Smart 3D City Web Apps with the ArcGIS API for JavaScript

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Agenda

• Introduction to Smart 3D Cities – Pascal
• 3D JavaScript API Highlights – Pascal
• An Urban Planning Web App – Michael
  - Filtering
  - Edge Rendering
  - “Polygon” Drawing Tool
• Conclusion & Outlook - Michael
Smart 3D Cities
Motivation & Application
What is a Smart City?

**Terminology**

Due to the breadth of technologies that have been implemented under the smart city label, it is difficult to distill a precise definition of a smart city. Deakin and Al Weer 

1. The application of a wide range of electronic and digital technologies to communities and cities
2. The use of ICT to transform life and working environments within the region
3. The embedding of such Information and Communications Technologies (ICTs) in government systems
4. The territorialisation of practices that brings ICTs and people together to enhance the innovation and knowledge that they offer.
Our User Base

- 1,200 National Government Agencies
- 11,500 States & Regional Agencies
- 30,800 Cities & Local Governments
- 32,000 Businesses
- 8,500 Utilities
- 12,600 NGOs
- 11,000 Colleges & Universities

Millions of Users
Monitoring

- 311 Dashboard
  - Massachusetts
  - Brazil

- Citizen Problem Reporting
  - United Kingdom
  - Symology Ltd.

- Traffic Management
  - Germany

- Public Transit
  - Washington

- Real-Time Parking Availability
  - North Dakota
  - Fargo

- Parking Capacity
  - Alabama

- Urban Heat Islands
  - Minneapolis

- Underground Network Planning
  - Singapore Land Authority

- Traffic
  - California
  - Colours: Green, Yellow, Red
Understanding

- Income and % Minority
- Traffic and Air Pollution
- Poverty
- Urban Observatory

Population Modeling

- Oakland
- Kirkland, WA
- New Jersey

Green Infrastructure

- San Francisco Planning
- Michigan
- Transit Stop Walk Times
- Walk to Bus Service
Planning

Urban Design
Abu Dhabi, UAE
Gothenburg, Sweden

City Visualization
Helsingborg, Sweden

Land Use Planning
Miami-Dade

Development Review

Noise Simulation
n-Sphere AG, Switzerland

District Revitalization
Oshkosh, Wisconsin
Houseal Lavinge Associates

Comprehensive Planning
Korea, KICT

Hong Kong
Outreach & Engagement

Public Service Information

Smart City Dashboard

Sensitive Habitats

Growth Capacity & Transit Planning

Transit Corridors

"Let's Plan Together"

Historical Viewer
Take Away Messages

- Smart cities are implementing GIS-based solutions for both smarter maintenance and smarter development.
- Smart cities are going 3D, especially for planning and engagement.

→ 3D web API is required
ArcGIS API for JavaScript 4.x
Relevant 3D Features
Smart Mapping
Filtering & Querying
Mobile Support
Edge Rendering
Take Away Messages

• ArcGIS API for JavaScript 4.x integrates very well with existing GIS, especially Pro

• ArcGIS API for JavaScript 4.7 is snappy fast, supports mobile, and looks beautiful

→ 3D web API for planning & engagement apps