Geographic Assessment of the Operational Environment: Kyiv, Ukraine

Environmental Matrix: Physical Factors

- **Location**
  - Eastern Europe, Northern Hemisphere
  - Bordering Russia (historical tensions seen in present day)
  - Downstream of nuclear power plant
  - Close to NATO nations

- **Weather & Climate**
  - Temperate continental climate
  - Comfortable summers; long snowy winters 20°F to 78°F
  - Fall and winter severe weather prone
  - Affects aerial support and ground transportation

- **Surface Materials**
  - Fertile Ground
  - Saturated soils are prone to flooding

- **Hydrology**
  - Cuts through city
  - Very matured meandering river
  - Prone to flooding and change of location
  - Need of bridges to cross and awareness of offensive/defensive posture
  - Aerial transportation most effective

- **Vegetation**
  - Land ideal for agriculture (woodlands have been cleared for cultivation)
  - Lack of solid soil leads to erosion

- **Landforms and Surface Structure**
  - Higher elevations: 70-80m above river surface
  - Forest-Steppe (ideal for agriculture)

- **Resources**
  - Nothing significant

Map of Study Area

Top Three Hazards

- **Natural Hazard: Flooding/cascading**
  - The river dissects the middle of the city.
  - The greatest weakness are the bridges connecting the two sides of the river.
  - Rain season: April-July and heavy snowfall August-September,
    *August and September are best dates for movement and action.*
  - There are six main bridges for transportation that could be damaged by flooding.
  - Bridges must be monitored for damage and maintained as key terrain.

- **Environmental Hazard: Pollution from power plants**
  - Located 200km downriver from Chernobyl nuclear power.
  - This will indirectly affect the drinking source, disaster relief efforts, and air pollution.
  - Pollution is likely to occur during a major storm or weather phenomenon, which is less likely during summer months.
  - Hazmat/CBRN equipment is required.

- **Human Induced Hazard: Cyber attacks**
  - Kyiv is susceptible to cyber-attacks due to a lack of infrastructure to support industrialization movement.
  - Russia is known for using cyber-attacks.
  - Security teams should be created to monitor security if a breach were to occur.

Environmental Matrix: Cultural Factors

- **Population**
  - 2.96 million people
  - Densely populated in urban center

- **Cultural Groups**
  - Pro-Ukraine vs. Pro-Russia

- **Cultural Components & Institutions**
  - Russian speakers
  - Christian majority

- **Settlement & Land Use**
  - Majority urban area with small rural sects in the suburbs.

- **Economy**
  - Industry hub of Ukraine

- **Networks**
  - Many train routes
  - Port access
  - Large communication systems
  - Six main bridges

- **Cultural Capabilities**
  - Technology hub of Ukraine
  - Large divide between Pro-Russian and Pro-Ukraine citizens
  - Highly industrial city due to proximity of natural resources

Thesis: Kyiv’s physical and cultural factors lead it to be of significance in the world today and a potential epicenter for armed/cyber conflict due to its proximity to NATO nations, current infrastructure, and political and military tension reaching an all-time high since World War II. Additionally, Kyiv is a hotspot for environmental hazards, like flooding, due to the climate of the region, and the city’s location in the basin of the Dnieper River.

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