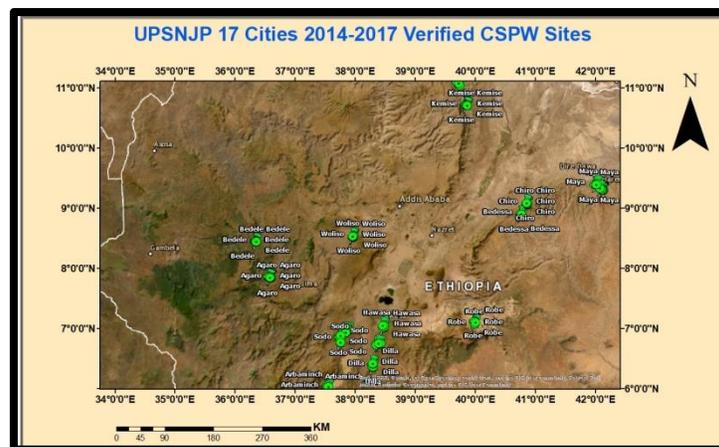


GIS and Mapping in UPSNJP Public Works and Urban Projects

GIS and Mapping for UPSNJP Public Works



Why Geospatial Data Matters for Urban Projects

Geospatial data (location-based data such as GPS coordinates, satellite imagery, maps, and GIS layers) is essential for planning, implementing, and monitoring urban projects. For urban public works, infrastructure, and social programs, it improves accuracy, transparency, and efficiency.

1. The key reasons: For use of Geospatial data for urban Projects

A. Better Planning and Site Selection

Geospatial data helps planners:

1. Identify suitable land for Project Works like infrastructure (roads, drainage, public toilets, green spaces)
2. Avoid environmentally sensitive areas
3. Understand population density and settlement patterns

For example, tools like ArcGIS allow mapping of terrain, land use, and utilities before construction begins.

B. Evidence-Based Decision Making

Urban projects require data-driven decisions. Geospatial data provides:

- ❖ Accurate mapping of underserved neighborhoods
- ❖ Identification of poverty clusters
- ❖ Service coverage gaps (water, sanitation, waste management)

This ensures public resources are allocated fairly and efficiently.

Monitoring & Evaluation (M&E)

For programs like public works or safety net initiatives:

Each project site can be geo-tagged,

- ❖ Progress can be tracked spatially ,
- ❖ Duplicate efforts can be avoided.
- ❖ Field data can be verified remotely ,

These strengthens accountability and reduces misuse of resources.

Transparency and Public Accountability

Mapping projects publicly:

- ❖ Shows citizens where investments and settlements are happening,
- ❖ Reduces corruption risks,
- ❖ Supports donor reporting requirements

Many World Bank–supported initiatives use geo-enabled monitoring systems for transparency.

E. Risk Management

Urban areas face risks like flooding, erosion, and landslides. Geospatial analysis helps:

- ❖ Map hazard-prone zones,
- ❖ Design resilient infrastructure,
- ❖ Plan emergency response routes

Satellite data and remote sensing are critical tools in this process.

F. Resource use Optimization

With spatial analysis, cities can:

- ❖ Optimize efficient and effective use of human and financial,
- ❖ Optimize solid waste collection routes, Plan greenery development,
- ❖ Design efficient drainage systems,
- ❖ Reduce cost overruns.

G. Integration with Modern Technologies

Geospatial data supports:

- ❖ Mobile data collection apps,
- ❖ Drone mapping.
- ❖ Smart city systems,
- ❖ Web-based dashboards

2.In UPSNJP Context: Urban Public Works Projects

urban public works such as:

- ❖ Solid waste management
- ❖ Watershed management
- ❖ Small infrastructure
- ❖ Greenery development
- ❖ Creating Favorable Condition for Urban Agriculture

Activities marked with point, line and polygon features all are supported by geospatial tools like Google earth pro, kobo toolbox... to collect data inputs and Arc map for analysis in site plan preparation and city, regional country wide mapping.

All these geo-enabled project implementations systems are to insure transparency.

Geospatial data ensures:

- ❖ No duplication of work
- ❖ Clear identification of work sites
- ❖ Accurate reporting to higher authorities
- ❖ Strong monitoring and evaluation systems

3.Conclusion

Geospatial data is not just a technical tool, it is a strategic governance instrument. It improves planning quality, strengthens accountability, reduces duplication, and ensures equitable urban development.

MUI's Urban Food Security Office Public work Desk has been doing all its best to meet project management requirements in the efforts being made to transform life of urban poor through job training in use of public work activities which have multifaceted impact on life of beneficiaries.