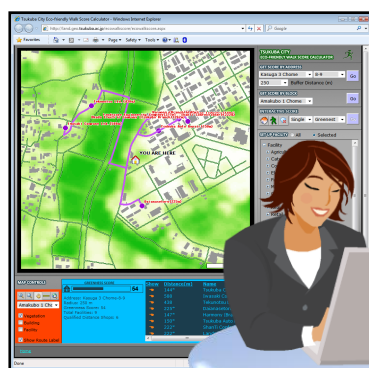




Sis Division of Spatial Information Science
University of Tsukuba



ECO-FRIENDLY WALK SCORE CALCULATOR
Choosing a place to live with GIS



USER GUIDE



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1. INTRODUCTION

Walkability

Walkability is a measure of how friendly an area is to walking. Walkability will answer following questions.

- How many facilities can we go by walking?
- How easy to reach them?
- What kinds of facilities are available in my place?
- More .....



Eco-friendly Walk Score

Eco-friendly Walk Score measures the degree of greenness (green space density) by specified circular distance based on Normalized Different Vegetation Index (NDVI).

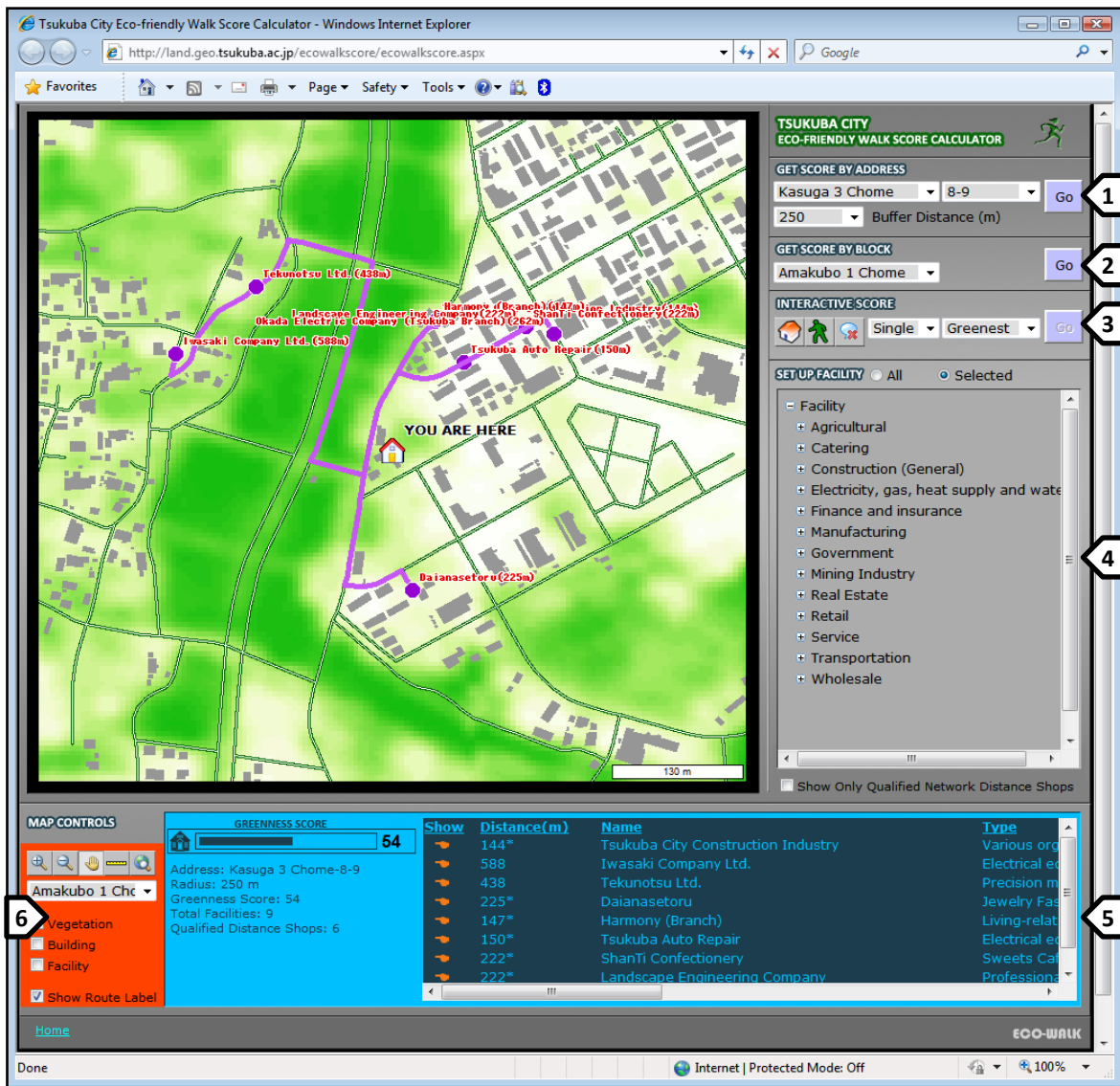
NDVI was calculated from Advanced Land Observation Satellite ALOS AVNIR-2 sensor).

Who can use

- Local residents
- Nature/Green lovers
- Real estate agencies
- Potential home buyers
- City planners
- Any spatial information users in Tsukuba City



2. GRAPHICAL USER INTERFACE



TSUKUBA CITY ECO-FRIENDLY WALK SCORE CALCULATOR

GET SCORE BY ADDRESS
 Kasuga 3 Chome 8-9 Go
 250 Buffer Distance (m)

GET SCORE BY BLOCK
 Amakubo 1 Chome Go

INTERACTIVE SCORE
 Single Greenest Go

SET UP FACILITY All Selected
 Facility
 + Agricultural
 + Catering
 + Construction (General)
 + Electricity, gas, heat supply and water
 + Finance and insurance
 + Manufacturing
 + Government
 + Mining Industry
 + Real Estate
 + Retail
 + Service
 + Transportation
 + Wholesale

MAP CONTROLS
 Amakubo 1 Chc
 Vegetation
 Building
 Facility
 Show Route Label

GREENNESS SCORE
 54
 Address: Kasuga 3 Chome-8-9
 Radius: 250 m
 Greenness Score: 54
 Total Facilities: 9
 Qualified Distance Shops: 6

Show	Distance (m)	Name	Type
144*	144*	Tsukuba City Construction Industry	Various org
588	588	Iwasaki Company Ltd.	Electrical ed
438	438	Tekunotsu Ltd.	Precision m
225*	225*	Daianasetoru	Jewelry Fas
147*	147*	Harmony (Branch)	Living-relat
150*	150*	Tsukuba Auto Repair	Electrical ed
222*	222*	ShanTi Confectionery	Sweets Cal
222*	222*	Landscape Engineering Company	Professions

1: Get score by address
 2: Get score by block
 3: Interactive score
 4: Setup desire facilities
 5: Results display
 6: Map controls

3. MEASUREMENT MODES

3.1. GET SCORE BY ADDRESS

GET SCORE BY ADDRESS

1

Kasuga 3 Chome

8-9

Go

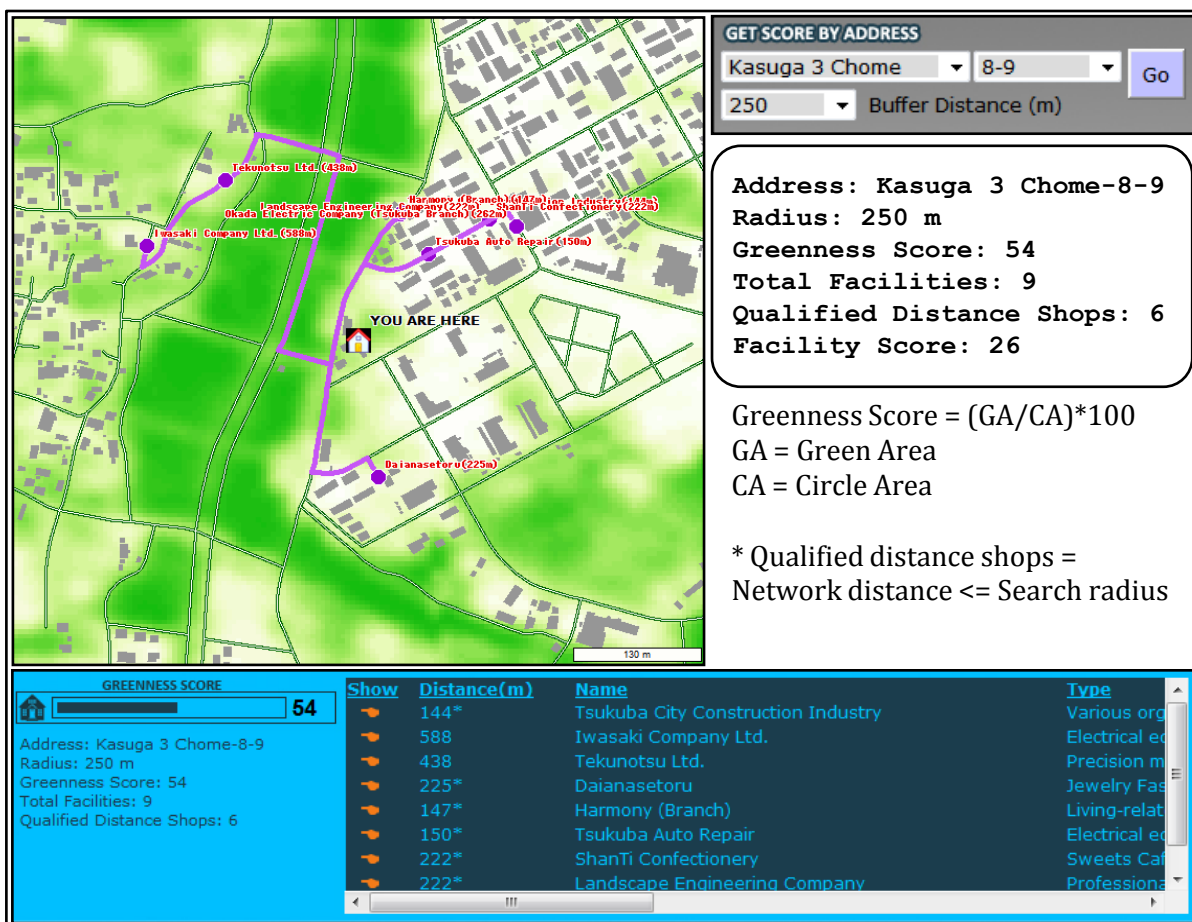
3

2

250

Buffer Distance (m)

- 1 Select Address (e.g. Kasuga 3 Chome 8-9)
- 2 Set search radius (Default is 250m)
- 3 Click Go and get the score.



3. MEASUREMENT MODES

3.2. GET SCORE BY BLOCK

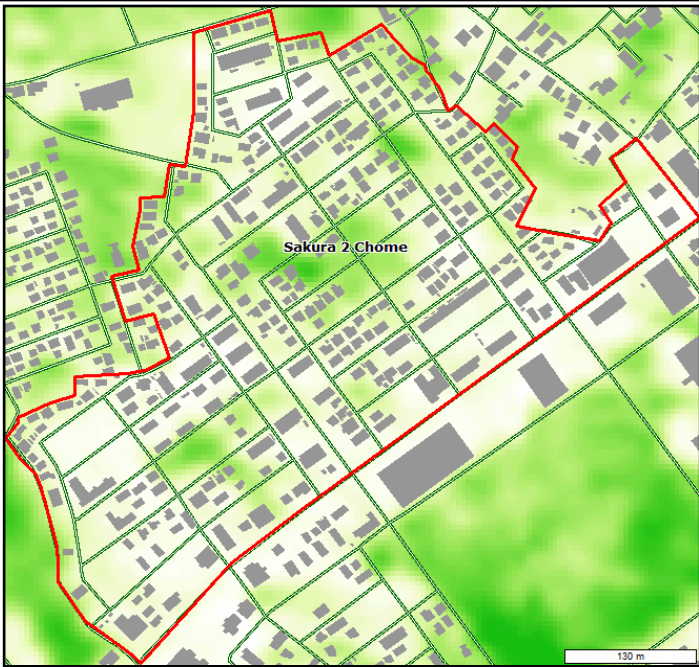
GET SCORE BY BLOCK

1
Sakura 2 Chome ▼

Go

2

- 1 Select Block (e.g. Sakura 2 Chome)
- 2 Click Go and get the score.



GET SCORE BY BLOCK

Sakura 2 Chome ▼ Go

Search Block: Sakura 2 Chome
 Search Area: 19.26 Ha
 Greenness Score: 10
 No. of Facilities: 35

Greenness Score = (GA / BA) * 100

GA = Green Area
 BA = Block Area

GREENNESS SCORE 10

Search Block: Sakura 2 Chome
 Search Area: 19.26 Ha
 Greenness Score: 10
 No. of Facilities: 35

Show	Distance(m)	Name	Type
▶	.....	Isebudejitarusute-shon	The printing in
▶	.....	Issei commercial firm Ltd. / Tsukuba Branch	Business-relat
▶	.....	te. to. te	Sweets Cafe
▶	.....	Ichiyasu Confectionary	Noodles
▶	.....	COCO Restaurant	Restaurant
▶	.....	Tsukuba business college special school	Sports industr
▶	.....	Salon de beaute	Professional s
▶	.....	Salon de Abelia	Living-related



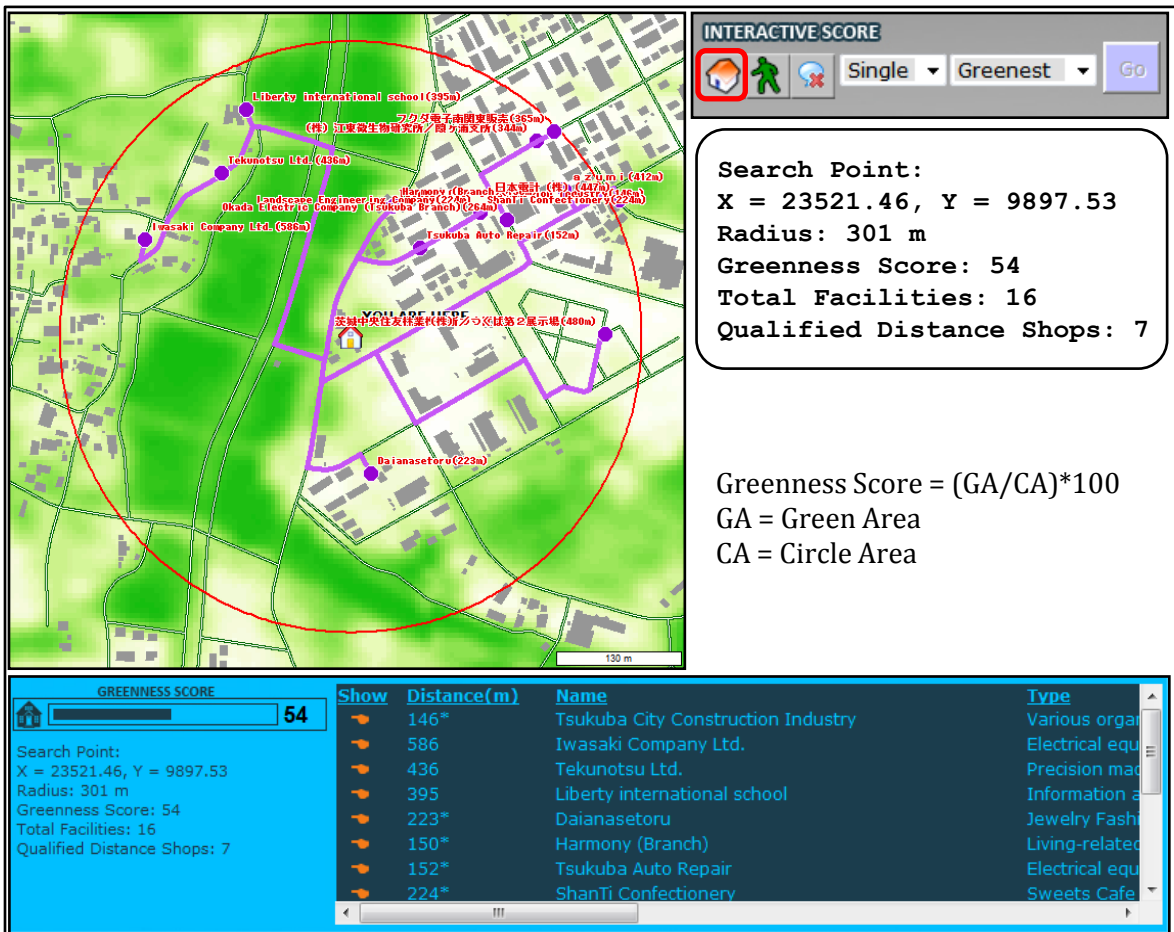
3. MEASUREMENT MODES

3.3. INTERACTIVE SCORE

Get score by user defined place



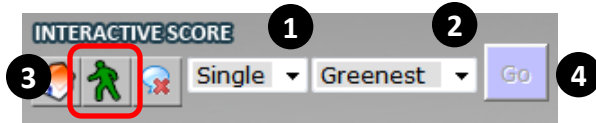
- 1 Click "Home" icon and draw a circle on a map
(Click on a map and hold the mouse button to draw a circle)



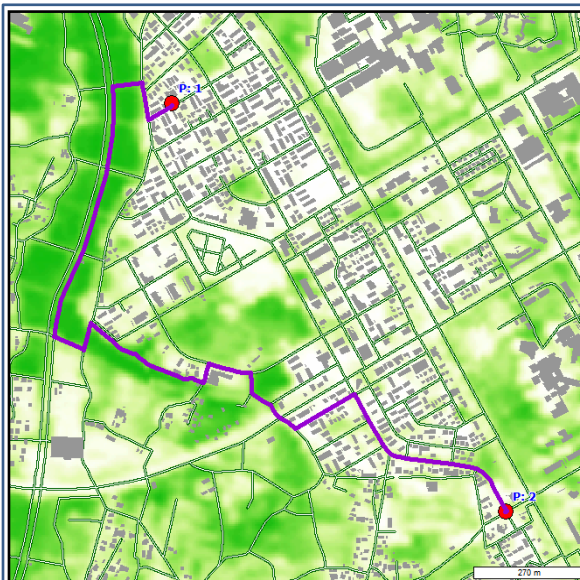
3. MEASUREMENT MODES

3.3. INTERACTIVE SCORE

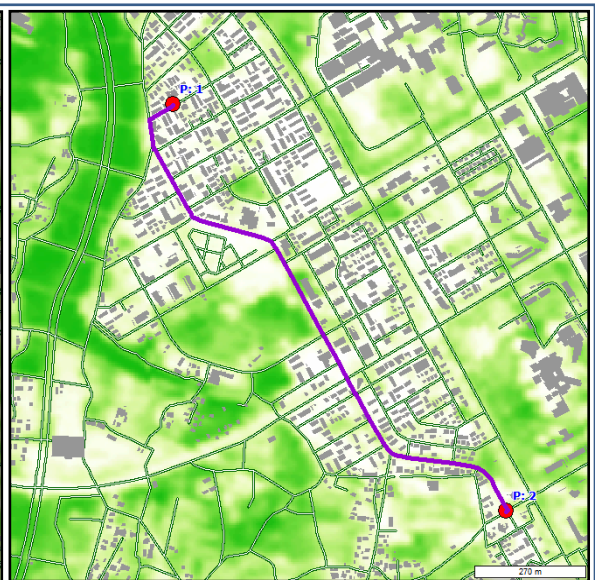
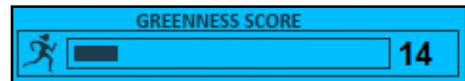
Plan your walking route either shortest or greenest path



- ❶ Select route type (either Single or Loop)
(Loop = Return to the start point)
- ❷ Select path (either Greenest or Shortest)
- ❸ Click “Walk” icon and define series of points
(require minimum two points)
- ❹ Click “Go” to get the Greenness Score



Route Information: Greenest
P1-P2: 2.29Km (G.Score: 57)
Total Distance: 2.29Km
Total Average Green Score: 57



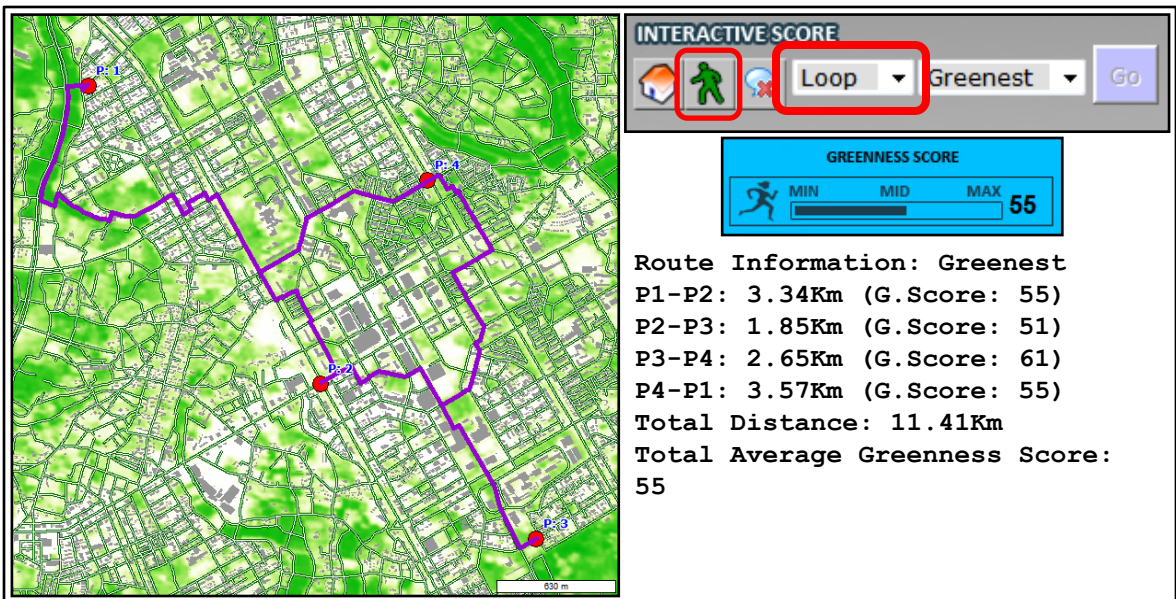
Route Information: Shortest
P1-P2: 1.44Km (G.Score: 14)
Total Distance: 1.44Km
Total Average Green Score: 14

3. MEASUREMENT MODES

3.3. INTERACTIVE SCORE

Multiple points and loop operation.

Sometimes you may need to walk multiple places.
 (e.g. home to library, library to park, etc.)



Reset the function.



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