

## Culminating Project Activity - Science

The Allentown City Government is creating a new city comprehensive plan for future sustainable development and is interested in **smart growth**. For example, smart growth would support existing communities and neighborhoods by developing in areas where the infrastructure (buildings) is already in place.

The comprehensive plan focuses on the following **inter-related plan elements**:

1. Energy and climate change reduction
2. Park system and recreational opportunities
3. Transportation and safety systems
4. Economic development, commercial areas and tourism

You have become very familiar with a ward in Allentown and have developed ideas to make your ward environmentally, socially, and economically sustainable. Your goal is to incorporate one **inter-related plan element** into the City of Allentown for making **your ward and the City of Allentown** more environmentally sustainable. You will develop a presentation for the City of Allentown that includes **smart growth principles and further promotes environmental sustainability**.

You will use Web GIS to examine relevant data for your area. As you develop your presentation, consider:

- Reducing urban heat island effects
- Reducing carbon dioxide emissions (carbon footprint)
- Water and waste management
- Transportation
- Environmental health and protection
- Trees and ecosystem services
- City infrastructure
- Ways to promote mixed use
- Urban and green infrastructure design.

**Focus on how to make the neighborhoods more livable for its citizens.**

As you develop your proposal, think about the following **themes**:

- **Land use** - includes vacant land, brownfields, redevelopment opportunities, residential areas, commercial areas, and industrial areas.
- **Environment and Natural Resources** – includes natural resources, floodplains and wetlands, carbonate geology and sinkholes, water quality, air quality, and brownfields.
- **Transportation** – includes bicycle and pedestrian travel, public transportation, bus networks, parking, and highway and street networks.
- **Economic development** - includes land and buildings, downtown revitalization, neighborhood commercial development, arts and culture.

- **Neighborhood Conservation** – includes clean and safe environments, public services, amenities, and land use.
- **Community Facilities** – includes parks and recreation, solid waste and recycling, health care, public buildings, and public safety.
- **Housing** – includes housing and neighborhoods, assisted housing, and special needs housing.

Think of ways to encourage **smart growth** and smart building principles in Allentown:

- Enhance public transportation routes to reduce carbon emissions.
- Preserving open space, natural beauty, and critical environmental areas to reduce the urban heat island effect.
- Create mixed use in buildings, use green design features, use existing structures and vacant lots (infill development) or repurpose abandoned industrial sites (brownfield redevelopment).

### **Presentation Guidelines:**

1. Select **one** of the following **inter-related plan elements** for your presentation:
  1. Energy and climate change reduction
  2. Park system and recreational opportunities
  3. Transportation and safety systems
  4. Economic development, commercial areas and tourism
2. Identify locations for **reuse of existing sites or changing existing infrastructure**.
3. Identify locations for **new development, features, facilities, parks, or open spaces**.
4. **Create a Web GIS map** for your area that reflects your proposed changes.
5. Justify your proposed changes with **data from the Web GIS**.
6. Describe how your proposed changes **promote Smart Growth principles** for Allentown.
7. Explain how those changes are **environmentally sustainable** for Allentown. **Explain how the city will be more livable for its citizens**.
8. Include **images and geospatial data from the Web GIS map** to support your justifications. You must include at least **4 screenshots** from your Web GIS map that highlights your **inter-related plan element** change you would make in Allentown.
  - Make sure your screenshots are very detailed and **includes labels, legends, and important features of your area to support your improvement. Include a caption.**
9. Include **at least 4 slides** that address **at least four or more themes** from this list:
  - Land Use
  - Environment and Natural Resources
  - Transportation
  - Economic Development
  - Neighborhood Conservation
  - Community Facilities
  - Housing

**Be sure to title each slide with a separate heading for each theme section.**