Cooper, Robertson and Partners
Architecture, Urban Design

Mike Aziz, LEED AP
New York, NY
The GIS World
How we use GIS
How we use GIS

1. Base Mapping
2. Landform Analysis
3. Data-Integrated Analysis
Base Mapping
1. Base Mapping

Traditional Base Maps

Limited access  Lack of detail  Insufficient resolution
1. Base Mapping

Traditional Analysis

Time consuming

Inflexible
1. Base Mapping

GIS Base Maps

- Increased access
- Increased detail
- Increased quality
1. Base Mapping

GIS Supported Analysis

ArcGIS

Aerials

Community Maps

Shp files

Fast, Flexible, and Easily accessible
Landform Analysis
2. Landform Analysis

East Edisto, SC

15 miles

East Edisto
77,000 acres

Charleston, SC

Hamlets
Villages
Towns
TOD

75% Green
2. Landform Analysis

East Edisto, SC
2. Landform Analysis

East Edisto, SC
2. Landform Analysis

East Edisto, SC
2. Landform Analysis

- Landform Analysis
  - Topographic
  - Hydrological
  - Ecological

- Design Vision
  - Social
  - Economic
  - Political

Master Plan
2. Landform Analysis

Topography Modeling
2. Landform Analysis

Topography Modeling
2. Landform Analysis

Slope Analysis

15-30% Small Footprints

0-15% Medium and Large Footprints
2. Landform Analysis

Hydrological Analysis

- Lidar
- Topo to Raster
- Flow Direction
- Flow Accumulation
2. Landform Analysis

Hydrological Analysis

Lidar

Topo to Raster

Flow Direction

Flow Accumulation
2. Landform Analysis

Hydrological Analysis
2. Landform Analysis

Master Plan Framework
2. Landform Analysis

Conceptual Masterplan
Data-Integrated Analysis
3. Data-Integrated Analysis

Research Triangle Park

Research Estates in a “Park” Setting with a central service center and bisecting highway access
3. Data-Integrated Analysis

Research Triangle Park
3. Data-Integrated Analysis

Research Triangle Park

Research Triangle Park

Palo Alto, CA
3. Data-Integrated Analysis

Research Triangle Park

Research Triangle Park

American Tobacco, Durham, NC
3. Data-Integrated Analysis

Physical Geography
3. Data-Integrated Analysis

Physical Geography
3. Data-Integrated Analysis

Corporate Geography
3. Data-Integrated Analysis

Corporate Geography
3. Data-Integrated Analysis

Corporate Geography

Parcel Ownership

Building Age

RTP

Lease

10-20

30-50

+50
3. Data-Integrated Analysis

Corporate Geography

Corporate Qualitative Survey
3. Data-Integrated Analysis

Conceptual Framework

- Physical Geography
- Corporate Geography
- Planning Vision
3. Data-Integrated Analysis

**Mixed-Use Clusters**
3. Data-Integrated Analysis

Mixed-Use Clusters
3. Data-Integrated Analysis

Mixed-Use Clusters
3. Data-Integrated Analysis
3. Data-Integrated Analysis
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Residential  Parks  Highways
3. Data-Integrated Analysis

Client’s desires: Display an adherence to the City’s planning vision through the use of GIS analysis and agreed upon planning principles → Planning approvals → An improved public realm
3. Data-Integrated Analysis
3. Data-Integrated Analysis
3. Data-Integrated Analysis

Filter Out

CEMUSA
3. Data-Integrated Analysis

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3. Data-Integrated Analysis
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Application of planning principles
3. Data-Integrated Analysis

Bus Shelter Location Analysis
March 12, 2011

Newsstand Location Analysis
March 12, 2011
3. Data-Integrated Analysis

Client’s desires → Negotiation of planning constraints → Planning approvals → An improved public realm
An urban designer’s GIS wishlist
An urban designer’s GIS wishlist

1. Broader 3D interoperability
2. Increased graphic and layout functionality
3. Design school outreach
Cooper, Robertson and Partners
Architecture, Urban Design

Mike Aziz, LEED AP
New York, NY

Questions?