METROPOLITAN
TRANSPORTATION
COMMISSION

Joseph P. Bort MetroCenter
101 Eighth Street
Oakland, CA 94607-4700
TEL 510.817.5700
TDD/TTY 510.817.5769
FAX 510.817.5848
E-MAIL info@mtc.ca.gov
WEB www.mtc.ca.gov

Memorandum

TO: Administrative Committee DATE: November 3, 2010

FR: Executive Director W. I. 1121

RE: Contract: UrbanSimVisualization Application for Sustainable Communities Strategy/Regional Transportation Plan: The Regents of the University of California

MTC staff requests the Committee's approval to negotiate and enter into a sole source contract with The Regents of the University of California to provide an open source software system for visualizing alternative land use and transportation scenarios for the nine-county Bay Area region. This software system will support public engagement in the development of the Sustainable Communities Strategy/ Regional Transportation Plan (SCS/RTP). Software development for the visualization application, staff training, and operational support will occur over a sixteen month period starting in November 2010 and concluding in Spring 2012.

Background
Senate Bill 375 requires that MTC and ABAG hold workshops throughout the region to provide the public with information and tools necessary to provide a clear understanding of the issues and policy choices considered during the development of the Sustainable Communities Strategy (SCS). Each workshop, to the extent practicable, must include urban simulation computer modeling to create visual representations of the SCS.

To meet the SB 375 urban simulation and visualization requirements, MTC staff seeks the assistance of Professor Paul Waddell of the University of California to produce an open source visualization tool that integrates MTC and ABAG's land use and transportation models to generate analyses of alternative land use and transportation scenarios, and detailed simulation of resulting development at a parcel level. For each scenario developed by MTC and ABAG, the software will generate detailed parcel and building level outputs consistent with the constraints of the models used by ABAG and MTC, and will generate interactive 3D visualizations at both the regional scale, and more localized, community scale. The 3D visual representations allow local government officials, planning directors, and non-technical stakeholders more easily interpret the nature of the land use and travel outcomes from the models. After the adoption of the SCS, this visualization tool will remain available for use by local governments and SCS implementation.

Professor Waddell is uniquely qualified to provide these services since he is the creator of UrbanSim, specialized urban simulation software, now used by metropolitan planning organizations, other local jurisdictions, regional agencies, and universities and private entities around the world, e.g., Germany; India, Australia, British Columbia, and Japan.

His current research focuses on the assessment of the impacts of land use regulations and transportation investments on outcomes such as spatial patterns of real estate development and prices, travel behavior, emissions, and resource consumption. He is also working on ways to engage public participation in making complex policy choices. Professor Waddell's expertise, extensive research and proven experience in model development and simulation are directly applicable to the task at hand – building practical applications which bridge the gap between integrated land use and transportation modeling and urban visualization. Additionally, Professor Waddell's experience in simplifying large, multi-day run-time integrated models into rapid-response models for live policy testing tools cannot be matched by another consultant. This experience is critical to delivering a complex urban simulation and visualization program.

Professor Waddell will lead this project and collaborate extensively with Purdue University's Professor Daniel Aliaga, who is a leading innovator in the development of computer science techniques to generate realistic urban visualizations. Notably, they recently received a $900,000 grant from the National Science Foundation (NSF) to refine the program's visualization and rapid scenario building capabilities. This is a unique opportunity for MTC and ABAG to leverage agency funding with the NSF grant.

In recognizing the complex and challenging nature of bridging land use and transportation modeling with scenario development and visualization, using UrbanSim with integrated and enhanced visualization tools in the SCS will help MTC and ABAG to engage stakeholders meaningfully. Because of the unique capabilities of the Waddell/Aliaga team, staff recommends the approval of this sole source contract.

Recommendation
Staff recommends that this Committee authorize the Executive Director or his designated representative to negotiate and enter into a contract with The Regents of the University of California in an amount not to exceed $600,000 to deliver the UrbanSim Visualization Application for use in the SCS/RTP.

Steve Heminger

SH:AN
J:\COMMITTE\Administration\2010 by Month\11 Admin November 2010\4g_UniversityofCalifornia_Visualization_Nguyen.doc

REQUEST FOR COMMITTEE APPROVAL

Summary of Proposed Consultant Contract

Work Item No.:	1412
Consultant:	The Regents of the University of California Berkeley, California in association with Purdue University, West Lafayette, Indiana
Work Project Title:	UrbanSim Visualization Application for the Sustainable Communities Strategy/Regional Transportation Plan (SCS/RTP)
Purpose of Project:	Create an open source software system for visualizing alternative land use and transportation scenarios for nine-county Bay Area region.
Brief Scope of Work:	• Create an open source software platform that integrates with existing information and models used by ABAG and MTC • For each scenario developed by MTC and ABAG, generate detailed parcel and building level outputs consistent with the constraints provided by models used by ABAG and MTC • Generate interactive 3D visualizations at both the regional scale and more localized, community scale. • Package software for use by local jurisdictions • Provide staff training and operational support
Project Cost Not to Exceed:	$600,000
Funding Source:	CMAQ
Fiscal Impact:	Funds are included in the FY 2010-11 agency budget.
Motion by Committee:	That the Executive Director or his designee is authorized to negotiate and enter into a contract with University of California to deliver the UrbanSim Visualization Application and the Chief Financial Officer is directed to set aside funds up to $600,000 for such contract.
Administration Committee:	_____ Tom Bates, Chair
Approved:	Date: November 10, 2010