 0 0 0 0)
            (gimp-selection-none image)
            (gimp-file-save RUN-NONINTERACTIVE
                            image drawable filename filename)
            (gimp-image-delete image))
          (set! filelist (cdr filelist)))))


 highlight-coastline: Highlights coastline areas for coastline estimation.

(define (highlight-coastline pattern)
(let* ((filelist (cadr (file-glob pattern 1))))
  (while (not (null? filelist))
          (let* ((filename (car filelist))
                 (image (car (gimp-file-load RUN-NONINTERACTIVE
                                             filename filename)))
                 (drawable (car (gimp-image-get-active-layer image))))
            (gimp-image-convert-rgb image)
            (gimp-context-set-background '(64 128 128))
            (gimp-by-color-select drawable '(176 168 136) 0 0 0 0 0 0)
            (gimp-selection-border image 1)
            (gimp-edit-bucket-fill drawable 0 0 100 0 0 0 0)
            (gimp-selection-none image)
            (gimp-image-convert-indexed image 0 0 2 0 0 "")
            (gimp-file-save RUN-NONINTERACTIVE
                            image drawable filename filename)
            (gimp-image-delete image))
          (set! filelist (cdr filelist)))))


  ImageJ Macro File:
```

```
    for (i=0; i<1999; i++) {
      run("Open Next");
      run("Measure");
    }
```

Q: What web sites are authorized to host this document? [A02]

A: GameFAQs --> http://www.gamefaqs.com/
   NeoSeeker --> https://www.neoseeker.com/

   This document cannot be reproduced without my explicit permission.

   To ask permission, or to request a copy of all 2000 Sim City maps, email me:

   webgraphics2004 at yahoo dot ca

Q: I am a sexy lady and am very impressed with this FAQ. Is there any way I
   could hook up with you and have your babies? [A03]

A: Unfortunately I live in Canada, so unless you also live in Canada this is
   probably not possible.

   Document history [A04]

   1.00 -Original version

   1.01 -Changed document width to conform with GameFAQs standard
        -Spelling and layout changes

   1.02 -Added new sections:
            *What is the second best map? [D04]
            *What web sites are authorized to host this document? [A02]
            *Document history [A04]
        -Changed Table 3 [T03] to better show the ranking of the top 5 maps
        -Added additional information to some sections
        -Spelling and layout changes

   1.03 -Added new sections:
            *What is the best island map? [W04]
            *What is the worst map? [W05]
            *Table 2: Top 50 island maps sorted by land percentage [T02]
        -Changed order and some data in all tables to better express data
        -Added additional information to some sections
        -Spelling and layout changes

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