



COCONINO
COUNTY ARIZONA

FLOOD CONTROL DISTRICT

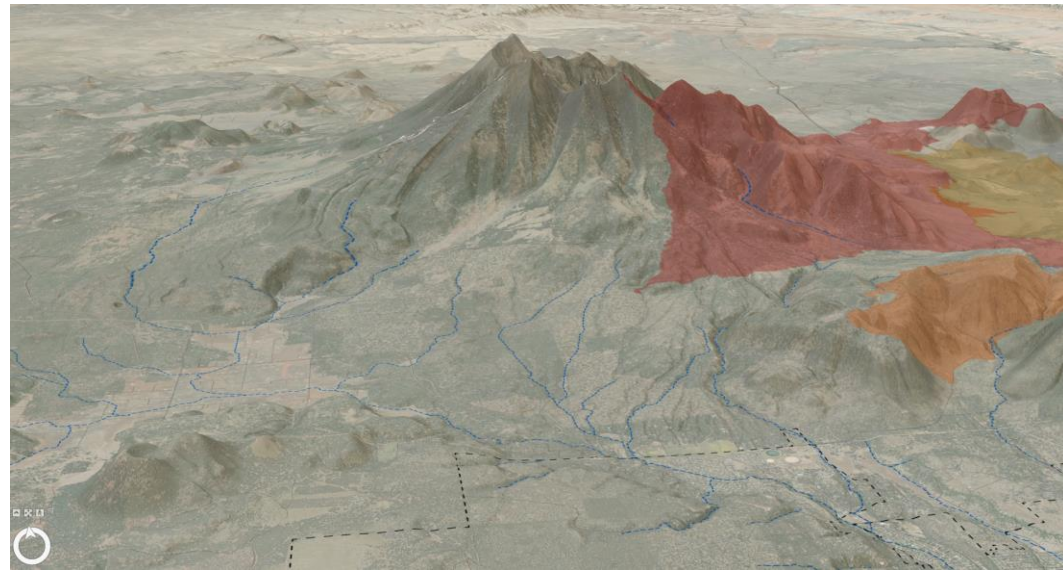
Upper Rio de Flag Post-Wildfire Flood Study

Joe Loverich, P.E.
J.E. Fuller Hydrology

City/County Joint Meeting
March 6, 2023

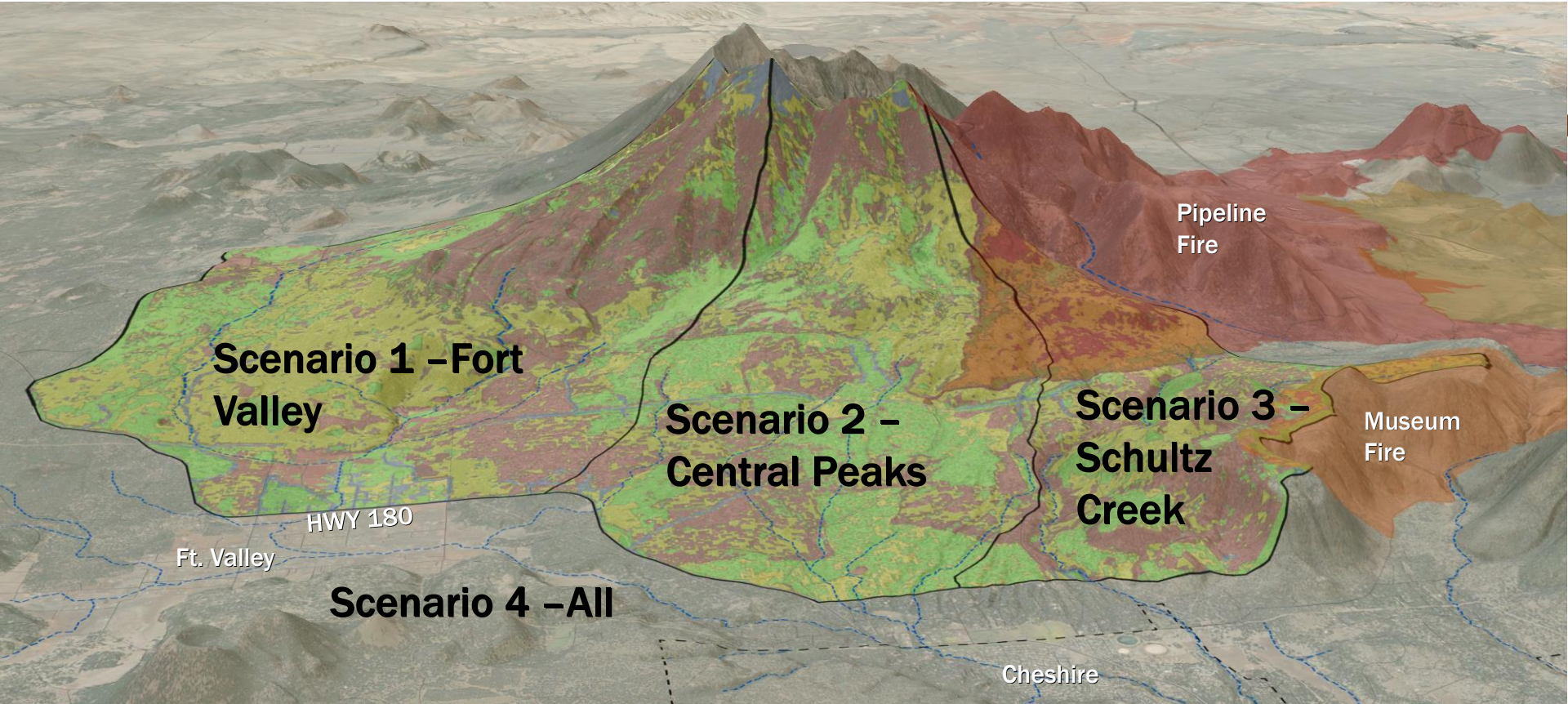
Objectives of Study

- Determine potential burn severity of the south side of the Peaks
- Determine potential flood risk to the County and City if all or portions of that area burn
- Continue development of post-fire flood risk modeling techniques
- Assist in determination of highest priority forest treatment areas



- Coordination with USFS, City of Flagstaff and other partners

Fire Modeling

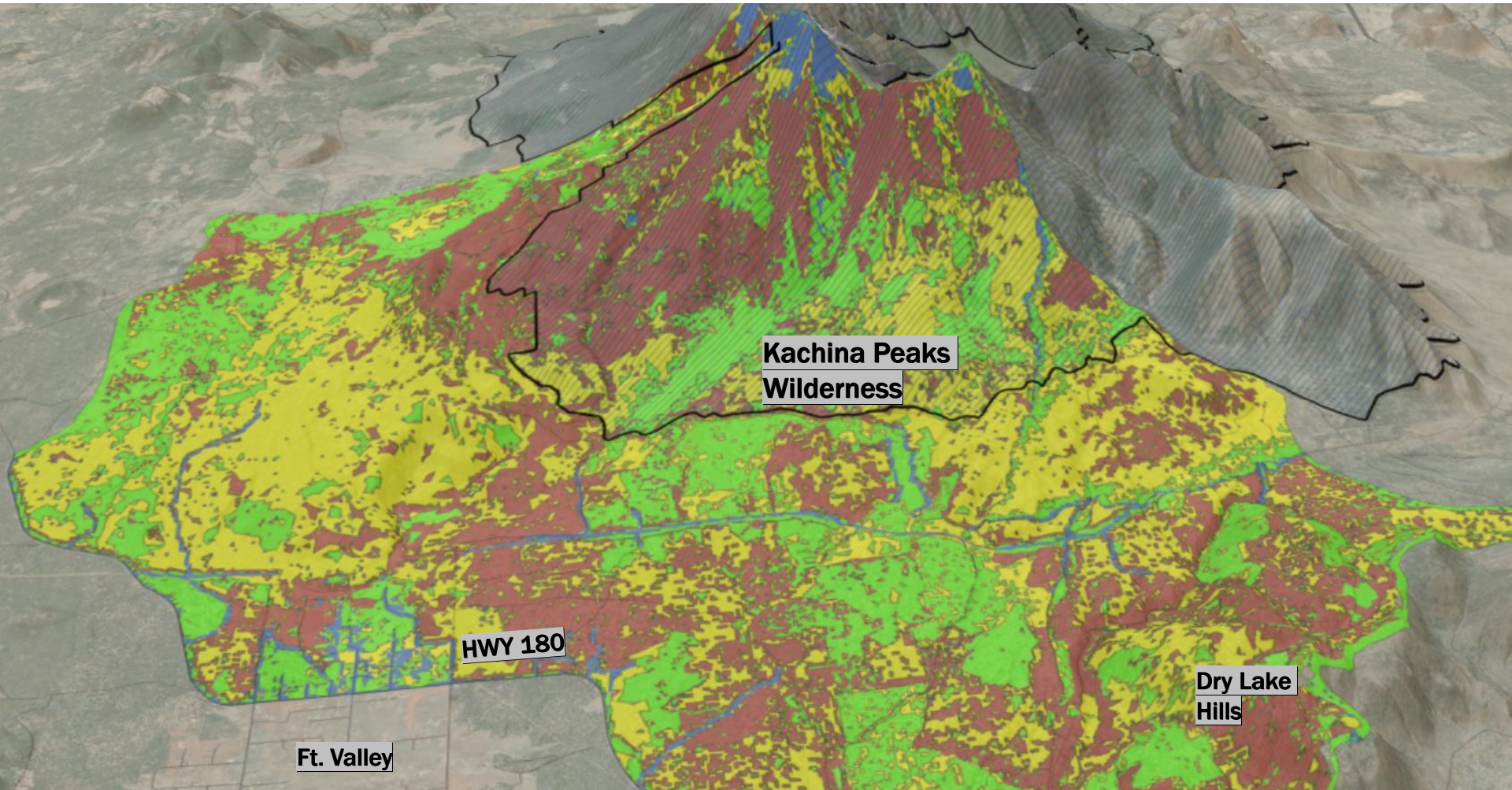


- Scenario 1 - 10,700 Acres**
- Scenario 2 - 6,800 Acres**
- Scenario 3 - 4,000 Acres**
- Scenario 4 - 21,500 Acres**

Comparison

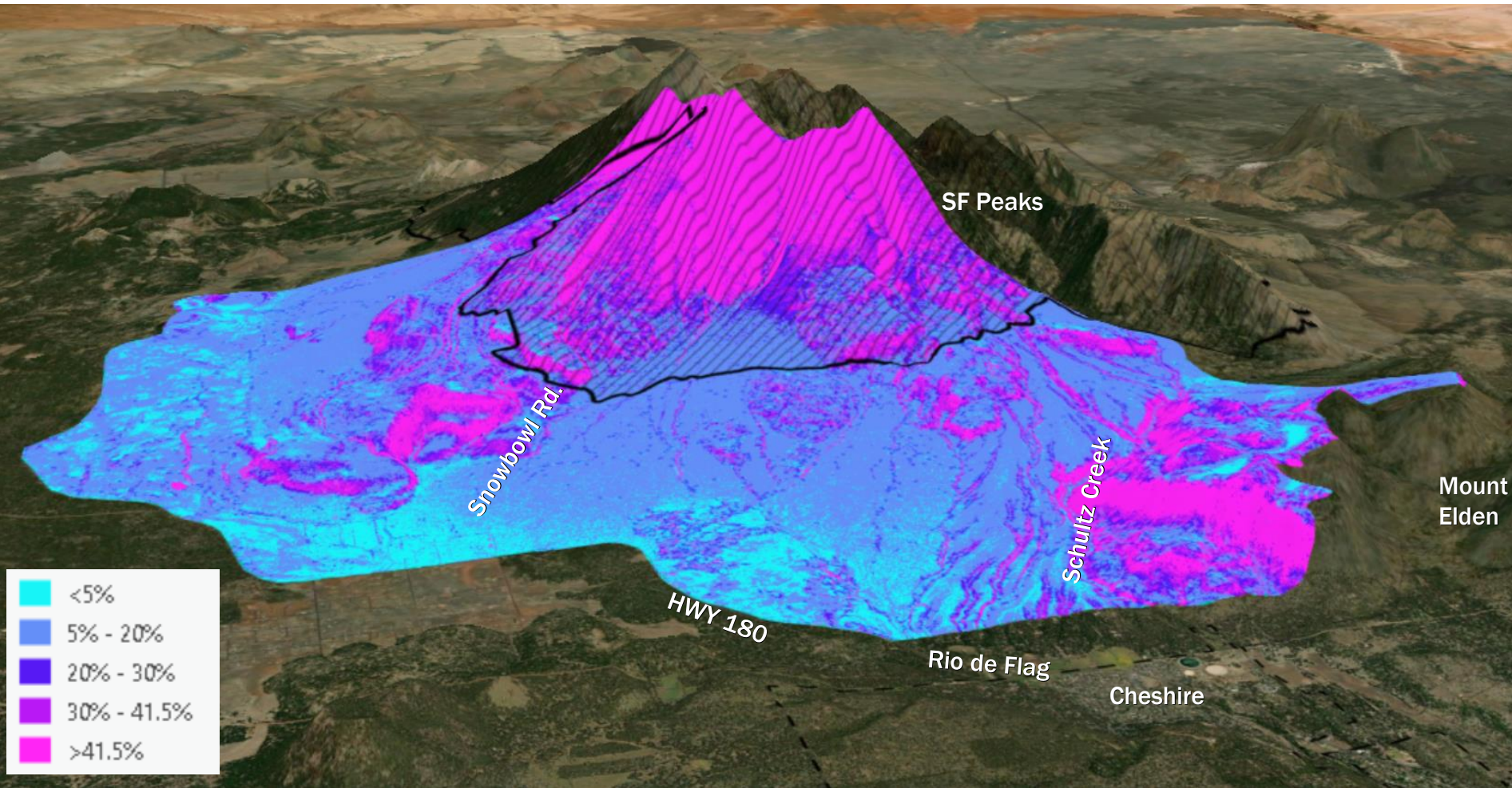
- Schultz - 15,000 Acres**
- Museum - 2,000 Acres**
- Tunnel - 19,000 Acres**
- Pipeline - 26,500 Acres**

Fire Modeling Details



Soil Burn Severity	Schultz/Pipeline Average	Modeled
Unburned	11.2%	4.4%
Low	18.6%	24.3%
Moderate	33.6%	38.3%
High	36.6%	33.0%

Slope Ranges





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Upper Rio de Flag Forest Restoration

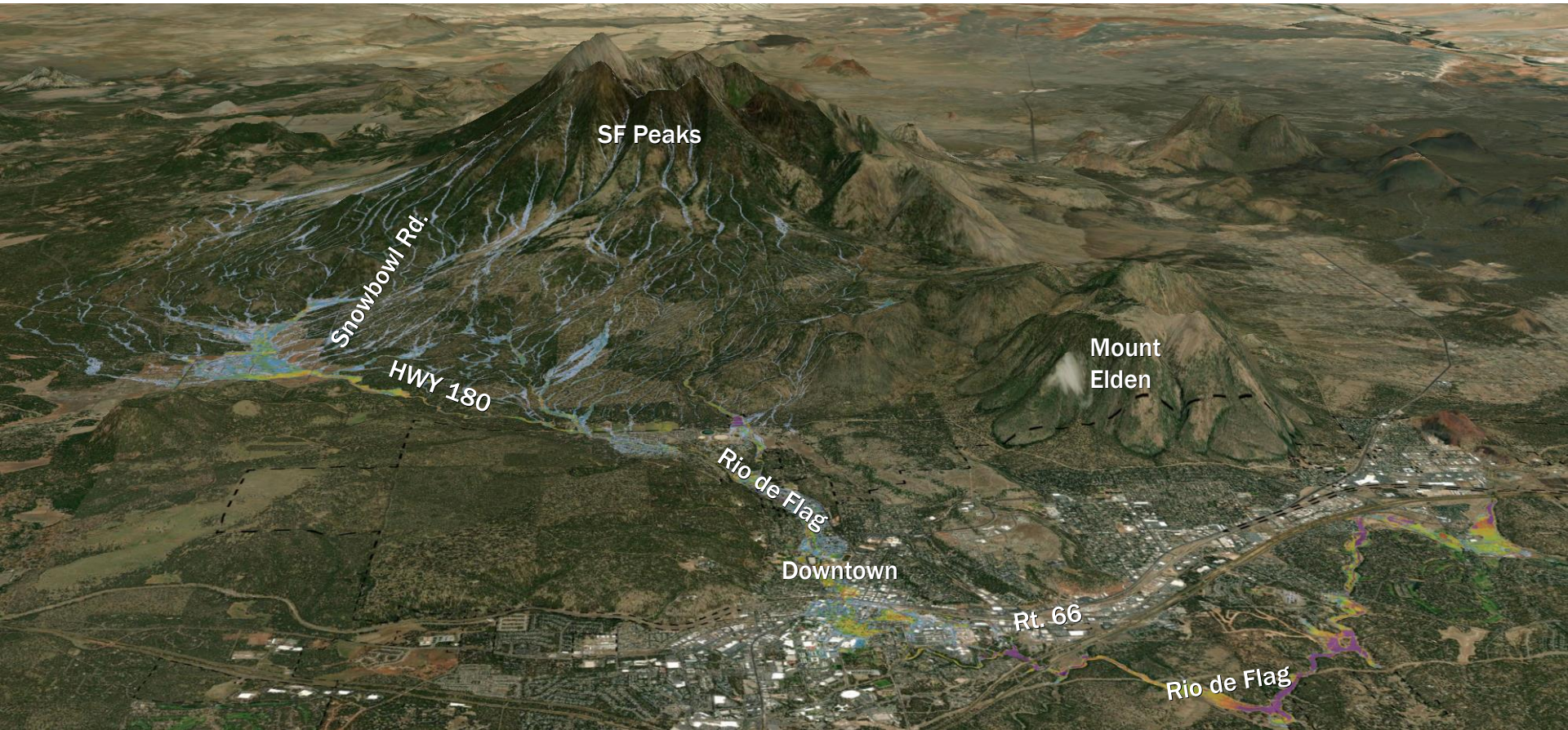
Jay Smith

Coconino County Flood Control District Forester

City/County Joint Meeting

March 6, 2023

Flood Modeling



Results are preliminary – Indications are a significant potential impact to City of Flagstaff

Economic Impact Study

	Low	High
Remediation	\$74,000,000	\$93,000,000
Flood Damages	\$93,000,000	\$124,000,000
BNSF Railroad Damages	\$12,000,000	\$23,000,000
I-40 Freight Delays (6 flood events/3 years)	\$27,000,000	\$53,000,000
Lost Property Value	\$24,000,000	\$27,000,000
Williams Water Supply	\$5,000,000	\$10,000,000
Mexican Spotted Owl	\$100,000	\$3,400,000
Communications Towers and structures	\$39,000,000	\$94,000,000
Revenue Loss - Fire event	\$1,200,000	\$11,900,000
Revenue Loss - Flooding events	\$13,000,000	\$72,000,000
Tourism Revenue Losses - reduced tourism demand	\$85,000,000	\$170,000,000
Sales Tax Revenue lost to all events	\$5,000,000	\$12,000,000
Total	\$379,000,000	\$694,000,000

NAU's Economic Policy Institute is conducting a post-wildfire economic impact study, similar to what they did for Bill Williams Mtn, for the Upper Rio Watershed

Proactive Implementation

- **Flood Control District's Forest Restoration Initiative 5-yr plan to invest ~ \$30 million on forest restoration treatments in Upper Rio**
- **Coconino National Forest is committing to focus on this priority fire-shed/watershed**
- **Coordinate with City of Flagstaff to expand FWPP further into Upper Rio**
- **Engage more partners like: AZDFFM, NFF, TNC and GFFP**

