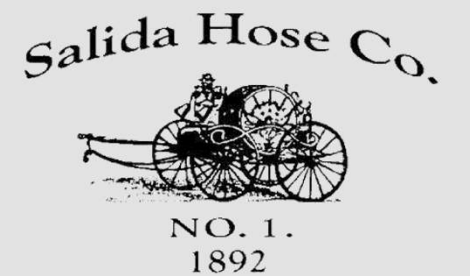


Salida Fire Station



Project Context July 2022

- Current and future needs for fire department
- Enhances the health & well-being of firefighters
- Functions with current & future fire apparatus
- Enhancement of employee retention & recruitment
- Onsite training for situational preparedness
- Efficient with space
- Architecture – Modern with respect to history
- Effective use of taxpayer funds



West Elevation



East Elevation

Elevations

1 Admin & Museum

2 Living Quarters

3 Lockers & Decon

4 Apparatus Bays

5 Hose Tower

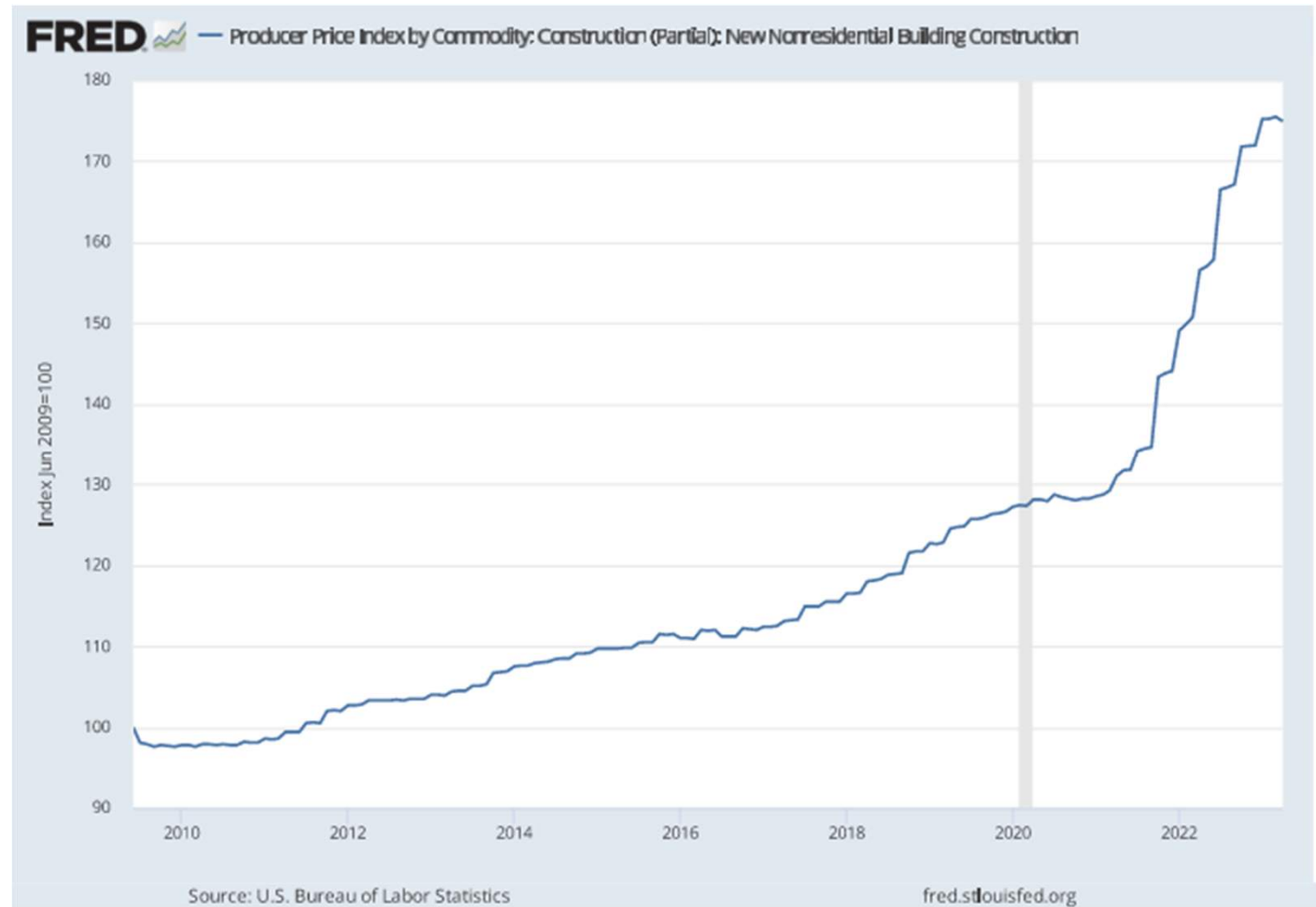
Floor Plan

^ North

1" = 30'



Commodity Trends



Climate Action Plan Alignment

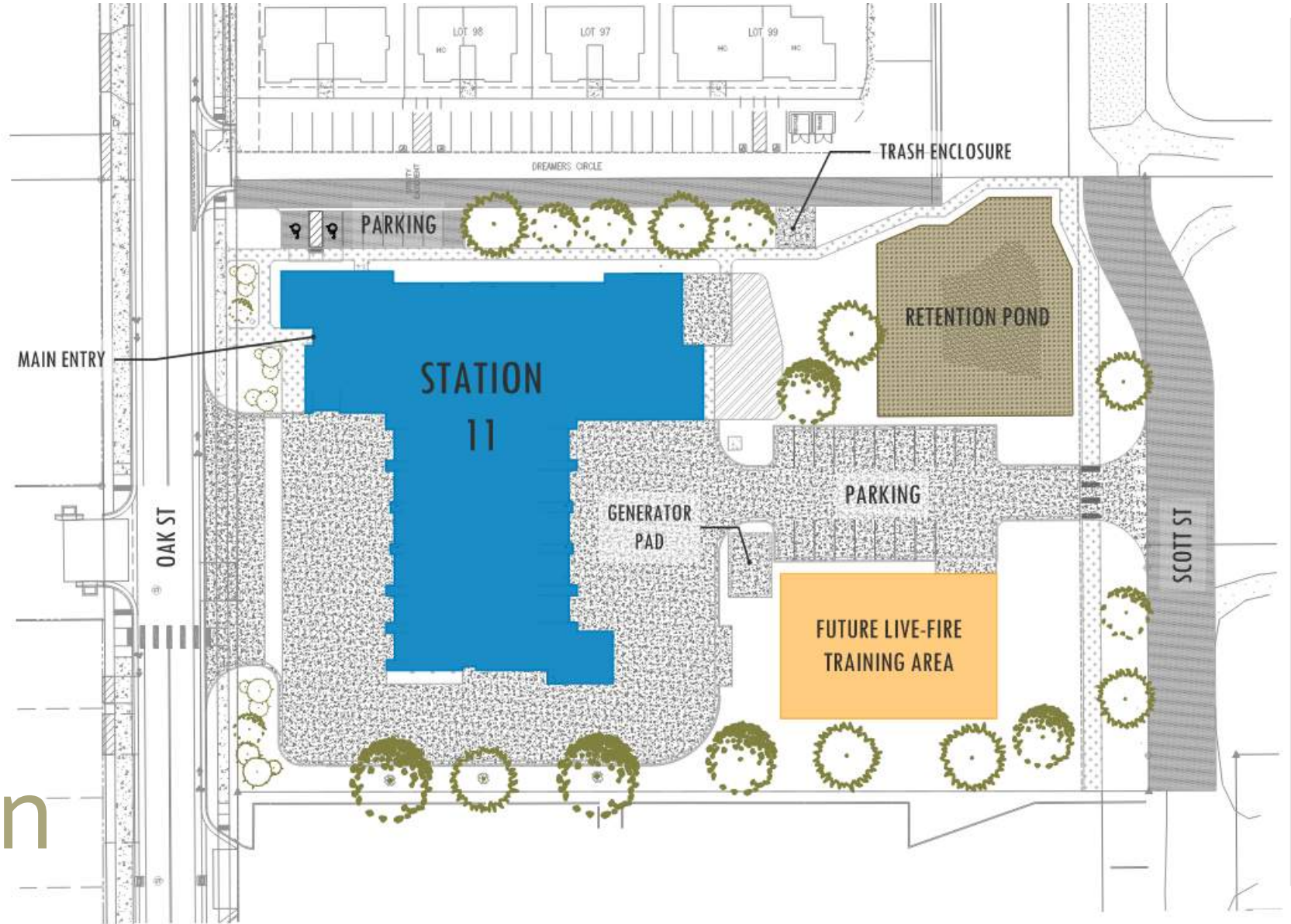
- Designed in compliance with 2021 IECC (energy code)
- High-efficiency heating and AC systems
- Natural Daylighting
- Space for composting and recycling
- Designed for future EV charging stations
- Integration of bike racks and bike trail
- Designed for future roof mounted solar panel array

Solar Energy Options

- Maximize solar energy production on site
 - Roof top system
 - ~60 kW capacity
 - The building is currently designed to be install ready.
 - Ground mounted system over the retention pond
 - ~30-40 kW capacity
 - Parking canopies system
 - ~20 kW capacity
- Solar array options can be added on later.
- Capital costs can be supplemented by grant funding.

Site Plan

^ North



Geo-exchange system

- High volume aquifer at 200'
 - Limits depth of wells
 - Shallower wells requires more wells to meet energy load
 - Increased number of wells covers entire site
 - Site design and costs
 - Logistics
- Site subsoil of cobble unstable
 - Wells need to be cased
- Cost prohibitive
 - Additional wells
 - Site costs
 - Casing wells

Alternative Option #1

- All Electric System
 - Electric boiler serving the hydronic in-floor radiant heat in the apparatus bay.
 - Possibility to use air-cooled heat pump serving the hydronic in-floor radiant heat in the apparatus bay. The air-cooled heat pump could utilize a hot water storage tank so water could be heated on off-peak electrical demand hours.
 - Air cooled Variable Refrigerant Flow (VRF) system serving the living and admin areas.
 - Generator – 500 kW (Already purchased)
 - Does not cover the entire building electrical load and we would need to reevaluate what building services can be supported.
- Estimated Costs
 - Higher capital investment cost
 - Higher monthly operating cost

Alternative Option #2

- Hybrid System
 - Replace the hydronic in-floor radiant heat system with gas fired overhead radiant heat system in the apparatus bays.
 - Air cooled Variable Refrigerant Flow (VRF) system serving the living and admin areas.
 - Generator – 500 kW (Already purchased)
 - Covers most of the building electrical load in a power outage
- Estimated Costs
 - Lower capital investment cost
 - Lower monthly operating cost

Baseline Sample System

- Natural Gas System
 - Gas fired overhead radiant heat system in the apparatus bays.
 - Gas fired Roof Top Units (RTUs) and Variable Air Volume (VAV) distribution serving the living and admin areas.
 - Generator – 500 kW (Already purchased)
 - Covers all the building electrical load in a power outage
- Estimated Costs
 - Lowest capital investment cost
 - Lowest monthly operating cost

Budget
Comparison

System	Total Project Cost	Avg Monthly Utilities
Electric	~\$16.6 - \$17.1 M	~\$2,000 - \$12,000
Hybrid	~\$16.1 - \$16.6 M	~\$2,000 - \$5,000
Natural Gas	~\$15.6 - \$16.1 M	~\$1,000 - \$3,000