Minnesota Silver Jackets Pilot Project

Flood Inundation Map and Warning System for Downtown St. Paul

National Flood Risk Management and Silver Jackets Workshop

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Flood Inundation Map and Warning System for Downtown St. Paul

Objectives

- Leverage existing resources
  - USACE HEC-RAS unsteady model for the Mississippi
  - Existing USGS gage location and long period of record
  - NWS forecast point
  - City of St. Paul survey data
  - FEMA HAZUS Database
  - Studies by others
Annual Peak Streamflow Recorded at USGS Streamgage at the Mississippi River at St Paul, Minnesota

![Graph showing annual peak streamflow recorded at USGS streamgage at the Mississippi River at St Paul, Minnesota. The graph displays data points from the years 1880 to 2020, with notable peaks in 1952, 1965, and 2001. The discharge, in cubic feet per second, is plotted on the y-axis, and the year is plotted on the x-axis.]}
Objectives - Continued

- Create a flood inundation map
  - Define flood risk
  - Scenario-based
- Enhanced NWS forecast capabilities
- Inform public policy decisions (land use, zoning, permitting)
- Develop/improve flood warning systems
Upper Landing & Harriet Island
GOT FLOOD INSURANCE?
Objectives - Continued

- Produce public education materials
  - Potential to work with the Science Museum of Minnesota
  - Video display kiosk
  - Inform public on natural and beneficial uses of the flood plain
- Guide mitigation efforts
Harriet Island
1952 Flood
Objectives - Continued

- Reduce future risk to life and property!
  - Improve urban planning
  - Update existing FEMA NFIP data & documents for the study area
  - Promote wise use of the flood plain
  - Reduce future expenditures on response and recovery
Downtown St. Paul Looking Upstream
Mississippi River, Left Bank
Downtown St. Paul Looking Downstream
Mississippi River, Left Bank
St Paul Airport (circa 1943)
Temporary floodwalls are put up in area that is now flood fringe.
Potential to Increase CRS Credit:

- FEMA will investigate the possibility to provide CRS credit to those communities who obtain inundation mapping studies as a tool for flood risk mitigation.
- St. Paul could consider becoming a CRS community
Status Update

- Milestones Accomplished
  - SOW in progress with SJ team, IWR team
  - Developed a project time line
  - Identified current HEC-RAS model to be used as a basis for water surface profiles, modeling nearly complete
  - Investigating meaningful scenarios for HEC-RAS model
  - Gathering additional data needed for model, risk identification, and map production

- Challenges / Limiting Factors / Gaps
  - Sharing of digital source data/products across different agencies
  - HAZUS data base may not be the best to define detailed risk information/consequences at this level of investigation
  - Newer, better LIDAR data delayed progress of project