ArcGIS Urban: An Introduction

Lisa Staehli – ArcGIS Urban Team | Product Development
Brooks Patrick – ArcGIS Urban Team | Business Development
Our Cities Are Facing Massive Challenges
Our Cities Are Facing Massive Challenges
Our Cities Are Facing Massive Challenges

NOTICE OF PROPOSED LAND USE ACTION

Master Use Project # 3011434
Address: 1537 NW 56TH ST.
Applicant Contact: Jeff Reibman Phone: (206)344-5700

DPD IS CONDUCTING AN ENVIRONMENTAL REVIEW OF THE FOLLOWING PROJECT:

TO CONSTRUCT A 7-STORY STRUCTURE CONTAINING 96 RESIDENTIAL UNITS ABOVE 9 WORK UNITS. PARKING FOR 97 VEHICLES TO BE PROVIDED, 40 WITHIN THE STRUCTURE AND 57 WITHIN EXISTING PHASE I STRUCTURE AT 1536 NW MARKET ST. PROJECT CODES FOR THE DEVELOPMENT EARLY DESIGN GUIDANCE 1 8 8 0 1 1 8 0 ADDITIONAL APPROVALS REQUIRED: DESIGN REVIEW

5/11/11

the comment period ends 5/18/11, but may be extended to 5/25/11 by written request. To submit written comments or to obtain additional information, contact Seattle’s Department of Planning and Development (DPD), 700 5th Ave Ste 2000, P.O Box 9419, Seattle, WA 98101-9419. Contact by phone (206) 684-4447 or email DPD@cityofseattle.gov. Be sure to refer to Project # 3011434.
ArcGIS Urban Stakeholder Concept
ArcGIS Urban Stakeholder Concept

- City Leaders
- Real Estate Developers
- Citizens / NGOs
- Stakeholders
- Planning Professionals
- Standard Services
- GIS Professionals

Standard Practices

ArcGIS Urban

- City Leaders
- Real Estate Developers
- Citizens / NGOs
- Stakeholders
- Planning Professionals
- Higher Value Services
- GIS Professionals
Zoning and Land Use Plans

Create visual and analytical representation that allows planners to ‘do the math’ while at the same time ‘show their work’ to stakeholders.

- **Local Code**
- **Visual Representation**
- **Downstream Reporting**
- **Scenario Management**
Project Status & Design Review

Ensure proposed development conforms to the city policy relating to visibility or shadow impact regulations during design review

- 3D Project Model
- Digital Submission
- Measure Impact
- Streamline Reports
ArcGIS Urban | Will Revolutionize City Planning and Design

Smart Cities
- Plans
  - Zoning
  - Land Use
  - Transportation

Immersive and Collaborative
- Projects
  - Buildings
  - Infrastructure
- Indicators
  - Urban Performance
  - Suitability
  - Impact Evaluations

Digital Twin

Stakeholders
- Government
- Architects
- Developers
- Citizens

Transforming the Process of Urban Development . . .
Demo

Brooks Patrick
Integration of Data Models and Technologies

Provides the common platform for collaboration

Context

Content

Project Lifecycles (BIM)

Landscape Information Models

City Information Models

Zoning and Land Use Codes
ArcGIS Urban Solution Vision

v1.0 Key Capability

- Project Review
- Scenario Planning

Projects

Plans

Indicators

ArcGIS Urban

System Apps
- Community Analyst
- CityEngine
- GeoPlanner
- ArcGIS Pro

ArcGIS Online
- Team Identities
- Living Atlas
- Analysis
- Sharing
- Collaboration
ArcGIS Urban Solution Vision

**v1.0 Key Capability**
- Project Review
  - Projects
- Scenario Planning
  - Plans
  - Indicators

**ArcGIS Hub**
- Citizen Identity
- Event Mgmt.
- Initiatives
- Open Data

**ArcGIS Indoor**
- Portfolios
- Operations
- Assets
- Way Finding

**Real Time Data**
- Sensors
- Stations
- Cameras
- Traps

**Permitting System**
- Active Permits
- Historic Archive

**ArcGIS Online**
- Team Identities
- Living Atlas
- Analysis
- Sharing
- Collaboration

**ArcGIS Enterprise**
- Property Records
- Basemaps

**System Apps**
- Community Analyst
- CityEngine
- GeoPlanner
- ArcGIS Pro

**ArcGIS Urban**
- Business System Integration
Customer Use Cases: “Digital Twins” in Action

**Boston Planning & Development Agency**
An early adopter focused on supporting subarea planning and design review workflows citywide. Planners are looking to rezone many industrial sites throughout key corridors connecting the CBD.

**National Capital Planning Commission**
NCPC is leveraging zoning tools to assess building height regulations and viewshed related design review capabilities to save on consultant contracted project work.

**Miami-Dade County & TPO**
The County working together with the regional TPO needed a common toolset to analyze parcel suitability and zoning constraints along six transit corridors for their regional SMART plan.
3D Data & Maps

3D Smart Model
- About 3D
- 3D Data Download
- Citywide 3D Model
- Web Apps, Scenes & Storymaps

GIS Maps
Historical Maps
More Resources

3D Smart Model

Citywide 3D Model
Explore the City of Boston 3D model below.

Click to view in BostonMaps

Boston 3D Buildings as of 2/15/17
BPDA Tiled 3D Model

The Boston Planning and Development Agency's city-wide 3D model has been cut into one-kilometer tiles and exported to popular exchange formats for use in design-oriented tools. Click the for information on each file type.

Click map tile to view tiled downloads.
Downtown Boston will get a new master plan for zoning

By Tim Logan | GLOBE STAFF | MAY 31, 2018

Request for Proposals
Downtown Planning Study

Top 10 Trending Articles

Dena on the breach; a new trend
Bill Belichick and Rob Gronkowski minimize the Patriots drama
Trump release to sign G-7 pact ending subsidies for Russian oil
Sunday Baseball Notes: City B
Solar power, the Diamondbacks think so
Bob Ryan remembers his start
Globe
Physical therapists vs. acupuncturists: who is to whom?
A tale of two Gendronovski, the Reference Studies
City fails in promise to plant
J.D. Martinez is everything he expected
Trump says Tradesmen work
ArcGIS Urban: Plans

A successful plan needs to be…

Transparent  People Oriented  Well Tested  Data Informed
Transparent
Communication and Collaboration

Stakeholders
Professionals

Communication
Collaboration

Citizens
Real Estate

Government
Architecture
Engineering
Construction
People-oriented Participation

1000+ pages

>3000 comments

273 Visitors

District residents line up to enter and testify before the D.C. Council on Tuesday about proposed changes to the city’s comprehensive plan. The seemingly dry topic has sparked a debate about gentrification, affordability and displacement. (Bonnie Jo Mount/The Washington Post)
People-oriented
Citizen Engagement and Crowdsourcing

*Map-based*: classical, does not scale well, needs a lot of manpower to achieve good results

*Web-based*: scales well concerning outreach, data overflow, difficult analysis/aggregation of comments
Well-tested
Integrated Feasibility Testing

Legal Text
Zoning Codes

Consolidation

Data Model

Parameters

Plausible Building Forms
Scenario Planning
Well-tested
Scenario Planning in the Web
Data-informed
Measurable indicators

Plan / Project-based Indicators

- 664 feet high
- 500 residential units
- 750,000 sq feet office
- 12,000 sq feet public space
- 31,000 sq feet retail

Contextual Indicators
ArcGIS Urban: Indicators

An indicator has to be easy to…

Understand  Reproduce  Explain  Set Up
ArcGIS Urban: Indicators

Indicators provide **actionable**, data-informed feedback

→ **Influences** design
→ **Enhances** urban decision space
Indicators: Population

Population

Households
Indicators: Green Space
Indicators

A typical indicator has these elements…

- **ArcGIS Online Item**
- **Data Source**
- **Indicator Card**
- **Calculation Model**
- **Infographics**
- **Visualization**
Indicators

A typical indicator has these elements...

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Indicators

A typical indicator has these elements…

ArcGIS Online Item

Data Source

Indicator Card

Calculation Model

Infographics

Visualization
Indicators

A typical indicator has these elements…

- ArcGIS Online Item
- Data Source
- Indicator Card
- Calculation Model
- Infographics
- Visualization
Indicator Types

Indicators

Contextual
- Living Atlas
  - Urban Performance

Calculated
- Plan / Project-based Indicators
  - Suitability
  - Impact Evaluations
    (e.g. number of households)

Custom
- Configured
- Create Calculated Charts
- Publish Contextual Indicators
  (Authored in Scene Viewer)
Indicators in ArcGIS Urban
Using Custom Indicators

Publish Layers

ArcGIS Pro
Indicators in ArcGIS Urban
Using Custom Indicators

Publish Layers

ArcGIS Pro

Create New Indicator Scene

(using standard Web Scene Viewer)
Indicators in ArcGIS Urban
Using Custom Indicators

ArcGIS Pro
Publish Layers

ArcGIS Urban
Create New Indicator Scene

Web Scene Item

Add Indicator

(Using standard Web Scene Viewer)
ArcGIS Urban: Projects

A successful project needs to be...

- Transparent
- People Oriented
- Well Tested
- Data Informed
- Interoperable

Plan Context

Project Data Interoperable
Publishing Project Data to ArcGIS Urban
Using Custom Project Data

3D Files
- .obj
- .dae
- .fbx

Publish Scene Layers
-.slpk
Publishing Project Data to ArcGIS Urban

Using Custom Project Data

3D Files

- obj
- dae
- fbx

Publish Scene Layers

Create New Project Scene

(using standard Web Scene Viewer)
Publishing Project Data to ArcGIS Urban
Using Custom Project Data

- **3D Files**
  - .obj
  - .dae
  - .fbx

**Publish Scene Layers**

**Web Scene Item**

**Create New Project Scene**

**Add Project**

(using standard Web Scene Viewer)
Publishing REVIT Data to ArcGIS Urban
Using Custom Project Data

ArcGIS Pro

Direct Read Map Layers

REVIT File

WALLS
ROOFS
WINDOWS
DOORS
FLOORS
<CATAGORIES>
...
Publishing REVIT Data to ArcGIS Urban
Using Custom Project Data
Publishing REVIT Data to ArcGIS Urban
Using Custom Project Data

1. Direct Read Map Layers
2. Publish Scene Layers
3. Create New Project Scene
4. Add Project

(REVIT File) → ArcGIS Pro → Publish Scene Layers → .slpk → Web Scene Item → ArcGIS Urban → Create New Project Scene

(using standard Web Scene Viewer)
Publishing Project Data to ArcGIS Urban
Using (Almost Any) Custom Project Data

CityEngine

Publish Scene Layers

Web Scene Item

ArcGIS Urban

Create New Project Scene

(using standard Web Scene Viewer)
Publishing Project Data to VR
Creating Custom VR Experiences

1. CityEngine
   - Publish to Unreal Engine
   - Register with Project

2. ArcGIS Urban
   - Register with Project

3. Unreal Engine
   - Create New VR Project
   - (WIP)

(Using the Tabletop VR Template)
ArcGIS Urban 2018 - 2019 Roadmap

- **2018 Q1**: Session Demo at APA
- **2018 Q2**: Alpha Testing and Validating with Cities
- **2018 Q3**: Esri UC Plenary w/ Boston (BPDA)
- **2018 Q4**: Select Private Beta Customers
- **2019 Q1**: Public Beta
- **2019 Q2**: V 1.0 General Availability
ArcGIS Urban
Orchestrate urban development

Make planning more creative and more productive

Streamline your plan creation, visualize current projects, and support public- and private-sector collaboration. ArcGIS Urban is a collection of web-based and desktop tools to help you create and manage plans and projects, engage with community stakeholders, and reduce risk—resulting in timely decision-making.
### See Us Here

<table>
<thead>
<tr>
<th>WORKSHOP</th>
<th>LOCATION</th>
<th>TIME FRAME</th>
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</thead>
<tbody>
<tr>
<td>3D Zoning and Development Capacity Analysis</td>
<td>Demo Theater 04</td>
<td>11:15 am – 12:00 pm, Tuesday, July 10</td>
</tr>
<tr>
<td>3D Web Apps for Community Engagement</td>
<td>Demo Theater 12</td>
<td>1:15 pm – 2:00 pm, Tuesday, July 10</td>
</tr>
<tr>
<td>VR and AR in ArcGIS: An Introduction</td>
<td>Demo Theater 04</td>
<td>1:15 pm – 2:00 pm, Tuesday, July 10</td>
</tr>
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<td>Refining 3D Buildings Extracted from LiDAR</td>
<td>Demo Theater 04</td>
<td>10:00 am – 10:45 am, Wednesday, July 11</td>
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<tr>
<td>VR and Game Engine workflows with CityEngine</td>
<td>Demo Theater 04</td>
<td>1:15 pm – 2:00 pm, Wednesday, July 11</td>
</tr>
<tr>
<td><strong>ArcGIS Urban: An Introduction</strong></td>
<td>SDCC - Room 16 A</td>
<td>8:30 am – 9:30 am, Tuesday, July 10</td>
</tr>
<tr>
<td>BIM and GIS: An Introduction</td>
<td>SDCC - Room 14 A</td>
<td>1:00 pm – 2:00 pm, Tuesday, July 10</td>
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<td>CityEngine for Urban Planning</td>
<td>SDCC - Room 32 A/B</td>
<td>8:30 am – 9:30 am, Wednesday, July 11</td>
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<td>Creating your 3D City Basemap</td>
<td>SDCC - Room 08</td>
<td>8:30 am – 9:30 am, Wednesday, July 11</td>
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<td>3D: Putting Smart Planning into Practice</td>
<td>SDCC - Room 14 B</td>
<td>10:00 am – 11:00 am, Thursday, July 12</td>
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<td><strong>ArcGIS Urban: An Introduction</strong></td>
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<td>1:00 pm – 2:00 pm, Thursday, July 12</td>
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Please Take Our Survey on the App

Download the Esri Events app and find your event

Select the session you attended

Scroll down to find the feedback section

Complete answers and select “Submit”
Brooks Patrick
ArcGIS Urban Team | Business Development
bpatrick@esri.com