

National Flood Insurance Program (NFIP) and Flood Insurance Rate Map (FIRM)

City and County of San Francisco

October 22, 2007



Flood Insurance Rate Map (FIRM)

- FEMA manages the NFIP using a nationwide system of flood maps
- The FIRM:
 - Shows areas with 1% annual chance of flooding (100-year flood)
 - Includes bay and coastal flood hazards
 - Reflects current conditions
 - Does not reflect future conditions, such as sea level rise due to climate change
- Used as the basis for:
 - Insurance rating
 - Local floodplain management ordinance

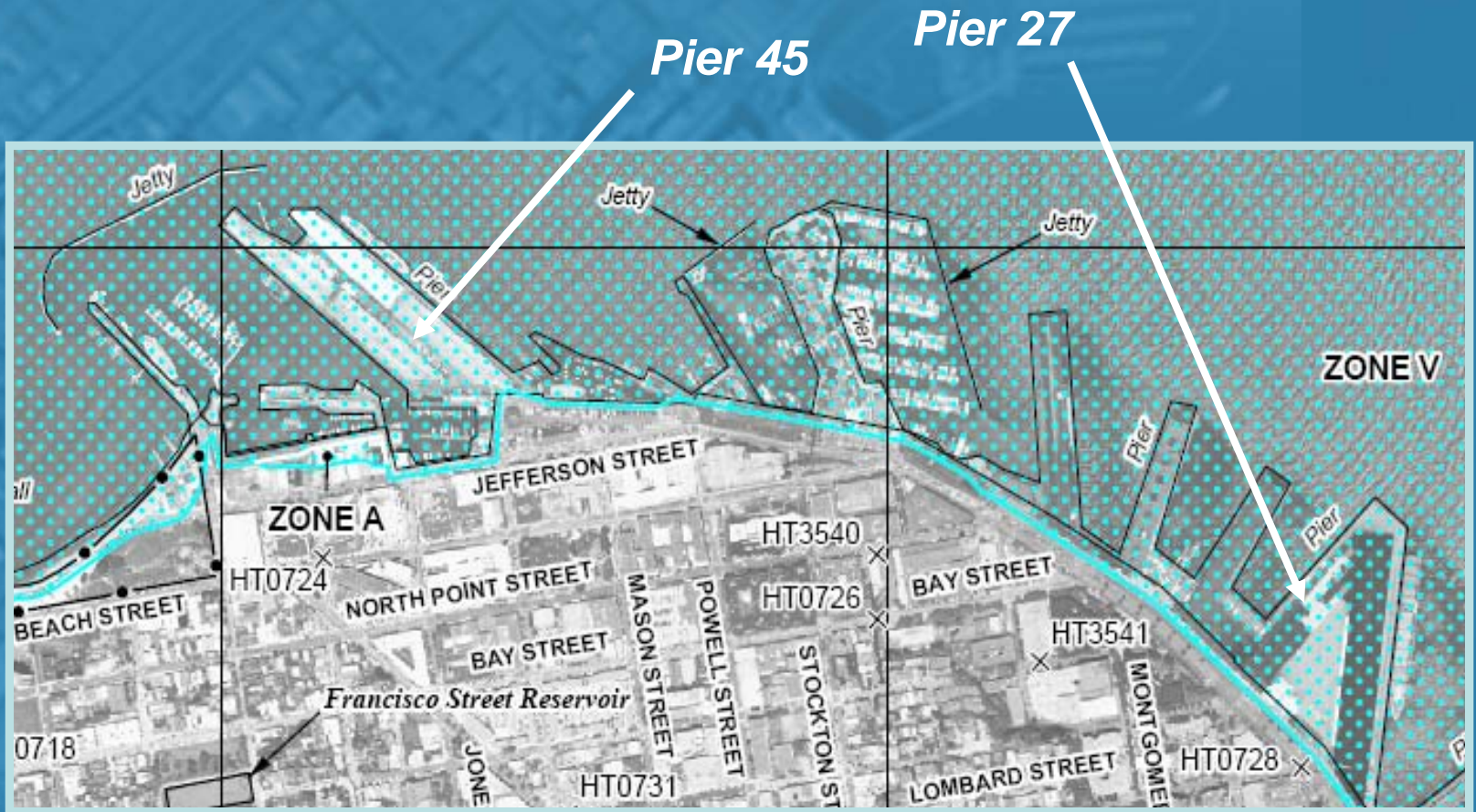


Flood Zones

- Flood zones shown on the preliminary FIRM for San Francisco:
 - Zone A: Area of coastal flooding with no wave hazard, or waves less than 3 feet in height
 - Zone V: Area of coastal flooding subject to wave hazards
 - Zone X: minimally floodprone



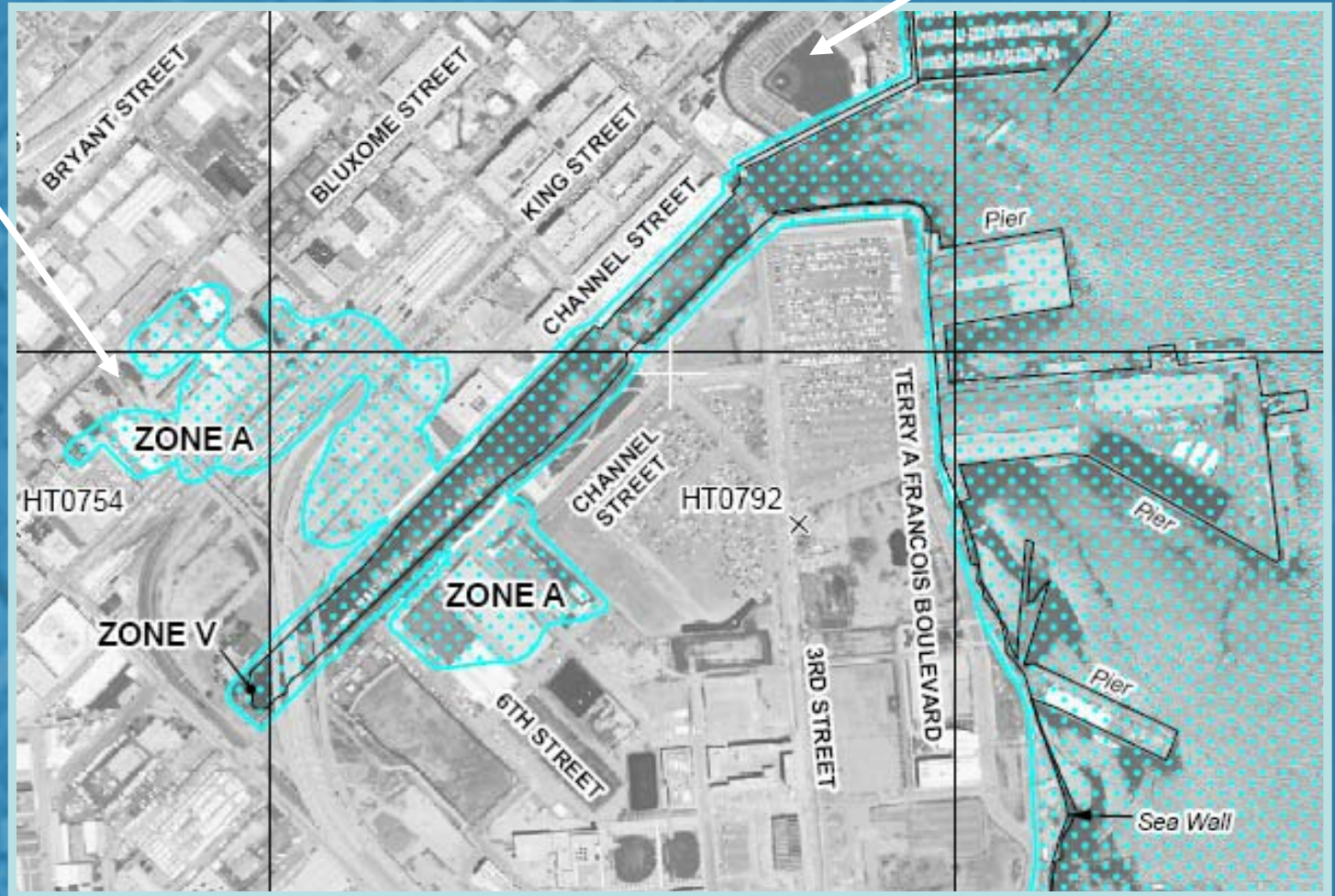
Flood Zones on Preliminary FIRM North Waterfront



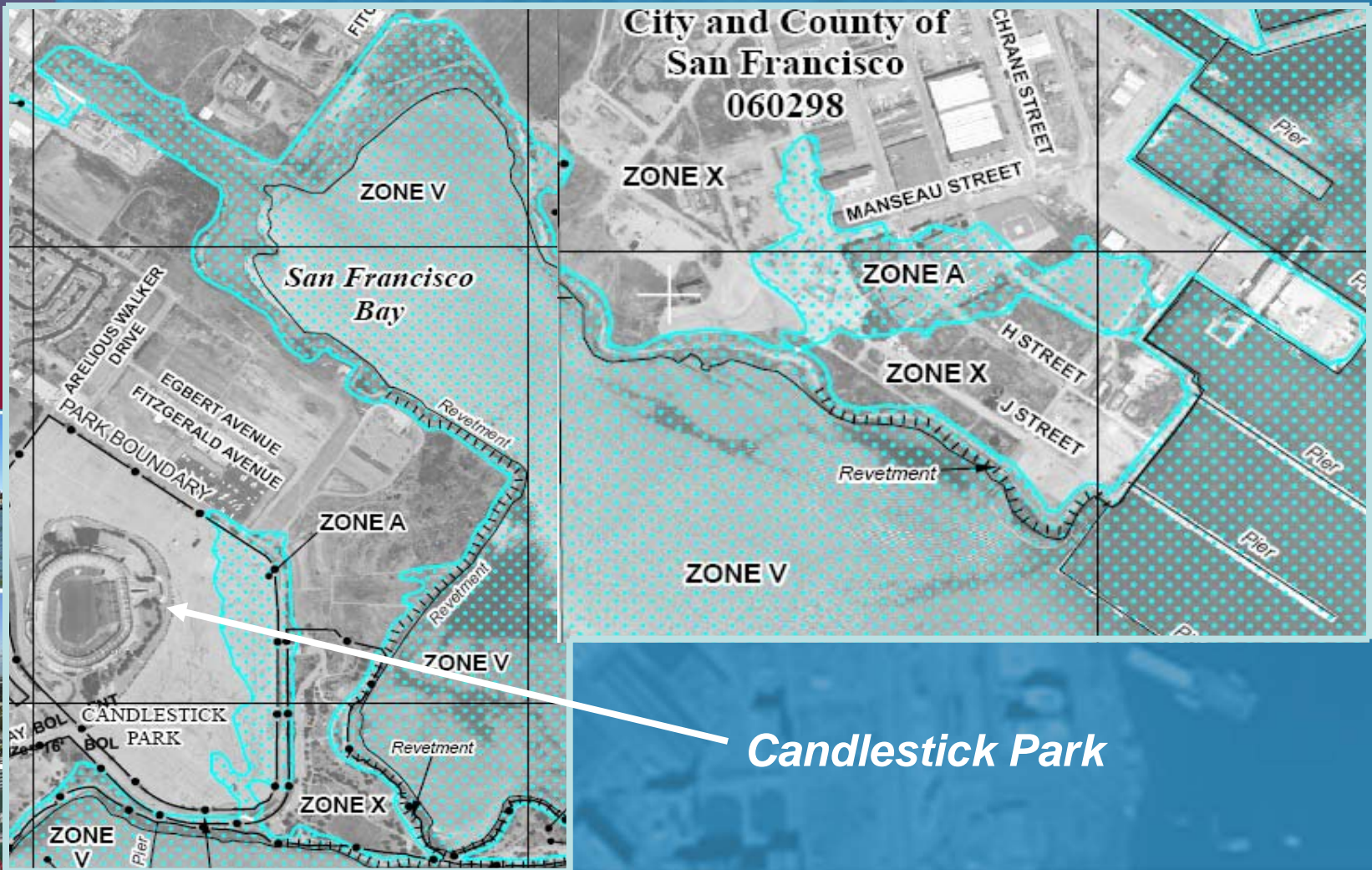
Flood Zones on Preliminary FIRM Mission Bay Area

Sixth Street
Off-Ramp

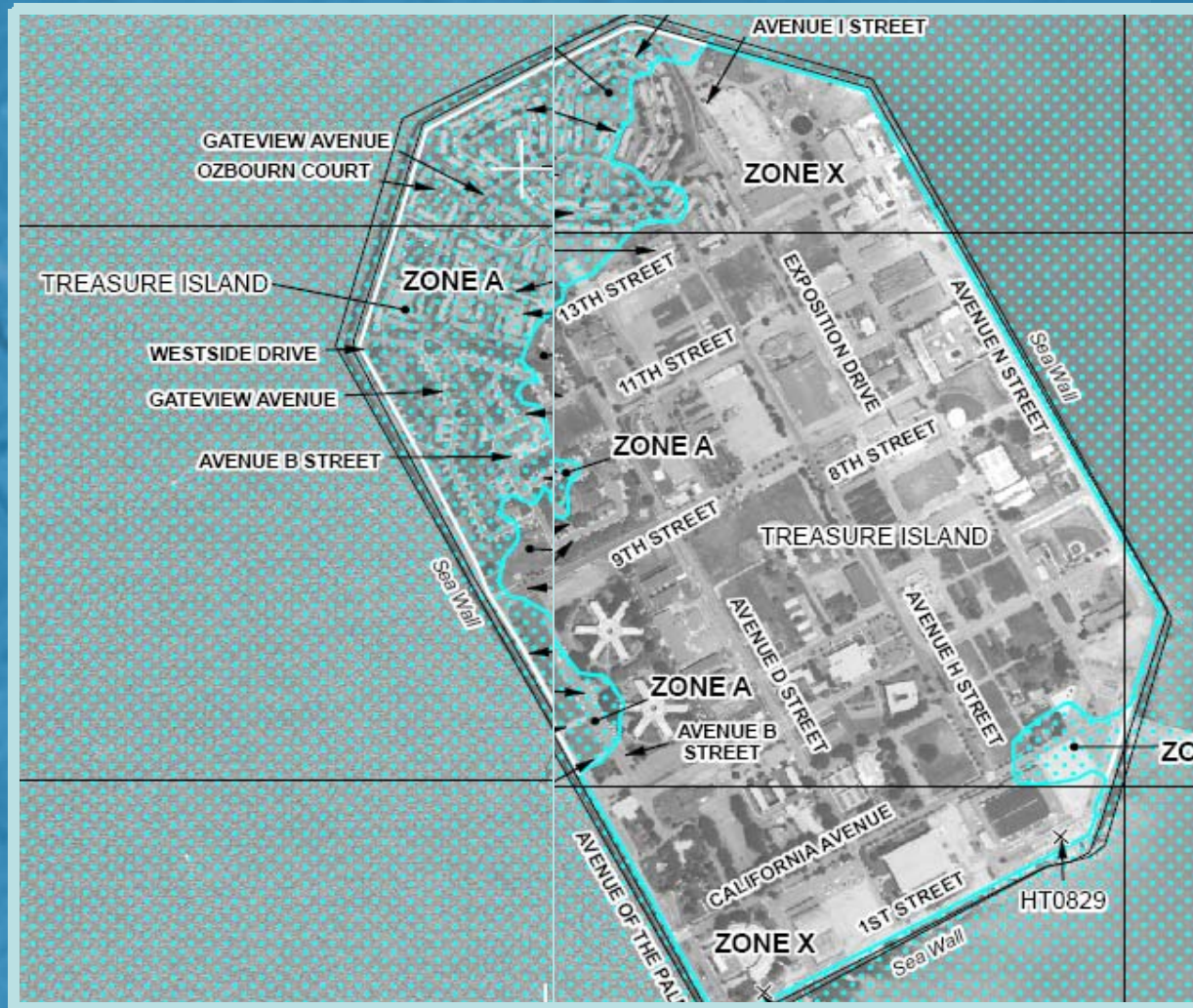
AT&T Park



Flood Zones on Preliminary FIRM Hunters Point/Candlestick Area



Flood Zones on Preliminary FIRM Treasure Island



Flood Zones on Preliminary FIRM Pacific Shoreline

Great Highway

Fort Funston



Basic Requirements

- New and substantially improved structures in flood zones must be:
 - Elevated to or above flood elevation
 - Designed below flood elevation to resist flood damage



Mission Bay Area

Protection of Structures in Zone A

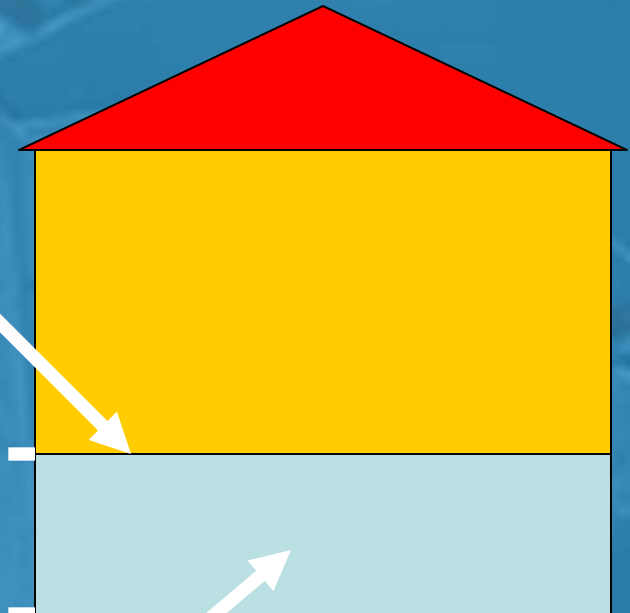
Residential Structures

Lowest floor of living space must be at or above flood elevation

Flood Elevation — — — — —

Ground Elevation — — — — —

Area below flood elevation must be constructed of flood-resistant materials



Protection of Structures in Zone A

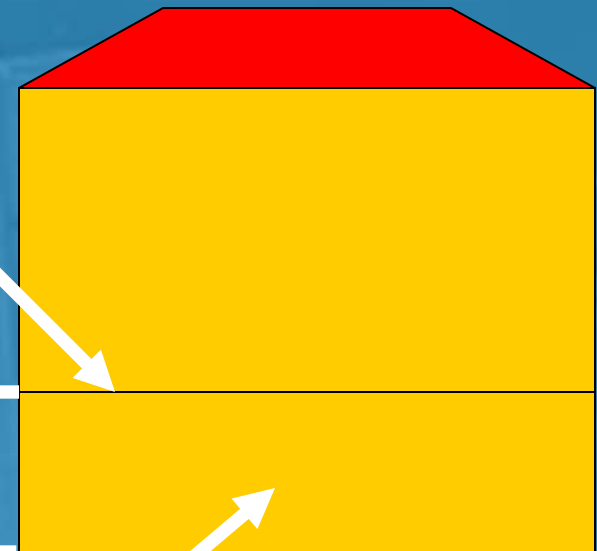
Commercial Structures

May be “floodproofed” to or above flood elevation

Flood Elevation — — — — —

Ground Elevation — — — — —

Area below flood elevation must be watertight



Protection of Structures in Zone V

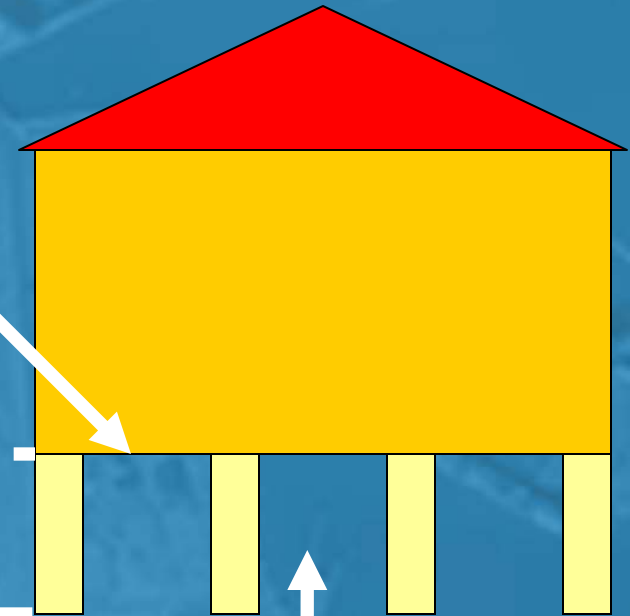
All Structures

Lowest horizontal member must be at or above wave height

Wave Height Elevation

Ground Elevation

Walls below wave height elevation must be constructed of breakaway materials



Basic Requirements

- No new construction or substantial improvement seaward of mean high tide in Zone V



Pier 27-31 Area



Strategies for Addressing Piers

- Variances can be implemented for:
 - Historic structures
 - “Functionally dependent” uses, e.g. maritime uses requiring proximity to water
- FEMA may consider map change to remove Zone V designation based on height of waves and structural integrity of piers



Implementation of Ordinance

- Identify structures/parcels located in flood zones
- Incorporate elevation requirements into permitting process for new or substantially improved structures
- Check design details for:
 - Proper elevation
 - Use of flood-resistant materials
 - Proper design/calculations for floodproofing
- Require preparation/submittal of Elevation Certificates documenting lowest floor elevations



Implementation of Ordinance

- City Administrator will serve as floodplain administrator
- City Attorney preparing floodplain management ordinance based on minimum NFIP criteria
- Procedures to be developed through collaboration among:
 - DBI
 - DPW
 - Planning
 - Port
 - PUC
 - Redevelopment
 - SFO
 - Treasure Island Project Office



Questions Regarding the FIRM and the NFIP:

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