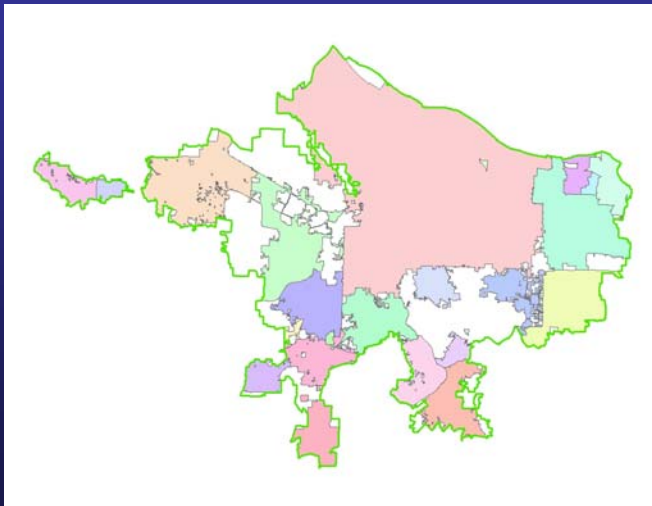


## Research Question

- What would happen to emergency services and the area's they are responsible for covering if the FEMA 100 year floodplain was inundated?

## Introduction

- Original Study Area
- Cities within the Urban Growth Boundary



## Data Collection

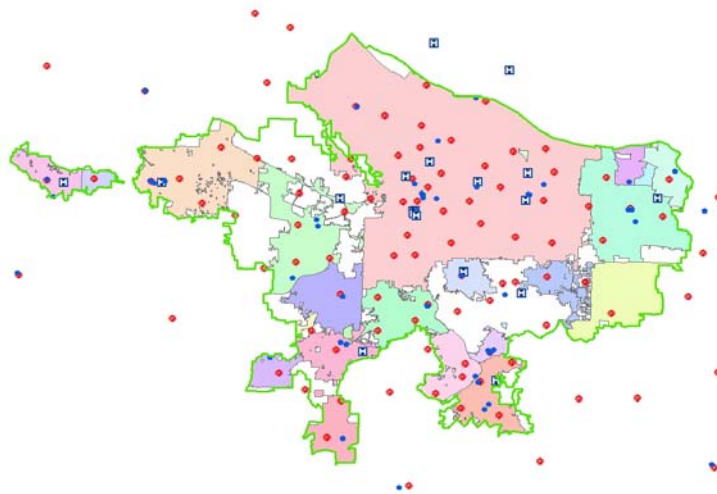
- Geocoded Police  
-via internet
- All other layers were  
obtained from RLIS



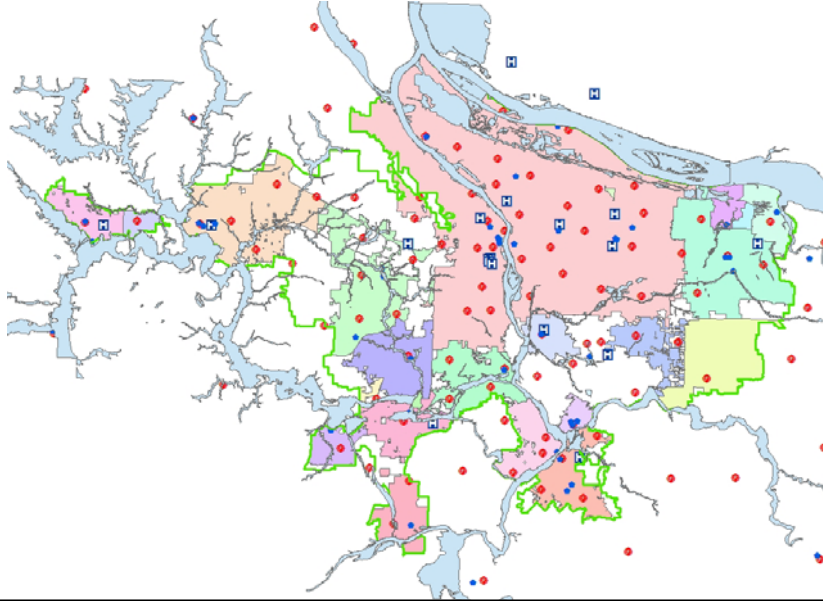
(2)

## Analysis and Modification

-Addition of Critical Facilities



## Addition of the FEMA Flood



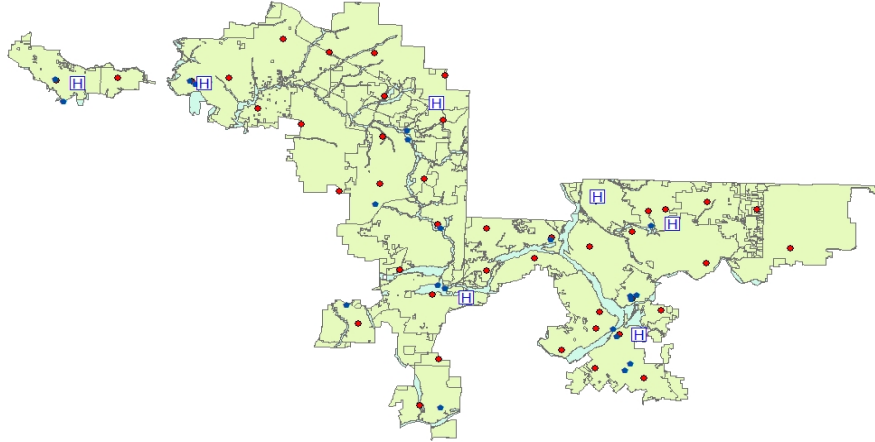
## Clipping Layers

- Multnomah County well covered by all critical facilities.
- Reduced study layers to Washington and Clackamas Counties due to effected facilities within those areas.
- Union of cities and counties for Washington and Clackamas Counties.



(1)

## Reduction



-Critical facilities and the FEMA flood within Clackamas and Washington Counties

## Building a Network

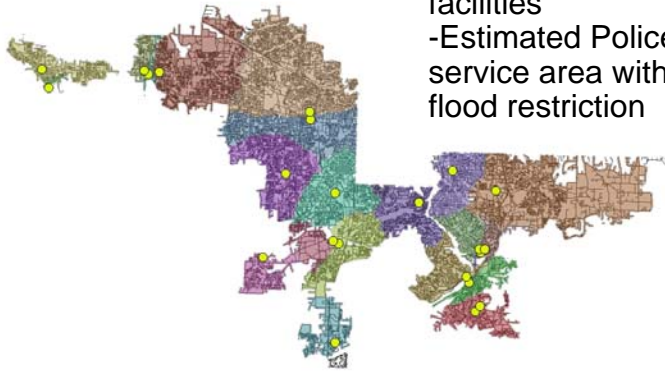
- Using ArcCatalog
  - Created a personal geodatabase
  - Within the geodatabase we created a network using streets within the urban growth boundary



(5)

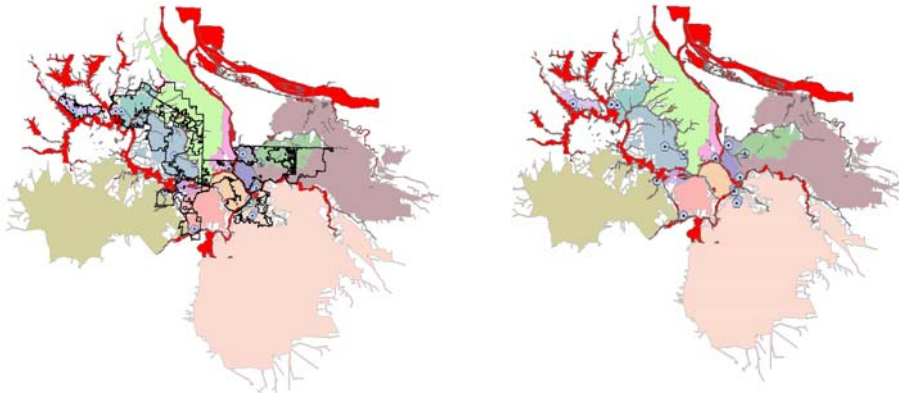
## Creating a Police Service Area

- Utilizing the Network
  - Added in critical facilities
  - Estimated Police service area without flood restriction

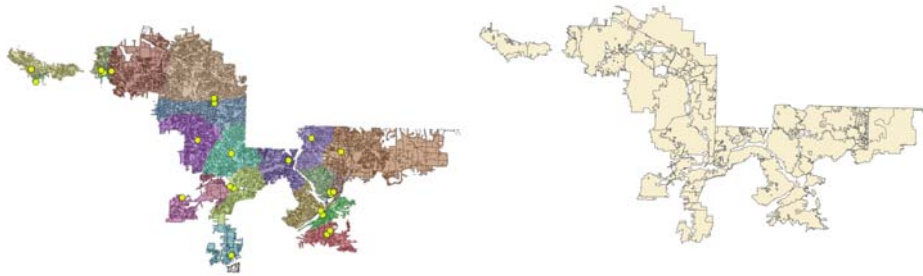


## Police Service Area Flood Included

- removed two Beaverton Police Stations due to inundation by the Flood

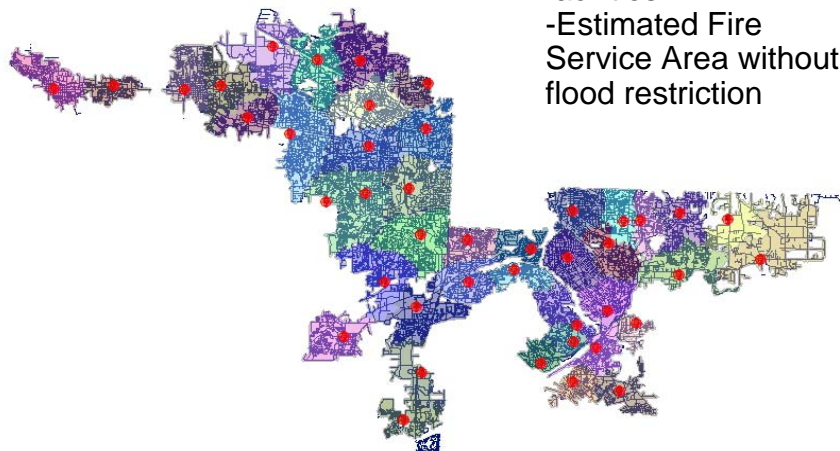


## Affected Police Service Area

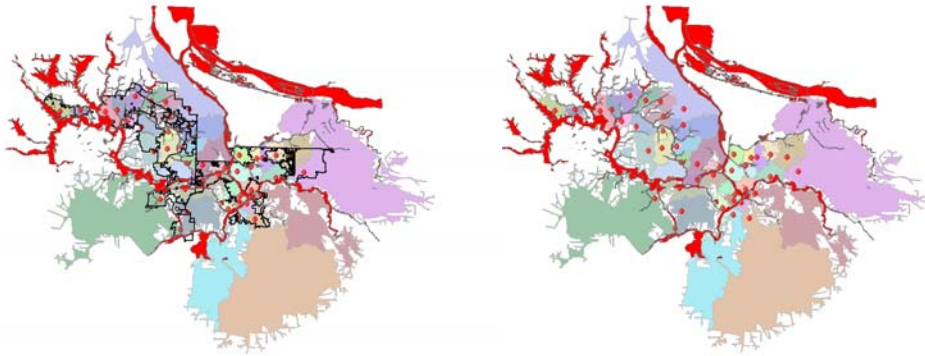


## Creating a Fire Service Area

- Utilizing the Network
  - Added in critical facilities
  - Estimated Fire Service Area without flood restriction



## Fire Service Area Flood Included

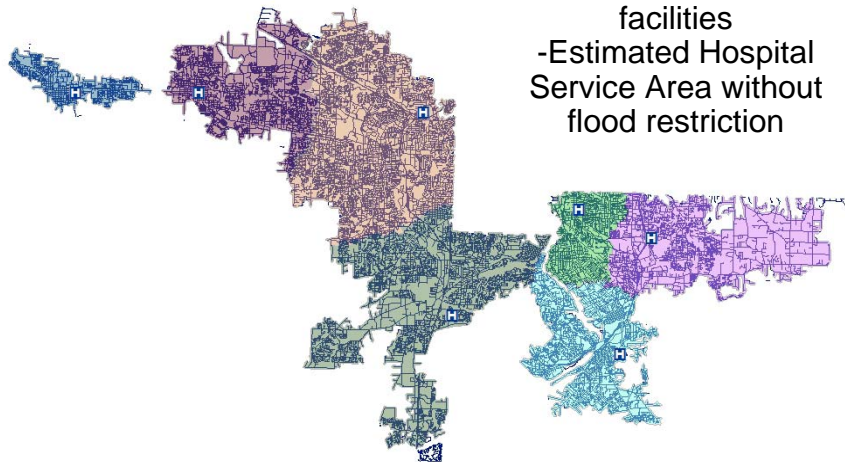


## Affected Fire Service Area

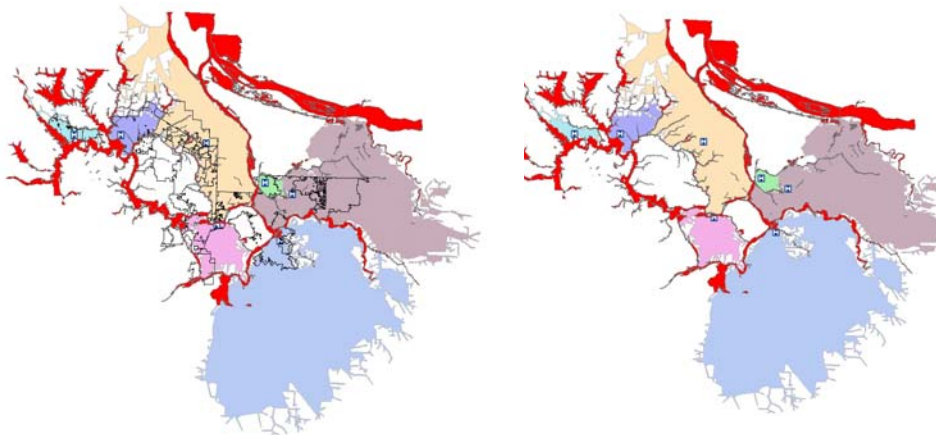


## Creating a Hospital Service Area

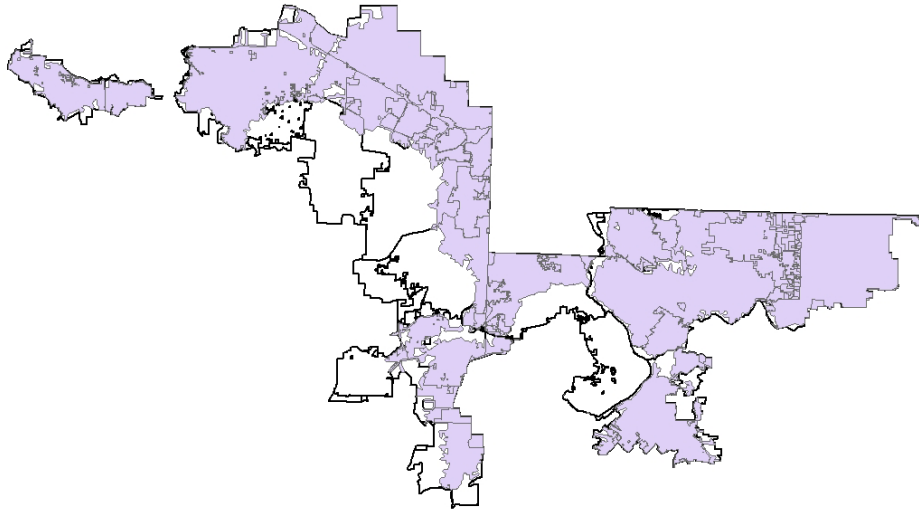
Utilizing the Network  
-Added in critical  
facilities  
-Estimated Hospital  
Service Area without  
flood restriction



## Hospital Service Area Flood Included



## Affected Hospital Service Area



### Limitations

- Assume emergency services will not cross flooded sections of the river at any point.
- Analysis limited to ground services.
- Average Maximum Speed
  - Police 60mph
  - Ambulance 50mph
  - Fire 40mph
- No Freeway/Highway access.
- Emergency Service will coordinate

## Conclusions

- Police are well covered if they agree to share jurisdictions.
- Fire Stations are very well covered.
- Hospitals have limited access to much of their service area.
- Multnomah County had excellent coverage throughout with all services.

## References

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6. RLIS
7. Google Maps. Accessed 4/14/08