



SEDONA-OAK CREEK
AIRPORT AUTHORITY

FIRE PROTECTION WATER SYSTEM MASTER PLAN

JUNE 22, 2020

OVERVIEW

- Existing Airport Water System Inventory, Mapping & Modeling
- Fire Flow Requirements Evaluation
 - Existing
 - 2017 Airport Master Plan Build-out
- Infrastructure Improvements Recommendations
 - Immediate
 - Intermediate
 - Long Term or Full Build-out
- Potable Water System Feasibility



KEY POINTS

- The existing fire protection system does not meet current requirements.
- Additional water storage and pumping capacity is required.
- Retrofitting existing buildings can reduce the pumping and storage requirements.
- Phased improvements to meet fire flow requirements were developed.
 - Immediate
 - Intermediate
 - Long Term



CIP RECOMMENDATIONS

Immediate Improvements:

- 150 kW Generator for backup power
- Additional 100,000 gallons water storage tank
- Upsize 1,200 feet of 12-inch water main

Conceptual Cost: \$1.1M



CIP RECOMMENDATIONS

Intermediate Improvements:

- Retrofit existing buildings with either automatic sprinkler systems or fire wall separation
- Booster Pump System Upgrades
- Extend fire protection system water mains to all existing buildings and hangars
- Add fire hydrants to meet minimum spacing requirements

Conceptual Cost: \$1.4M

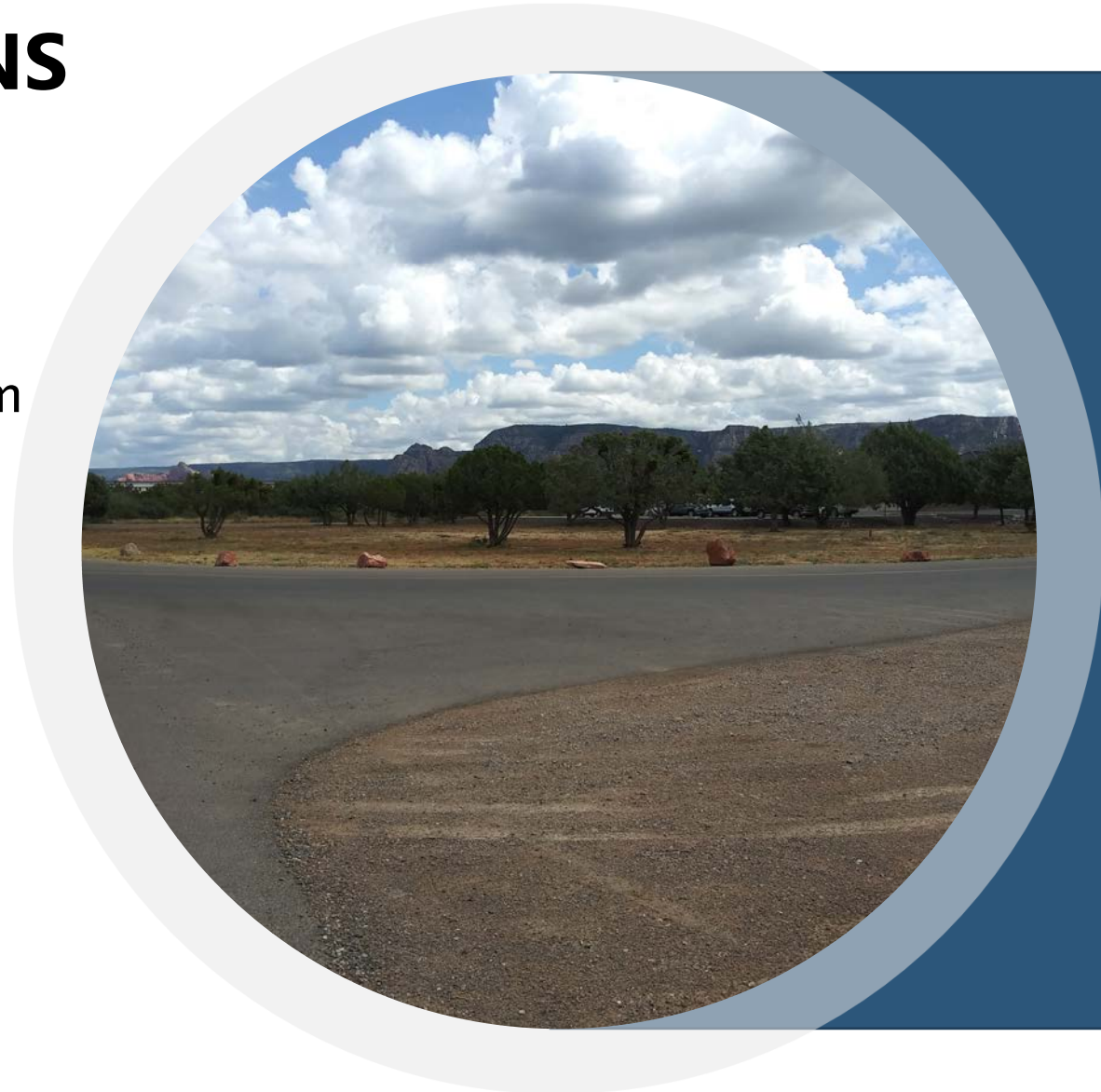


CIP RECOMMENDATIONS

Long Term or Full Build-out Improvements:

- Extend fire protection water system and provide fire hydrants to new developments

Conceptual Cost: \$725k



POTABLE WATER SYSTEM FEASIBILITY

The CIP Recommendations are compatible for future conversion to a potable water system.

Short Term:

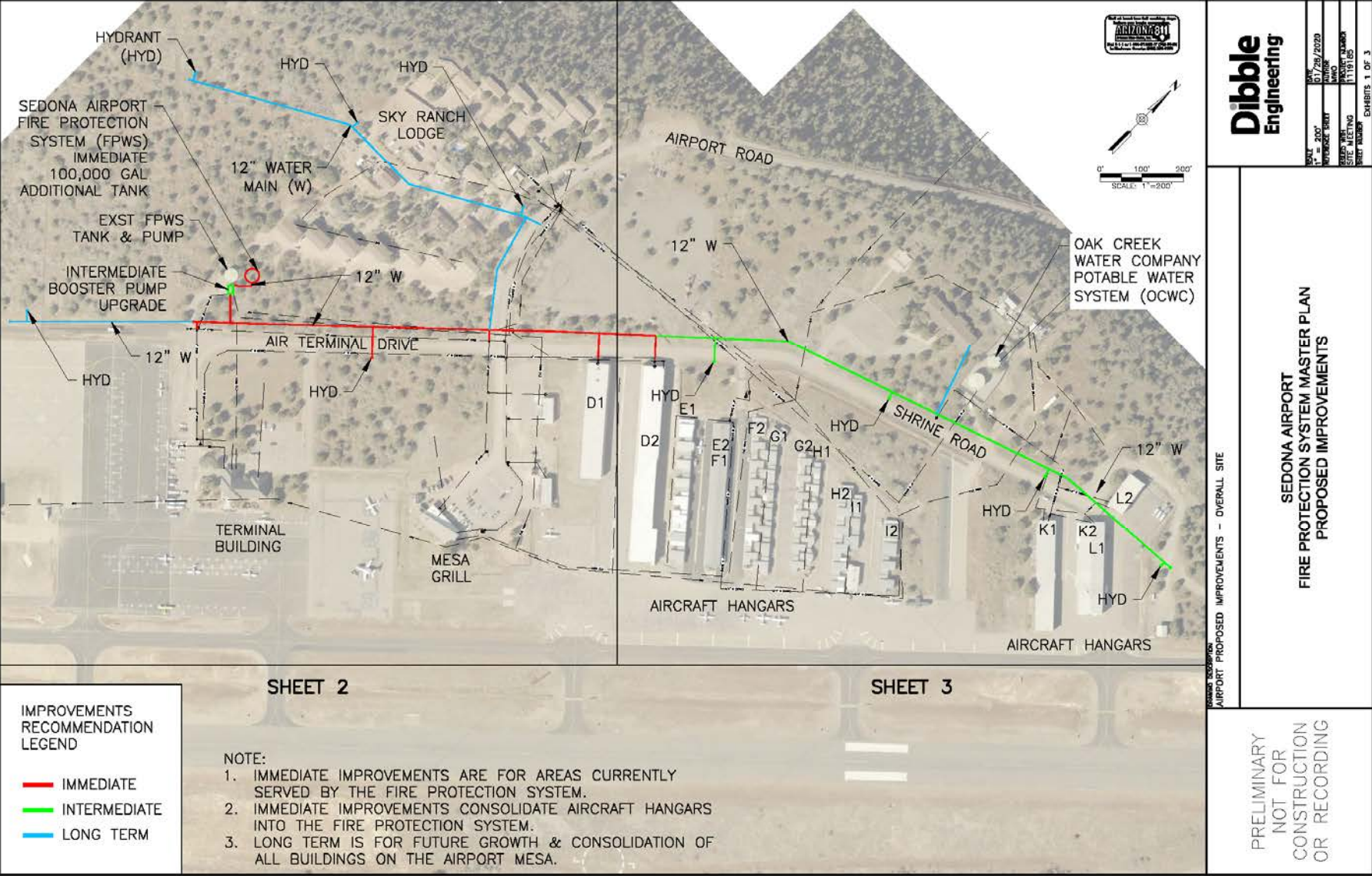
- Well Water Quality & Well Capacity Testing
- Conceptual Cost - \$85k

Long Term or Full Build-out:

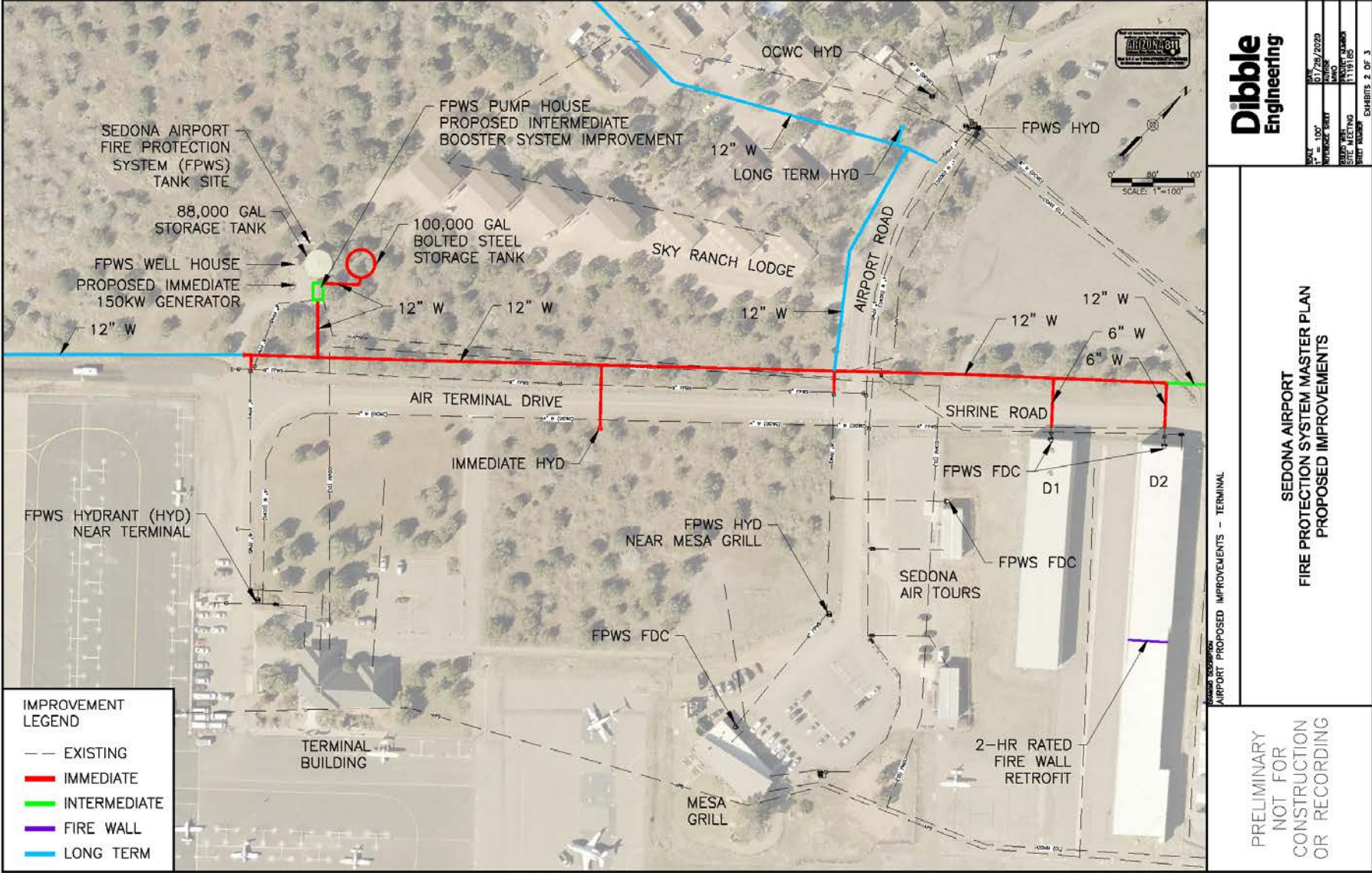
- Development of Potable Water System
- Conceptual Cost - \$2.8M - \$5.1M



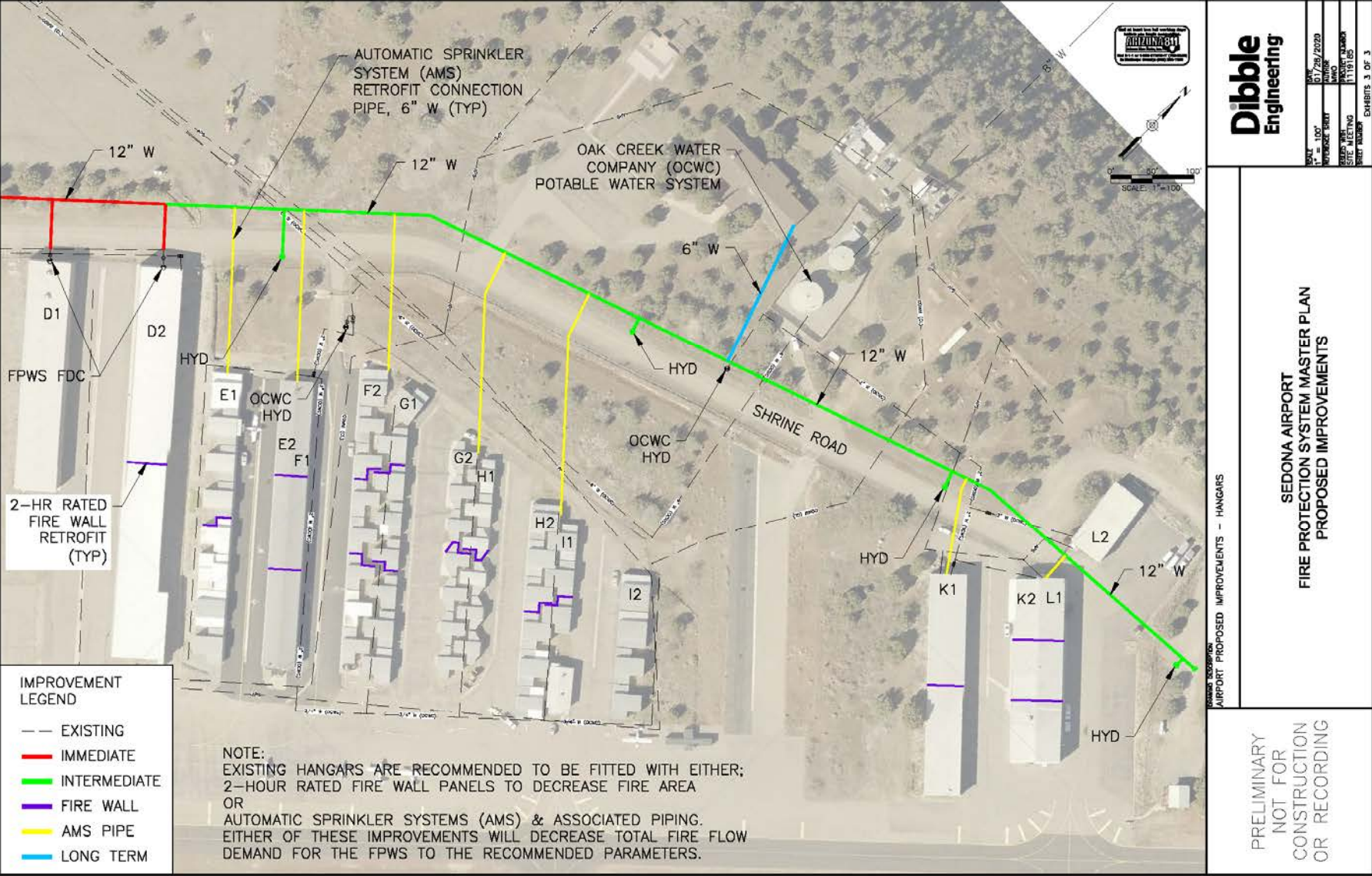
IMPROVEMENTS EXHIBIT 1



IMPROVEMENTS EXHIBIT 2



IMPROVEMENTS EXHIBIT 3



FIRE FLOW REQUIREMENTS: CURRENT & PROPOSED

Building Designation	Building Area (ft ²)	Current Conditions & Requirements				After Recommended Improvements							
		Existing Single Fire Area (ft ²)	IFC Requirements			New Single Fire Area (ft ²) w/ Firewall Retrofit	IFC Requirements			Single Fire Area (ft ²) w/out Firewall Retrofit	NFPA 13 Requirements		
			Site Demand (GPM)	Fire Flow Duration (hours)	Site Storage (Gallons)		Fire Flow Demand (GPM)	Fire Flow Duration (hours)	Total Storage (Gallons)		Sprinkler Demand (GPM)	Sprinkler Duration (min)	Sprinkler Storage (Gallons)
Hangar D1	13,200	13,200	1,500	2	180,000	13,200	1,500	2	180,000	13,200	1,800	30	54,000
Hangar D2	25,800	25,800	1,500	2	270,000	13,000	1,500	2	180,000	25,800	1,800	30	54,000
Hangar E1	9,500	9,500	2,000	2	240,000	4,800	1,500	2	180,000	9,500	1,800	30	54,000
Hangar E2/F1	13,000	13,000	2,500	2	300,000	4,500	1,500	2	180,000	13,000	1,800	30	54,000
Hangar F2/G1	17,000	17,000	2,750	2	330,000	5,700	1,500	2	180,000	17,000	1,800	30	54,000
Hangar J1	10,000	10,000	2,000	2	240,000	4,900	1,500	2	180,000	10,000	1,800	30	54,000
Hangar J2	10,000	10,000	2,000	2	240,000	5,500	1,500	2	180,000	10,000	1,800	30	54,000
Hangar J3	10,000	10,000	2,000	2	240,000	4,900	1,500	2	180,000	10,000	1,800	30	54,000
Hangar K1	11,200	11,200	2,250	2	270,000	5,600	1,500	2	180,000	11,200	1,800	30	54,000
Hangar K2/L1	14,500	14,500	2,500	2	300,000	5,000	1,500	2	180,000	14,500	1,800	30	54,000
Hangar L1	3,800	3,800	1,500	2	180,000	3,800	1,500	2	180,000	3,800	-	-	-
Masonic Lodge	7,800	7,800	1,750	2	210,000	3,900	1,500	2	180,000	7,800	1,800	30	54,000
Mesa Grill	4,600	4,600	1,500	2	180,000	4,600	1,500	2	180,000	4,600	Existing		
Terminal	6,700	6,700	1,500	2	180,000	6,700	1,500	2	180,000	6,700	Existing		

CURRENT FIRE FLOW DEMAND: 2,750 GPM
CURRENT STORAGE: 330,000 GALLONS

PROPOSED FIRE FLOW DEMAND: 1,800 GPM
PROPOSED STORAGE: 180,000 GALLONS



QUESTIONS