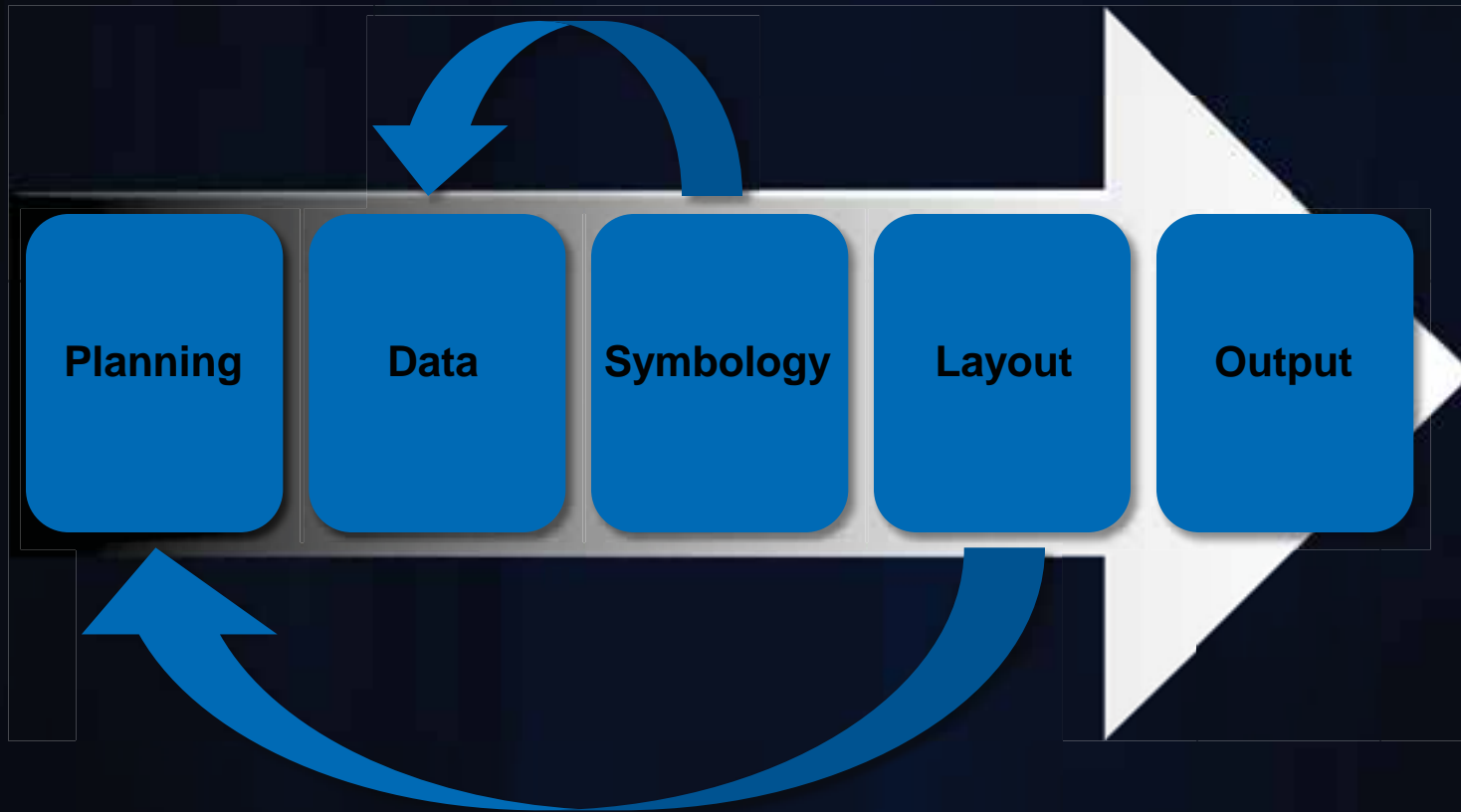# Streamlining Map Production

Clint Loveman

The cartographic workflow

Overview of cartographic workflow

- **Planning**
  - Which message needs to be communicated?
  - Why does the map need to be created?
  - What are your design controls?

- **Data**
  - Which data supports the objective?
  - Does the data support cartography?
  - Is the data available?

Overview of cartographic workflow

- **Symbology**
  - Is the data qualitative or quantitative?
  - Do symbol standards exist?
  - Which type of symbols best meet the objective?

- **Layout**
  - Which page size should be used?
  - Landscape or portrait page orientation?
  - Is there a standard layout or template?
  - Will multiple maps be needed?

- **Output**
  - How will the map be delivered?
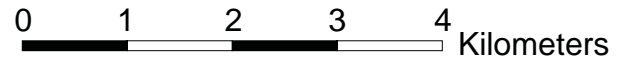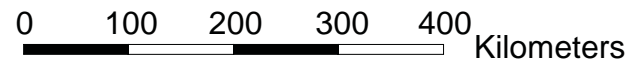
Planning – Map Scale

Planning - Coordinate System

- Map objective
- Area of interest
- Select GCS
- Projection properties
- Select PCS
- Modify properties

Data

- **Selecting Existing Data**
  - **Help orient the map reader?**
  - **Support the map objective?**
  - **Explain the distribution of other data?**

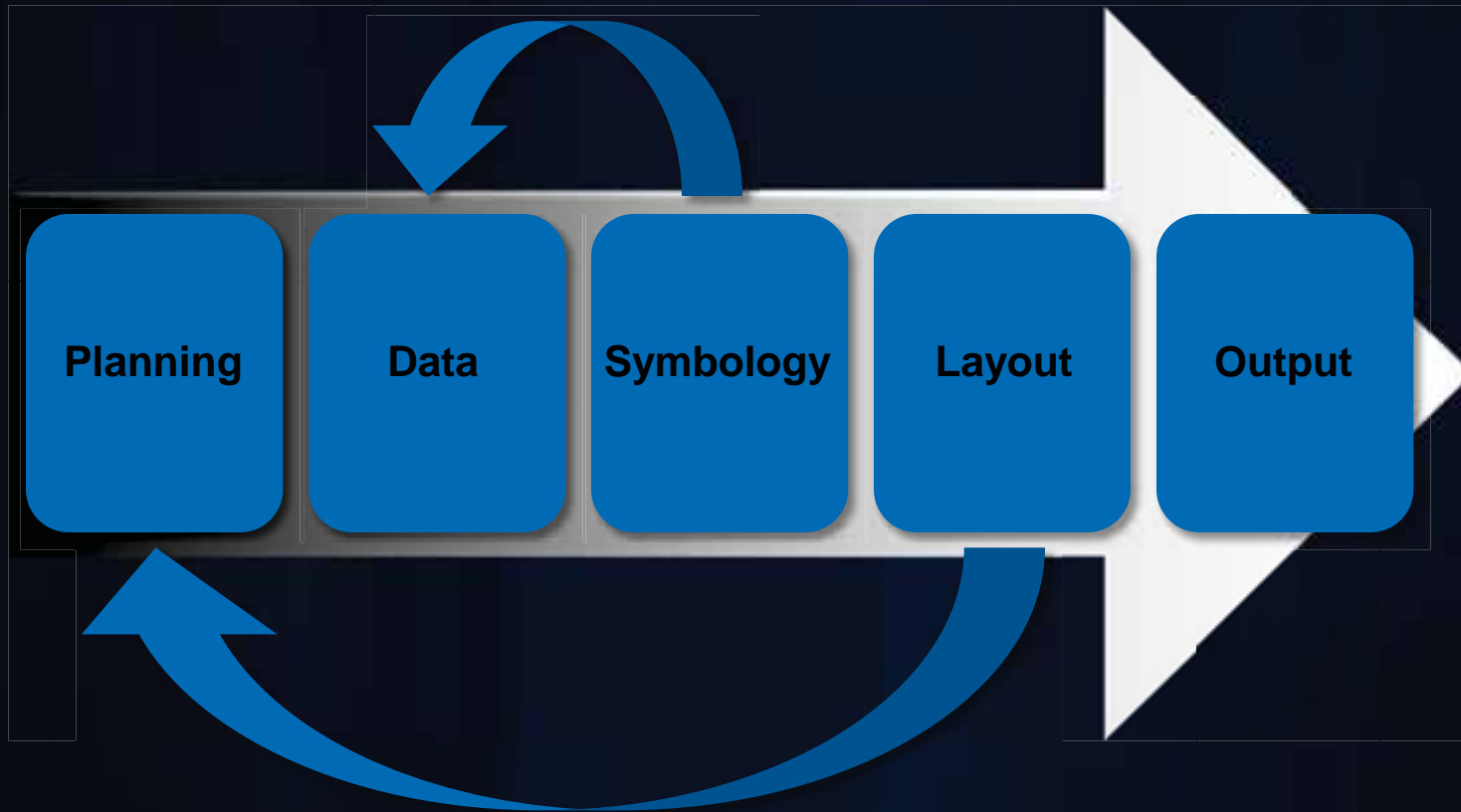**Creating cartographic Data**
  - **Manual**
  - **Derived**

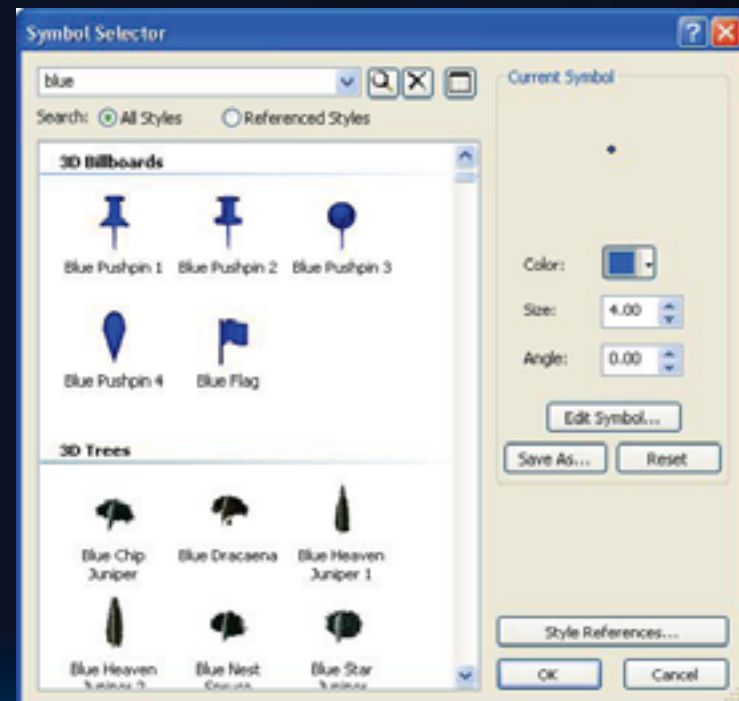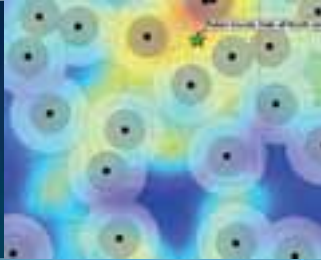| Streets	Water pipes
Cities	Valves
Boundaries	Fire perimeter
Basemap layers	Operational layers

The cartographic workflow
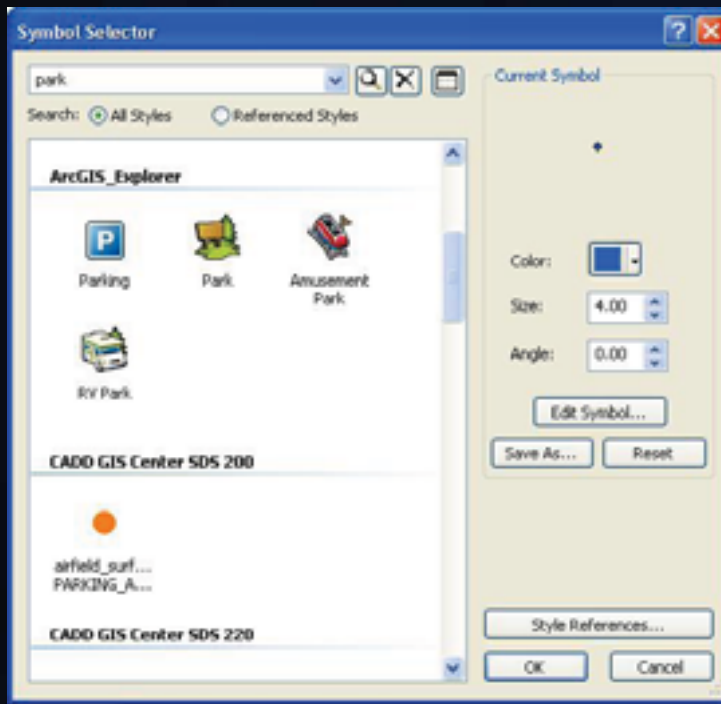
Planning and Data
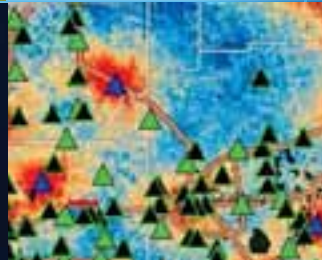
Symbology – Search Styles

- **All or Referenced styles**
- **Symbol names and tags**
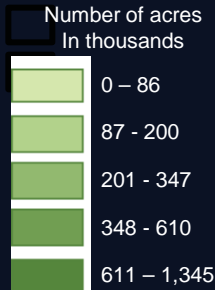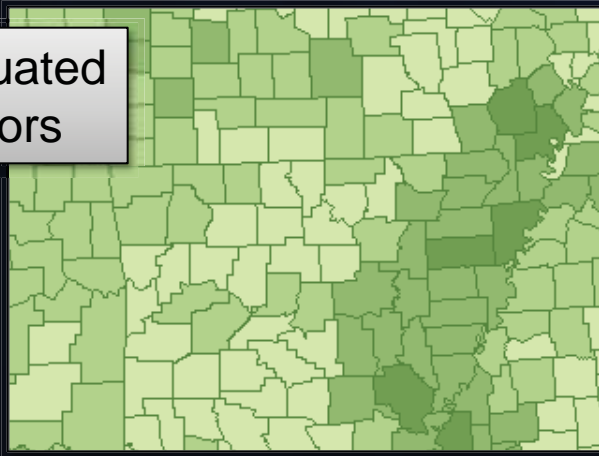- **Common search strings "color"**

Symbology – Symbolization methods

Crop Acres by County

Graduated Colors

Number of acres
In thousands

- 0 – 86
- 87 - 200
- 201 - 347
- 348 - 610
- 611 – 1,345

2005 – 2030 Growth of Housing Units

Proportional Symbols

© Parsons Corporation

- 20,000
- 5,000
- 1,000
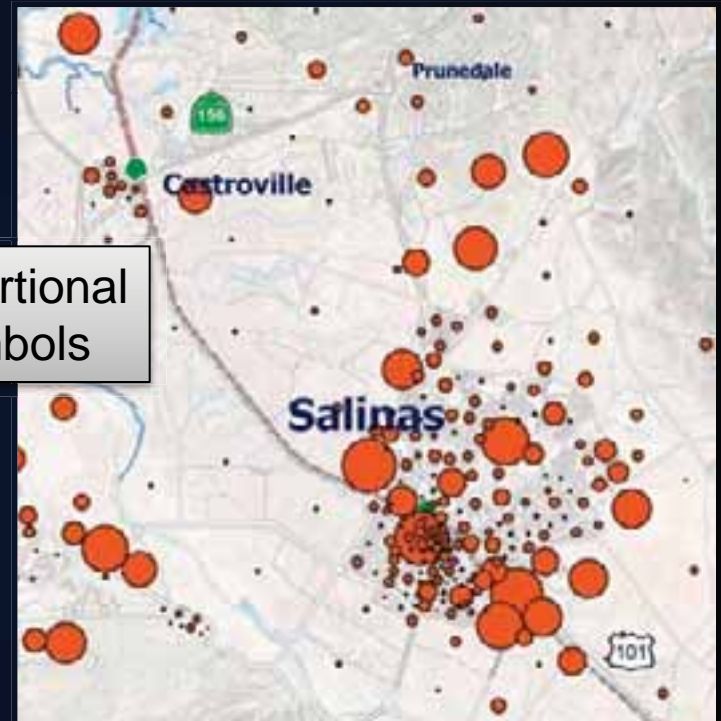
Number of Farms by County

Graduated Symbols

- 0 – 500
- 501 – 2,500
- 2,501 – 6,500

Symbology – Symbolization methods

Acres of Cropland

Dot Density

City of Yakima Traffic Safety Analysis
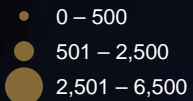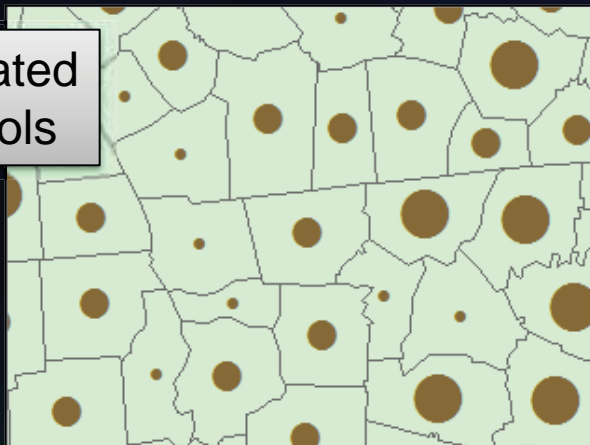

© City of Yakima, Washington
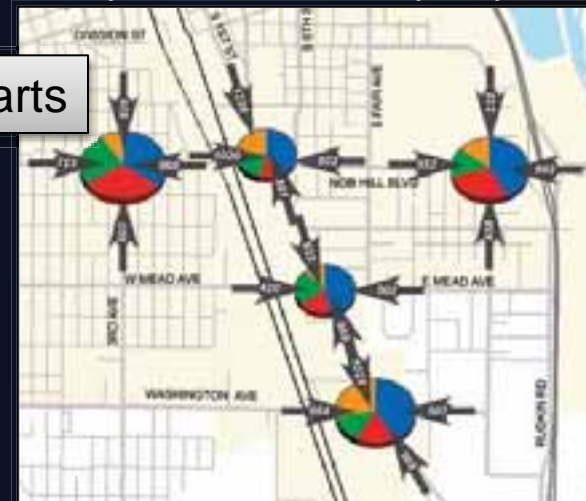
Charts

Troop-Contributing Countries to United Nations Missions

© United Nations Cartographic Section

Multiple Attributes

Contributing country

Non-contributing country

9,789   3,054   1,971   1,030
Number of troops committed

Broadside collisions

Rear-end collisions

All other collisions

Non-intersection collisions

Size of chart related
to Broadside collisions

Peak hour traffic count

Symbology – Feature Class Representations

Symbol enhancement and masking

Create geometric effects

Create custom symbols
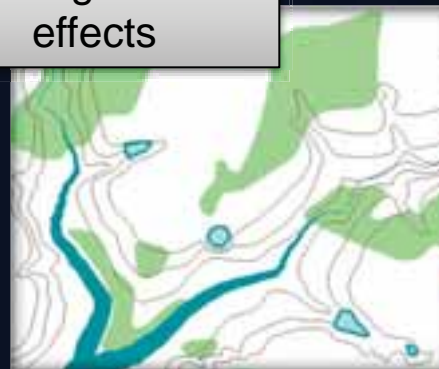
Control clipping of fill symbols

Public Library

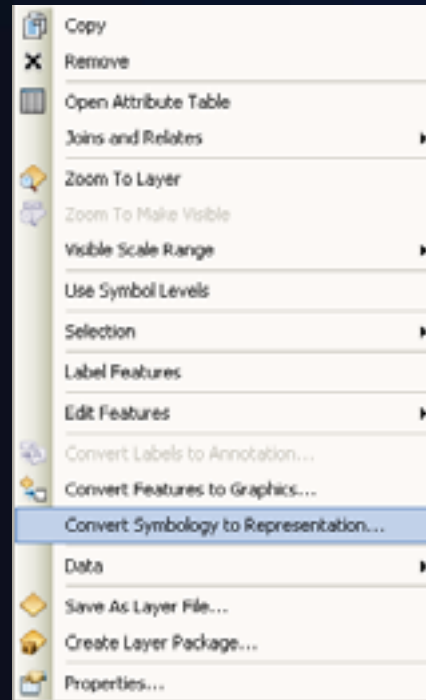Central Park Bldg

City Hall
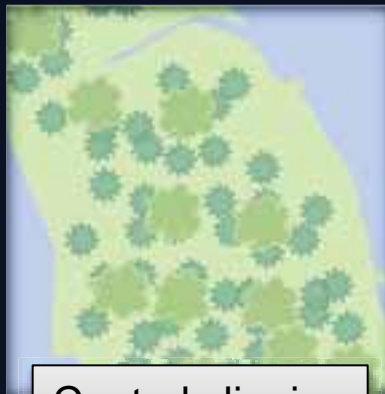
Move symbology independently of geometry

How to Make Representations

- **Conversion**
  - **Layer in TOC**

- **Style Manager or Layer**
  - **Representation Rule Editor**
  - **Marker Editor**

- **When and Why?**
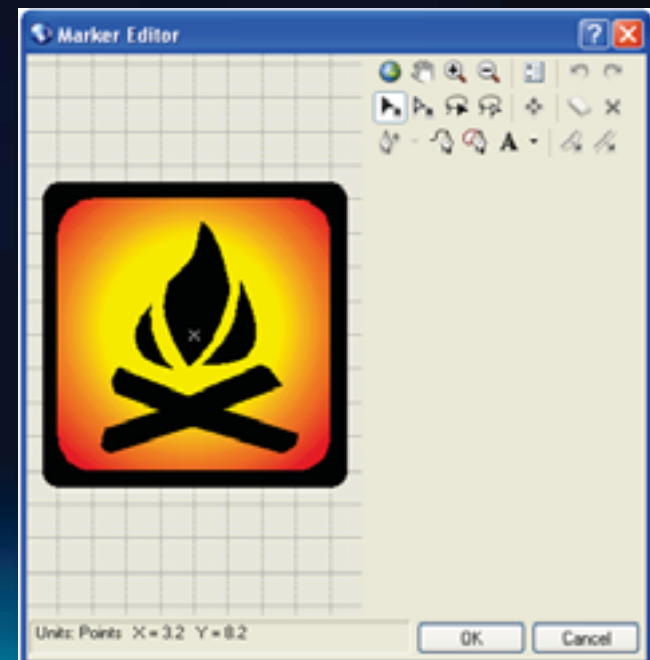
Symbology – Visual Specifications

- **Production Mapping Extension**

  - Manage representations across many layers

  - Link feature attribution to representation rules

  - Apply symbology using relational queries

  - Single production workflow for symbology and text

Symbology – Views

- **Production Mapping Extension**

  - Centralized Data Frame and Layer settings

  - Stored and managed in a geodatabase

  - Allow maps settings within a single document to be updated quickly
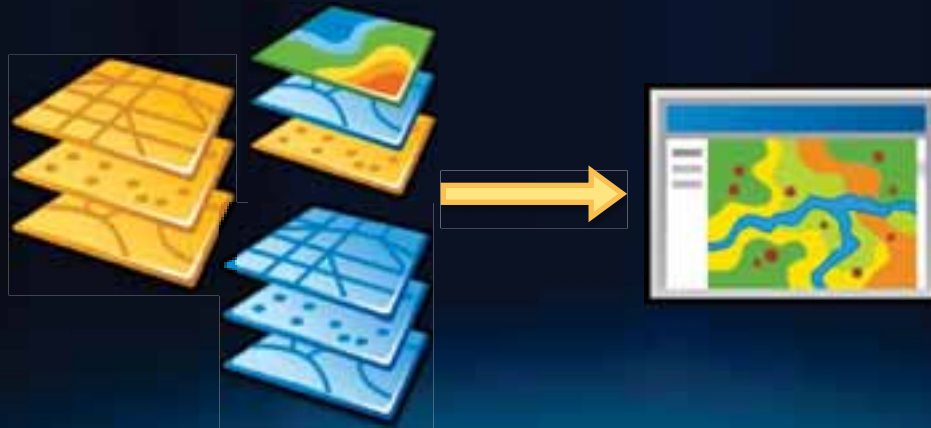
Symbology

Layout – Elements

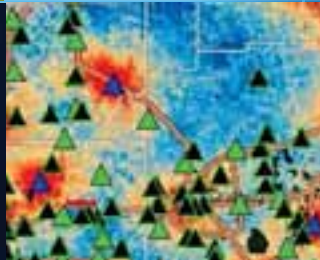- **Supplement the geographic information**

- **Insert menu & Drawing toolbar**
  - Data frame, titles, north arrows, scale bars, etc…

- **Production Mapping Extension**
  - Graphic table
  - Topographic
    - Declination diagram (north arrow)
    - UTM Grid reference

Layout – Page Management

- **Scroll Bars; Rules, Guides and Grids**
  - View menu

- **Production Mapping Extension**
  - Element window
    - list of elements for centralized management
  - Layout rules
    - Relational placement of surround elements

Layout – Document Management

- **Data Driven Pages**
  - Single layout
  - Index feature layer
  - Multiple pages based on feature extents

- **ArcPy**
  - Update symbology
  - Change data source
  - Map export

Layout – Document Management

- **Production Mapping Extension**
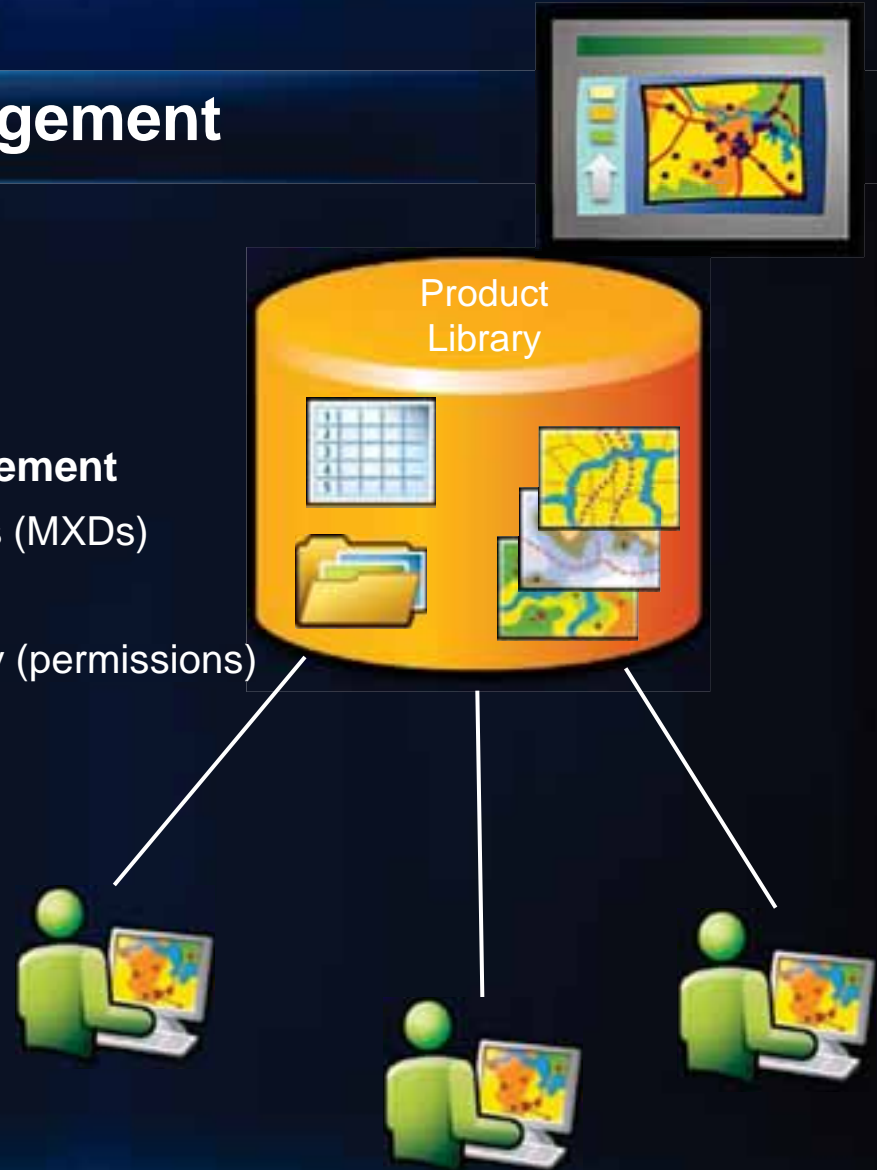
  - **Product Library**
    - **Spatial enabled document management**
      - Map Sheets & Data Driven Pages (MXDs)
      - Associated documents
      - Check in/out, undo, get local copy (permissions)
      - Versions
      - Searching

    - **Centralized business rules**
      - Cartographic display
      - Data quality rules
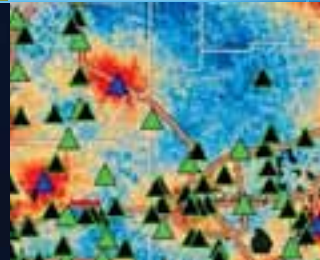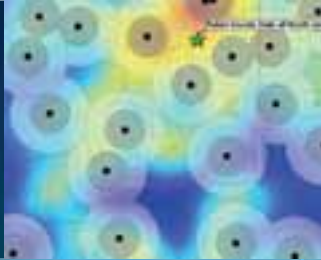   - Data editing and attribute display

Product Library

Output

- **ArcPy**
  - Export
    - PDF Multipage support

- **Production Mapping Extension**
  - Layout GeoTIFF
  - Color Separation
    - Raster TIFF
    - Vector EPS Spot Color

Layout and Output
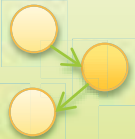
Product Information

- **Enables high volume, high quality production**

- **Facilitates standard, repeatable workflows**

- **Individual Extensions**
  - **Data Reviewer**
  - **Workflow Manager**

- **Suite of Extensions**
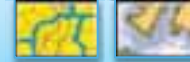 - **Production Mapping**

Production Mapping

Workflow Manager

Data Reviewer

Cartography

Editing

Great Resources

- **Resource Center**
- **Product Information**
  - **Production Mapping – [www.esri.com\productionmapping](http://www.esri.com/productionmapping)**
  - **Data Reviewer - [www.esri.com\datareviewer](http://www.esri.com/datareviewer)**
    - **Workflow Manager – [www.esri.com\workflow](http://www.esri.com/workflow)**

Questions?