Smart Growth INDEX® 2.0

A Sketch Tool for Community Planning

What Is It?

Smart Growth INDEX is a GIS sketch tool for comparing alternative land-use and transportation scenarios, and evaluating their outcomes using indicators of community and environmental performance. Sketches can be prepared and analyzed for:

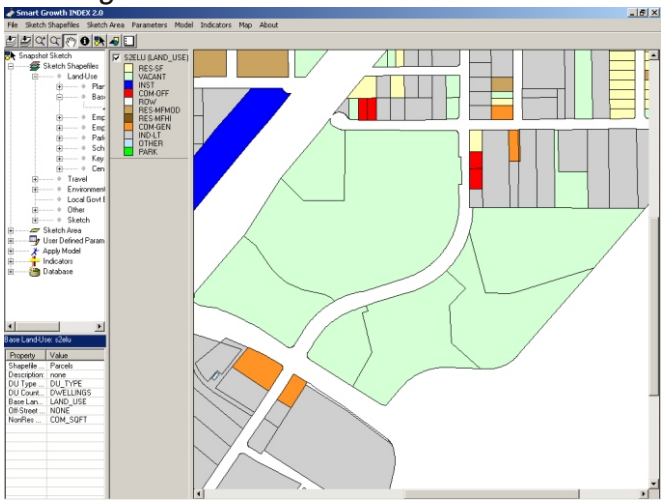
- Existing baseline conditions.
- Regional growth management plans.
- Land-use and transportation plans.
- Neighborhood plans.
- Land development proposals.
- Environmental impact reports.
- Special projects, e.g. brownfield redevelopment.

Smart Growth INDEX 2.0 executes static, or single point in time, analyses that can compare multiple scenarios for the current year or a future planning horizon. The geographic scope of sketches can range from multi-county regions down to single neighborhoods, and users may choose from a menu of 56 indicators for evaluating sketches.

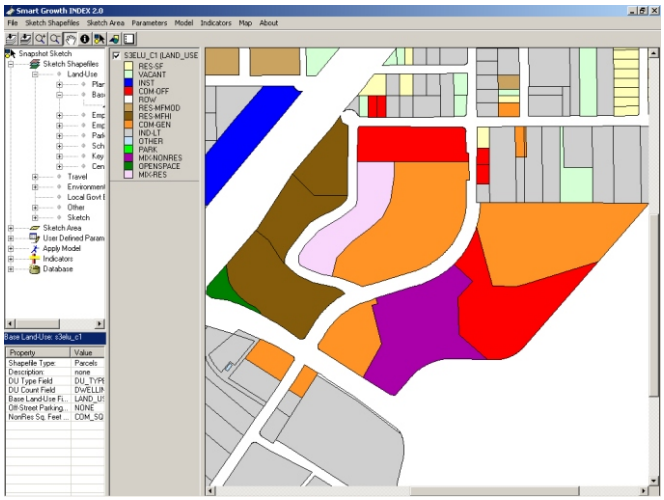
How Does It Work?

1. Define a sketch area that encompasses the analysis site and its surrounding vicinity.
2. From the indicator menu, select those indicators that are relevant to the issues being analyzed.
3. Assemble GIS data to support calculation of selected indicators.
4. Prepare and evaluate a baseline scenario that alternatives can be compared to.
5. Prepare and evaluate as many alternative scenarios as desired.
6. Compare and rank scenario choices using stakeholder weighting of indicator results.

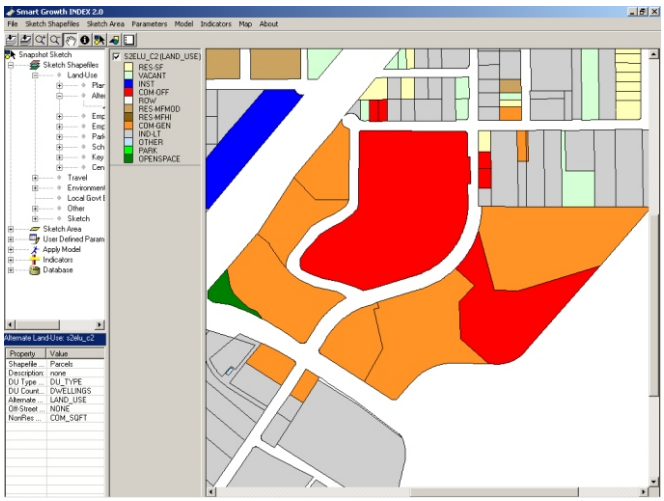
Existing Conditions Base Case



Alternative Plan A



Alternative Plan B



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Inputs

Smart Growth INDEX requires GIS coverages in ESRI shapefile format for:

- Land-use.
- Housing and employment.
- Street centerlines.
- Transit routes.
- Other community features.

In addition to GIS data, users also define various demographic, transportation, resource consumption, and emission parameters for each sketch.

Outputs

Smart Growth INDEX evaluates sketches with a set of 56 indicators that measure such outcomes as land consumption, housing and employment density, proximity to transit, and pollution emissions. Indicator results are expressed both numerically and spatially, so users obtain both tables and maps showing the performance of each sketch.

User Requirements

Once installed, Smart Growth INDEX is suitable for non-technical users with moderate computer skills. Installation and maintenance requires an advanced steward with GIS modeling experience. Smart Growth INDEX requires a 300 MHz or higher PC with 128 MB of RAM.

What Are Its Limitations?

As a sketch tool, Smart Growth INDEX simulates land-use/transportation scenarios in a simplified manner, and should not be solely relied upon for evaluating major investments or documenting regulatory compliance.

More Information

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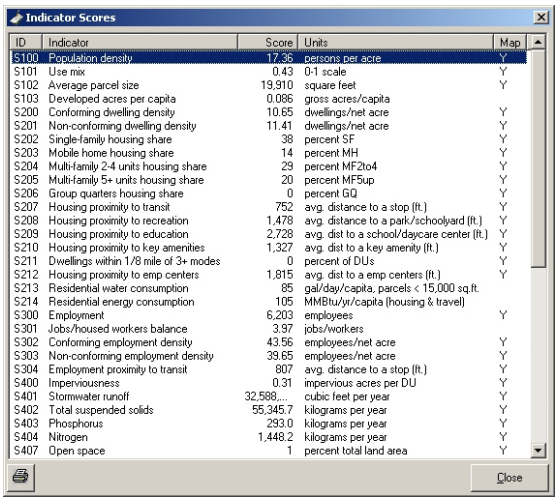
- Eliot Allen, Criterion Planners/Engineers, 503/224-8606 or eliot@crit.com. Also www.crit.com.

Indicator Scores

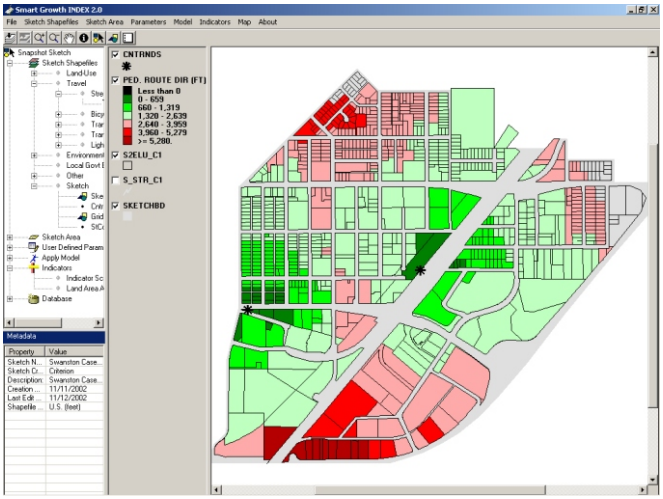


Indicator Scores

ID	Indicator	Score	Units	Map
S100	Population density	17.36	persons per acre	Y
S101	Use mix	0.43	0-1 scale	Y
S102	Average parcel size	19,910	square feet	Y
S103	Developed acres per capita	0.086	gross acres/capita	
S200	Conforming dwelling density	10.65	dwellings/net acre	Y
S201	Non-conforming dwelling density	11.41	dwellings/net acre	Y
S202	Single-family housing share	38	percent SF	Y
S203	Mobile home housing share	14	percent MH	Y
S204	Multi-family 2-4 units housing share	29	percent MF2to4	Y
S205	Multi-family 5+ units housing share	20	percent MF5up	Y
S206	Group quarters housing share	0	percent GQ	Y
S207	Housing proximity to transit	752	avg. distance to a stop (ft.)	Y
S208	Housing proximity to recreation	1,478	avg. distance to a park/schoolyard (ft.)	Y
S209	Housing proximity to education	2,728	avg. dist to a school/daycare center (ft.)	Y
S210	Housing proximity to key amenities	1,327	avg. dist to a key amenity (ft.)	Y
S211	Dwellings within 1/8 mile of 3+ modes	0	percent of DUs	Y
S212	Housing proximity to emp centers	1,815	avg. dist to a emp centers (ft.)	Y
S213	Residential water consumption	85	gal/day/capita, parcels < 15,000 sq.ft.	
S214	Residential energy consumption	105	MMBtu/yr/capita (housing & travel)	
S300	Employment	6,203	employees	Y
S301	Jobs/housed workers balance	3.97	jobs/workers	
S302	Conforming employment density	43.56	employees/net acre	Y
S303	Non-conforming employment density	39.65	employees/net acre	Y
S304	Employment proximity to transit	807	avg. distance to a stop (ft.)	Y
S400	Imperviousness	0.31	impervious acres per DU	Y
S401	Stormwater runoff	32,588,...	cubic feet per year	Y
S402	Total suspended solids	55,345.7	kilograms per year	Y
S403	Phosphorus	293.0	kilograms per year	Y
S404	Nitrogen	1,448.2	kilograms per year	Y
S407	Open space	1	percent total land area	Y

Close

Indicator Mapping



Stakeholder Weighted Ranking of Alternatives

Developed for the U.S. Environmental Protection Agency by

CRITERION PLANNERS ENGINEERS Portland, OR

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