Model Inventory – Documentation

Model name	Organization/Company/Institute	Links	Comments WSP
CATLAS	Alex Anas	None	Out-dated, insufficient documentation
CLUE-S	Institute for Environmental Studies (IVL), University of Amsterdam	www.cluemodel.nl. www.ivm.vu.nl	Model for regional analysis of land use change. Several applications.
ICLUS	United States Environmental Protection Agency (EPA)	http://www.epa.gov/global-adaptation/iclus/	Generates scenarios of housing density changes. Several applications. Model and test data are available free of charge.
ILUMASS	S&W (Spiekermann and Wegener) Funded by the German Federal Ministry for Education and Research.	http://www.spiekermann-wegener.de/index_e.htm	Integrated and microscopic simulation model of land use, transport and environmental impact in urban regions.
I-PLACE3S (**PLA**nning for **C**ommunity **E**nergy, **E**conomic and **E**nvironmental **S**ustainability)	The original PLACE3S software application was developed in the public domain by Parsons Brinckerhoff, Fregonese Calthorpe Associates, and Space Imaging, in collaboration with ESRI.	http://places.energy.ca.gov http://www.ecointeractive.com (web platform)	A scenario planning tool to visualize scenarios and policy impacts. Several implementations, mainly in the US.
IRPUD	Institute of Spatial Planning, University of Dortmund	http://www.raumplanung.tu-dortmund.de/irpud/en/home/	Main focus on transportation modelling.
ITLUP	Developed by Prof. Steven H. Put-		Integrated transport and land use model. Sub-models are residential

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	man in the early 1970:s		location model DRUM and the employment model EMPAL. Out dated, insufficient documentation
Land Change Modeller	Clark University, Massachusetts, US	www.clarklabs.org	Land Change Modeler for ArcGIS is a land planning and decision support software extension to ArcGIS. Widely used for the prioritization of conservation and planning efforts, Land Change Modeler allows for rapidly analyze land cover changes, simulate future land change scenarios, model emission scenarios, and model species impacts and biodiversity.
Land Use Scanner	LUMOS in the Netherlands, which is a consortium of partnerships of governmental institutes and universities.	www.lumos.info	A land use model that predicts demand for space. Software is available free of charge from LUMOS.
LEAM (Landuse Evolution and Impact Assessment Model)	University of Illinois at Urbana-Champaign	http://www.leam.illinois.edu/leam	Outlines and approach for understanding the dynamics of urban systems and the potential implications of urban policy decisions. Application has been tested in the Stockholm region at KTH.
LILT (Leeds Integrated Land-use Transport Model)	Transport and Road Research Laboratory	Not found.	Represents the relationships between transport costs and the spatial distributions of population, housing, jobs, employment and shopping. Outdated (1983), insufficient documentation and main focus on transport
LUCI/luci2 (Land Use in Central Indiana Model)	Indiana University-Purdue University Indianapolis	http://luci.urbancenter.iupui.edu/default.asp	Produces different development scenarios reflecting policy choices and alternative assumptions regarding patterns of development that can be considered for the Central Indiana region.

			Software application available free of charge.
LUCIA	Department of Environmental Science, Århus University and Ålborg University, Denmark	Not found.	Demonstrates the potential to explore and test the understanding of land use change relations by applying spatial data of different scales, coupled with socio-economic data. Insufficient documentation and has not been tested. Mainly a transportation model.
LUCIS (Land-Use Conflict Identification Strategy)	GeoPlan Center at the University of Florida	http://www.geoplan.ufl.edu/lucis/lucis.html#origin	Is a goal driven GIS model that produces a spatial representation of probable patterns of future land use divided into several categories. Based on ESRI software. Documentation from at least one case.
LUMP (Land Use Modelling Platform)	Institute for Environment and Sustainability (IES) of the Joint Research Centre (JRC) to support the policy needs of different services of the European Commission	http://ies.jrc.ec.europa.eu/our-activities/scientific-achievements/Land-Use-Modelling-Platform.html	The Land Use Modelling Platform (LUMP) has been developed to support the policy needs of different services of the European Commission, such as exploration of future policies and impact assessments of specific proposals. Based on land-use model CLUE. Overlap. Mainly focus on environmental land use change, not urban.
MEPLAN	Marcial Echenique & Partners Ltd.	Not found.	MEPLAN is a mathematical framework and software package for mod-

	UK		elling the spatial economies of cities or regions.
METRONAMICA	Research Institute for knowledge systems (RIKS)	www.riks.nl or www.metronamica.nl	The model simulates changes in land use caused by human actions and natural processes. Commercial software. Implemented once in the Copenhagen region in Denmark.
MOLAND	Joint Research Centre, European Commission	http://moland.jrc.ec.europa.eu/technical_tools/model/moland_model.htm	Integrated framework to evaluate and propose strategies for the sustainable management of the European territory. A key tool in this framework is the model for urban and regional growth forecast named MOLAND (Monitoring Land Use/Cover Dynamics) model. Based on alternative spatial planning and policy scenarios, the model then predicts the likely future development of land use, for each year usually over the next ten to twenty-five years.
PECAS Model (Production, Exchange and Consumption Allocation System)	University of Calgary (2010)	e.g. http://www.scag.ca.gov/DataAndTools/Pages/DataTools/Modeling.aspx	Forecasts developmental patterns as well as home and business locations, economic interactions and economic performance in the future. Provides a guide to socioeconomic forecasts under constrained conditions (assuming development will happen within the current general plan), and unconstrained condition (assuming development can happen as economically suitable). Provides region-wide impact analysis

			for policy scenarios.
RapidFire and UrbanFootprint	Calthorpe Associates in Berkeley, California	www.calthorpe.com	Commercial software based on open source and publically funded (US). Urban Footprint is a comprehensive data and scenario planning ecosystem designed to break through the technical and financial barriers that typically stand in the way of rigorous scenario development and analysis.
Stuttgart University (No model name)	Stuttgart University	http://www.uni-stuttgart.de/ireus/index.en.html	Seems to be experimental and not fully developed and not implemented
TELUM (Transportation Economic and Land Use Model)	New Jersey's Science & Technology University	www.telus-national.org/index.htm	Mainly focuses on transport modelling. TELUM is a part of a transport modelling system (TELUS). Based on ESRI software products and available for downloading. TELUM is an integrated interactive software package for evaluating the land use impacts of regional transportation improvement projects. The software utilizes sophisticated computer models to produce long term forecasts of spatial patterns of jobs and residences in the planning area. Based on the user's inputs, TELUM uses current and prior residential, employment, and land use data to forecast their future values and locations by employment sector, household income group, and land use type. Land use models such as TELUM allow planners to consider the consequences of a wide range of public policies aimed at creating conditions for sustainable regional

			development.
TRANUS	Developed by Modelistica in Venezuela	http://www.modelistica.com www.tranus.com/tranus-english	TRANUS is an integrated land use and transport modeling package. The system combines a state-of-the-art model of activities location and interaction, land use and the real estate market, with a comprehensive multimodal transport model. Tranus simulates the location of activities in space, land use, the real estate market and the transportation system. It may be applied to urban or regional scales.
ULAM (Urban Land Use Allocation Model)	Developed by Transportation Planning Service, Inc.	www.ulam.org	ULAM is a land use planning package used for a variety of planning applications in addition to the allocation of future growth. ULAM can be used to create and evaluate alternative land use scenarios such as comparing compact development patterns versus urban sprawl patterns. Besides comparing the allocation results the user can compare the transportation impacts of these different scenarios because the model automatically produces files ready for direct input into the travel demand model. Has been implemented mainly in the US but documentation not found.
UPLAN	Information Center for the Environment (ICE), University of California	www.ice.ucdavis.edu/projects/land_use	UPlan is a simple rule based urban growth model intended for regional or county level modeling. The needed space for each land use type is calculated from simple demographics

			and assigned based on the net attractiveness of locations to that land use (based on user input), locations unsuitable for any development and a general plan that determines where specific types of development are permitted. Based on ESRI software and available for download free of charge. Main focus is on natural environment and not built up land.
UrbanSIM	Paul Waddel	www.urbansim.org	UrbanSim is a software-based simulation system for supporting planning and analysis of urban development, incorporating the interactions between land use, transportation, the economy, and the environment. It is intended for use by Metropolitan Planning Organizations (MPOs), cities, counties, non-governmental organizations, researchers and students interested in exploring the effects of infrastructure and policy choices on community outcomes such as motorized and non-motorized accessibility, housing affordability, greenhouse gas emissions, and the protection of open space and environmentally sensitive habitats. UrbanSim was initially designed by Paul Waddell in the mid-1990's. Widely implemented around the world. “Hot” model, contemporary
WhatIF	Developed by What if?, Inc.	www.whatifinc.biz/	GIS-based planning support system

			(PSS) that can be used to explore alternate futures for a community. It can be used to prepare long-term land use, population, housing and employment projections for enumeration districts, political jurisdictions, and user-defined areas such as school districts, and traffic analysis zones. As its name suggests, What if? allows planners, public officials, stake holders, and private citizens to determine determining what would happen if public policy choices are made and assumptions about the future prove to be true. Commercial software based on ESRI software. Demo version available for download. Widely implemented around the world.
Xplorah	Has been developed by H. van Delden, Research Institute for Knowledge Systems, Netherlands	n.a.	Tailor made for Puerto Rico and seems to be a very complex model. The Xplorah Spatial Decision Support System (SDSS) has been developed with the aim to support integrated decision making on the island of Puerto Rico. It allows the user to explore the impact of a wide range of scenarios –consisting of a combination of external factors and policy options– on policy-relevant indicators by simulating future developments in the region over a time span of 20 to 30 years.

IPM (Integrated Planning model)	Developed by WSP Sweden on behalf of Stockholm County Council	http://www.tmr.sll.se/	Model owned by Stockholm County Council. Model can be used with permission. Has been implemented in the Stockholm region, Skåne region and Tripoli Region in Libya. Currently being refined and migrated to an integration with transport model system LuSIM/LuTRANS in software TransCad.