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.**