



**CONCEPTUAL MASTER PLAN
THE RANCH EVENTS COMPLEX
12.14.2022**

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2. Context & Site Location
3. Proposed Master Plan
4. Arena & Hockey Center
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01/

Introduction

The Ranch

- Verify the required program for a new event arena and youth hockey training center
- Develop a concept plan for a new event arena and youth hockey training center
- Work collaboratively with private stakeholders and landowners to develop a plan that advances the mission of The Ranch and benefits the citizens of Larimer County
- Seek a highest and best land use solution
- Ensure the proposed plan conforms to The Ranch Design Guidelines

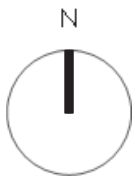
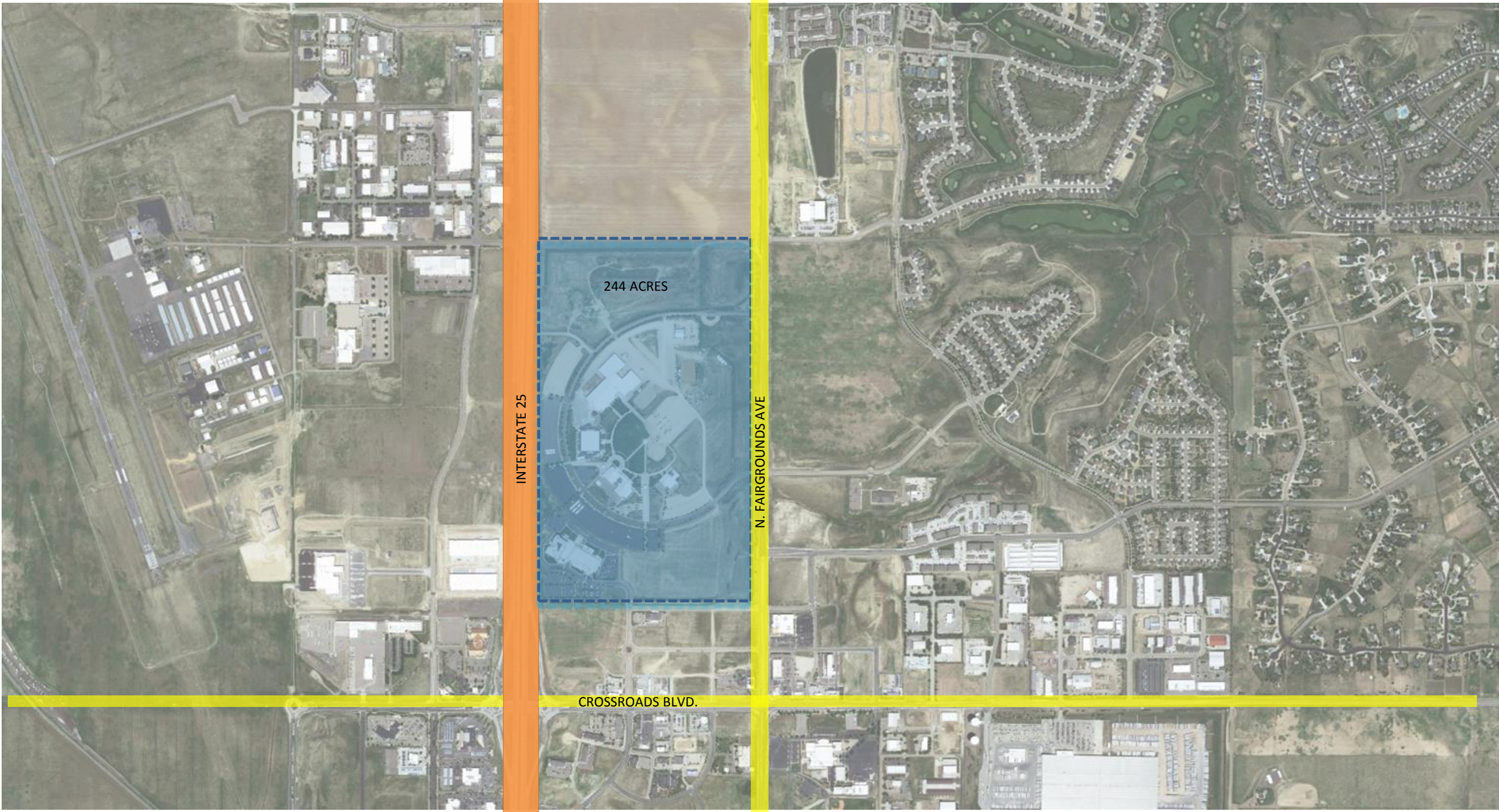


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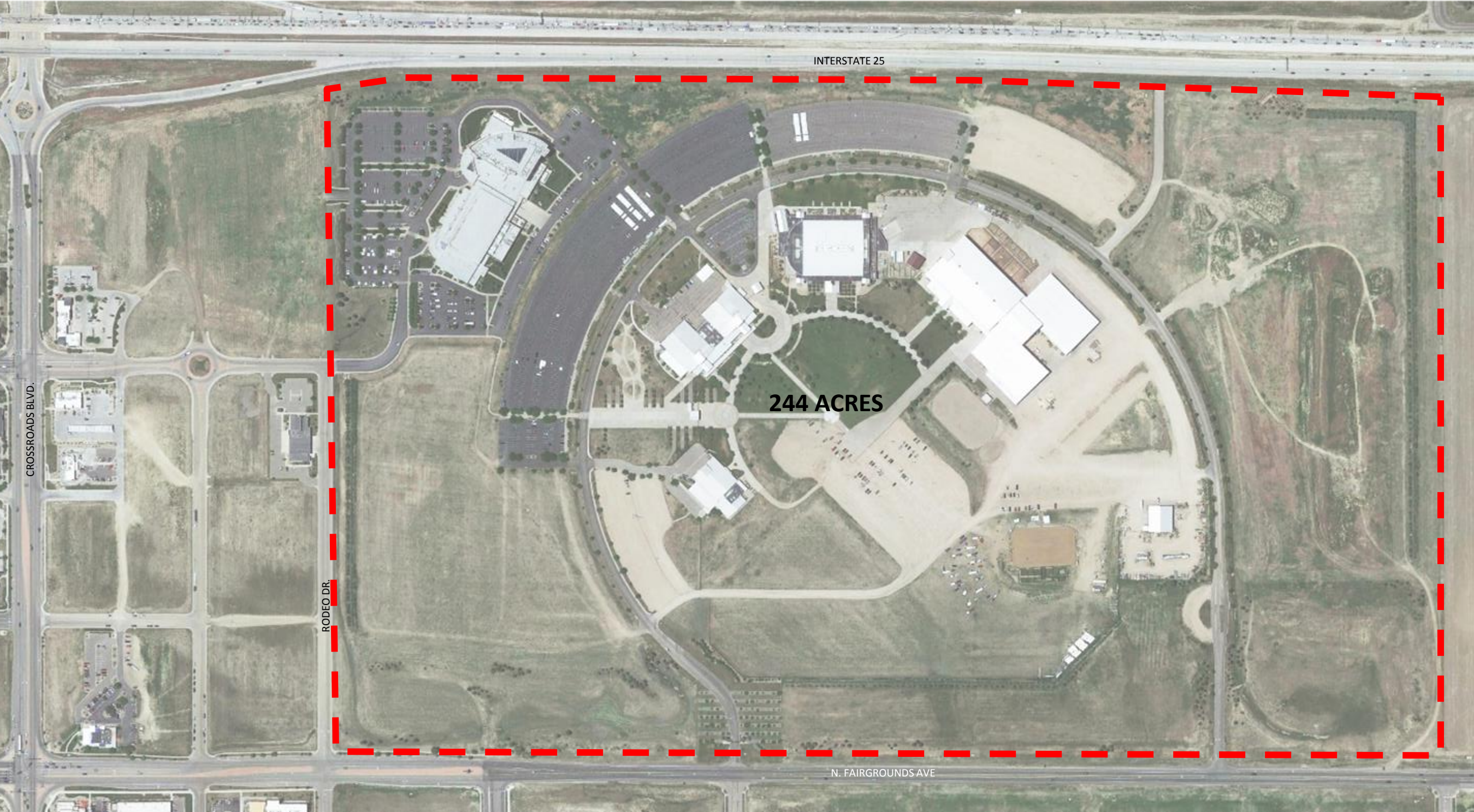
Context + Site Location

The Ranch

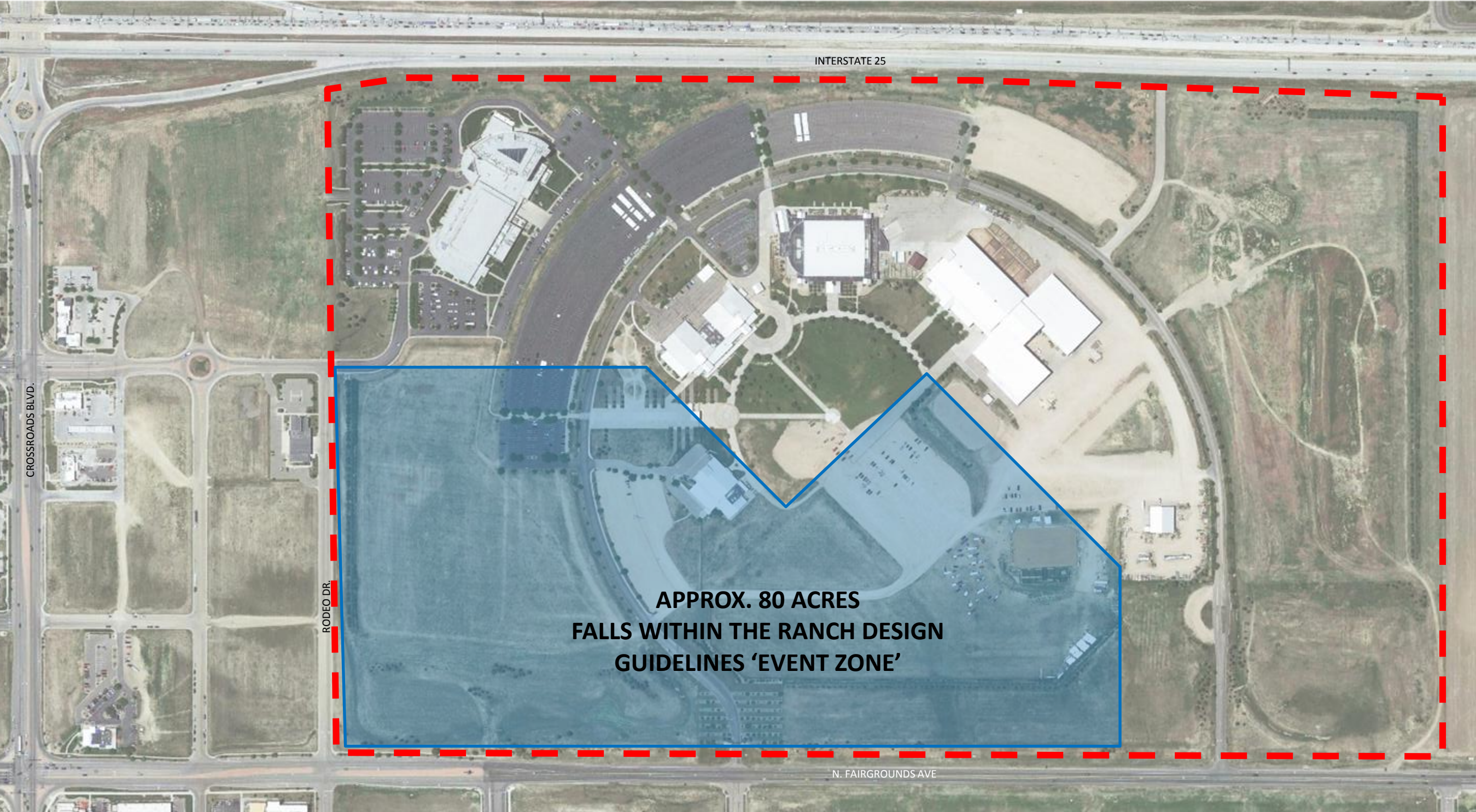
Context and Site Location: The Ranch Events Complex



Context and Site Location: The Ranch Events Complex Property Line



Context and Site Location: Area Subject to Master Plan Amendment





03/

Proposed Master Plan

The Ranch

Proposed Master Plan The Ranch Events Complex

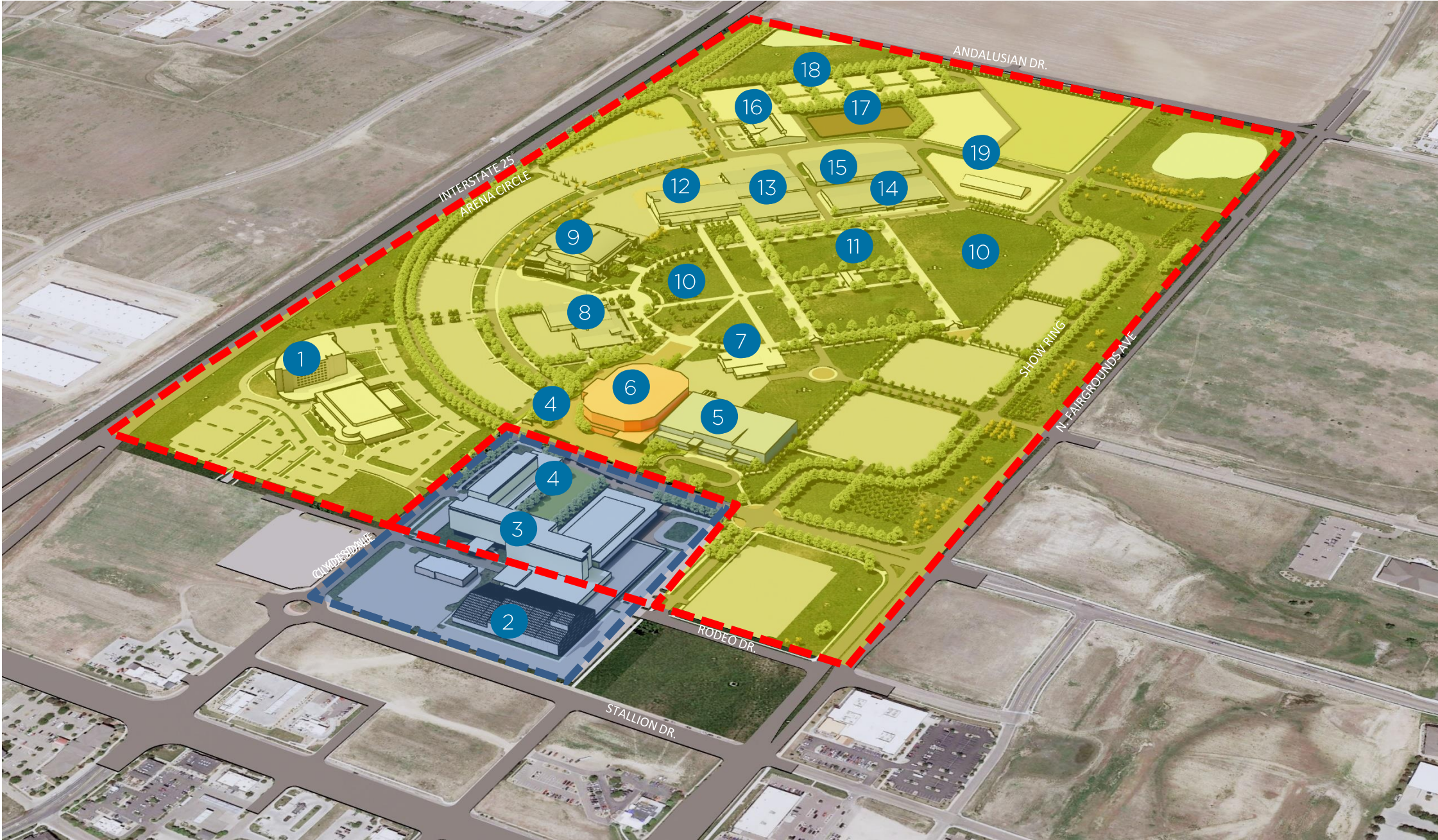


PLAN LEGEND

- 1. Embassy Suites
- 2. Indoor Water Park (Private Development)
- 3. Hotel / Expo Center (Private Development)
- 4. Proposed Event Plaza
- 5. Proposed Youth Hockey Training Center
- 6. Proposed Arena
- 7. McKee Building
- 8. FNBO Building
- 9. Budweiser Events Center
- 10. Event Lawn
- 11. Event Lawn Toilet Facilities (Future - Subject to Relocation)
- 12. MAC Equipment Indoor Arena
- 13. Equestrian Pavilions
- 14. Equine Event Arena (Future)
- 15. Stall Barn (Future)
- 16. 4-H Indoor Arena
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- 18. RV Parking
- 19. Maintenance Building



Project Site Plan: Public and Private Development



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- Public Development
- Private Development

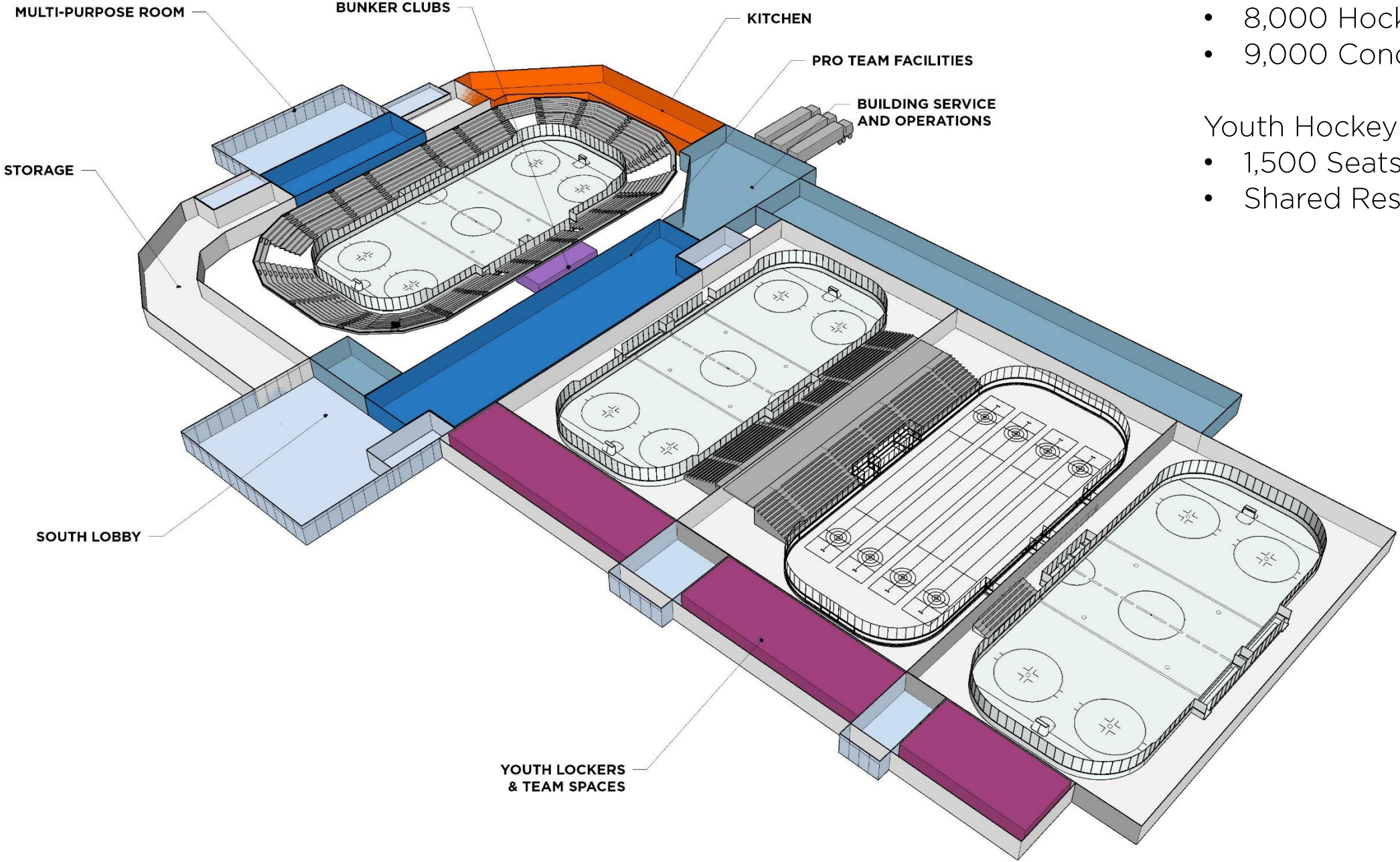


04/

Arena + Youth Hockey Center

The Ranch

Arena + Hockey Center: Event Level Concept Plan



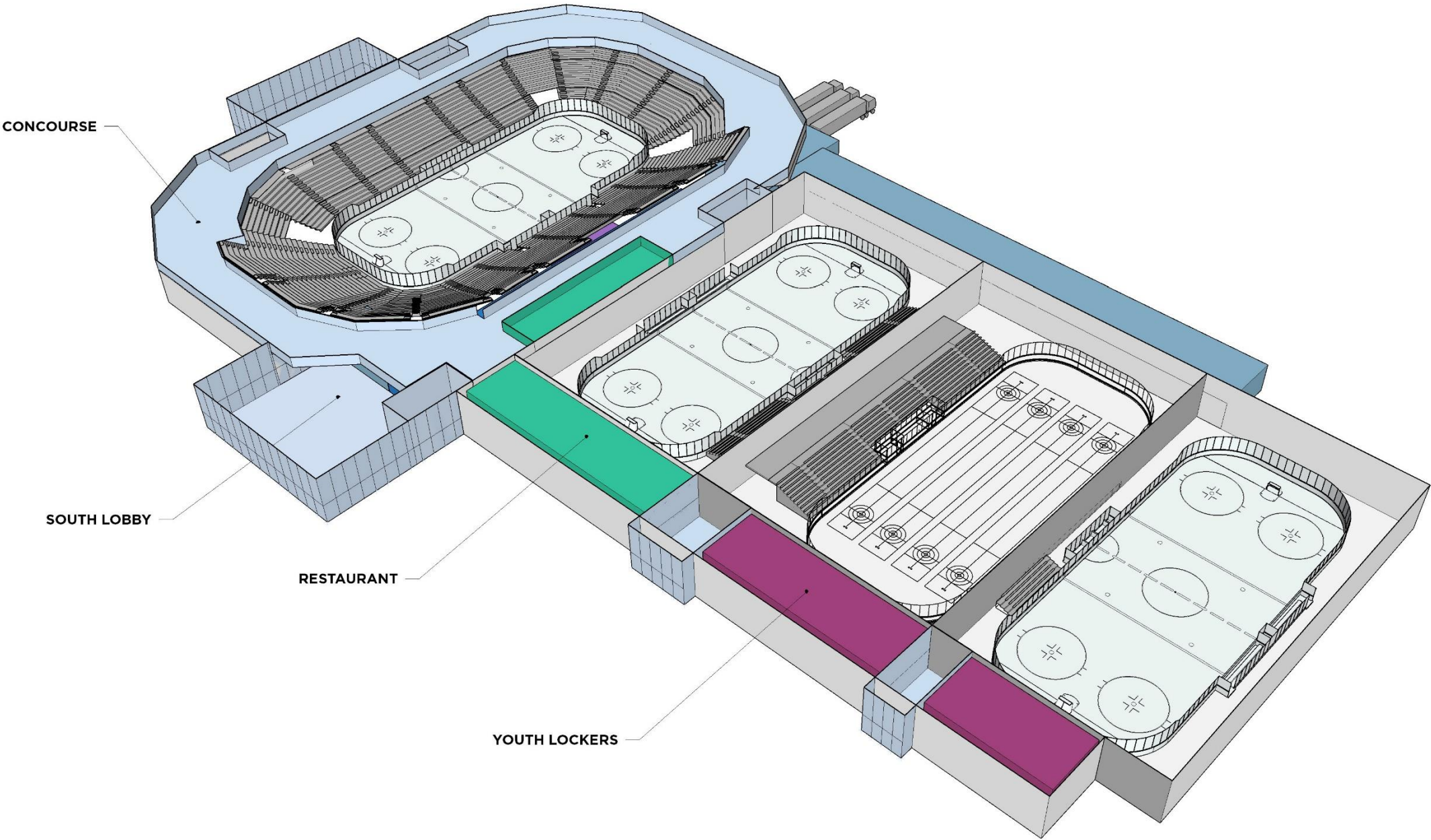
Arena Seating Including Suites:

- 8,000 Hockey
- 9,000 Concert

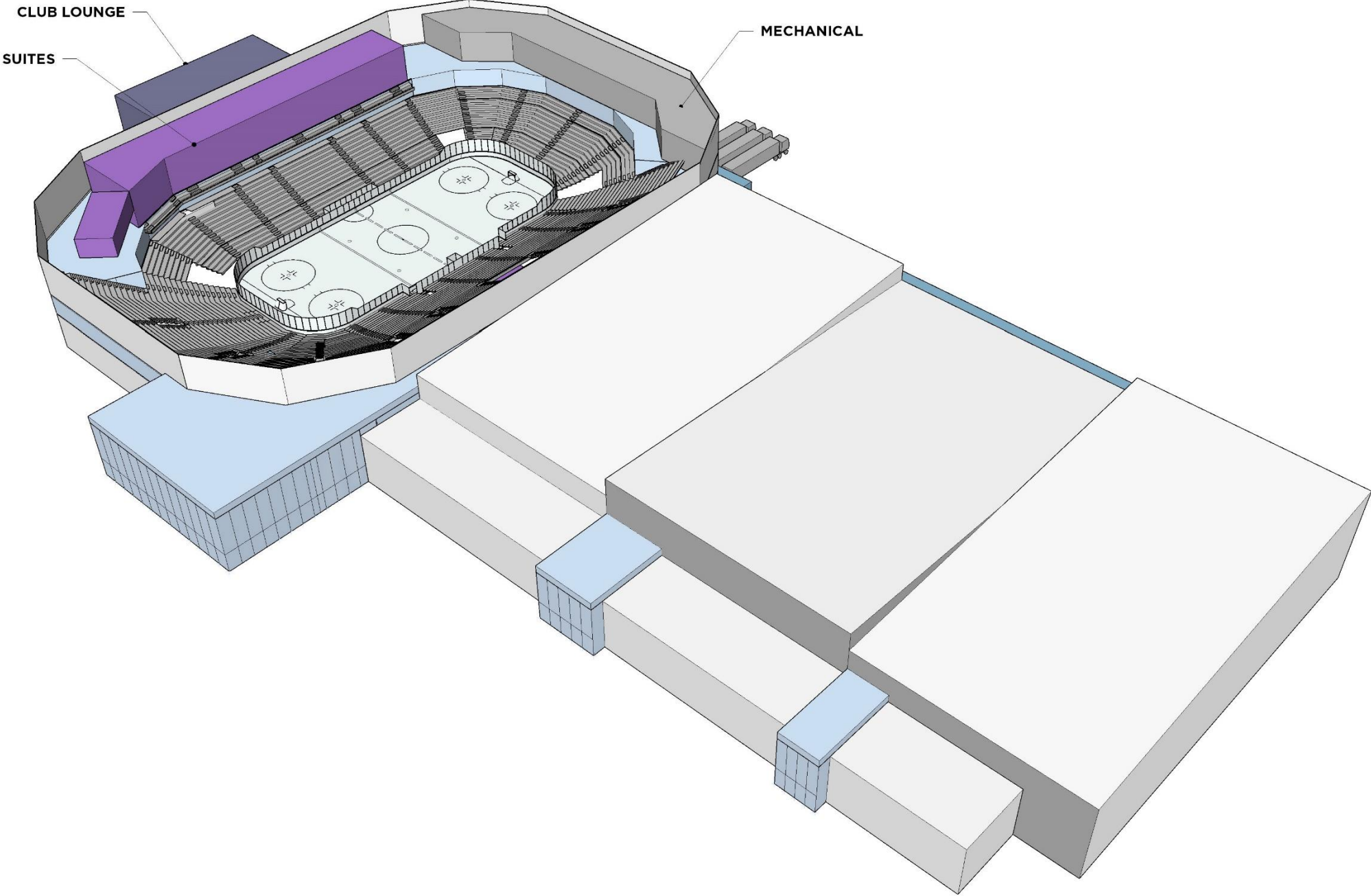
Youth Hockey Training Center:

- 1,500 Seats Total
- Shared Restaurant/Lounge

Arena + Hockey Center: Concourse Level Concept Plan



Arena + Hockey Center: Suite Level Concept Plan



Arena + Hockey Center: Arena Conceptual Rendering



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Proposed Master Plan Aerial Perspective Looking Southwest



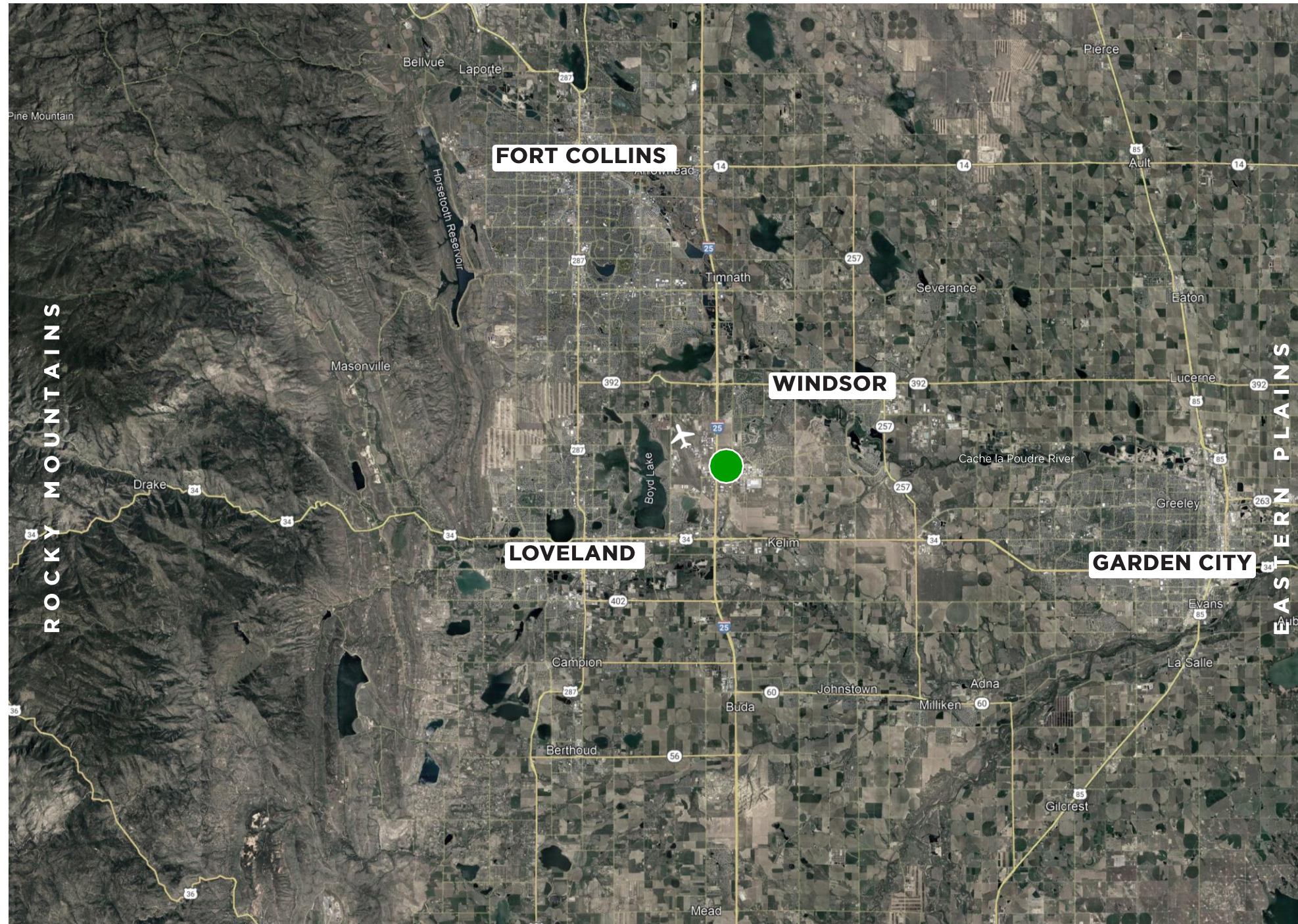
Proposed Master Plan Aerial Perspective Looking Southeast



Proposed Master Plan Aerial Perspective Looking Northwest



Sustainable **Community**



Regional Information:

360,000 Population Served in Larimer County
Suburban
Inland
Mountain / Plains

Site:

Previously Developed (site development, roads, parking, utilities in place)
Natural Resources (grassland / wetland detention basins)
Potential community assets (public event center / walking paths / open space)

Current Use:

Commercial Event Center
Public
Recreational / Community

Community Status

Community focused programming with large sport, entertainment, equestrian, expo, and fair events.

Community Engagement

Community engagement is expected to be high with county involvement.

Project Aerial Map - Transitional geography bordered by the Rocky Mountains & Eastern Plains, adjacent to I-25 corridor connecting Denver / Fort Collins and next to regional airport



Climate Pledge Arena, surrounding neighborhood, and adjacent public park and cultural spaces - Seattle WA

Current Use:

Open previously developed parcel in an events complex including equestrian, expo, entertainment, and sports facilities.

Proposed Program & Use:

+/- 8000 Seat Multi-use Hockey Arena +
Ice Center & Training Facility

Multi-functional Adaptive Space Opportunities

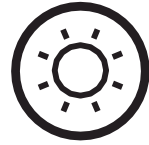
Community & Event rooms
Youth Training Programs

Building Type:

New Construction

Attributes of proposed program:

- Economic impacts increased hotel & restaurant activity
- Potential for community use spaces
- Attract cultural programming (concerts, shows, etc)
- Youth, High School, + Collegiate sports tournaments
- Walkable site
- Bicycle connectivity
- Compatibility with Neighborhood / Adjacent Uses



Optimize Massing & Orientation

Solar Radiation
Daylight & Glare
Daylight & Quality Views
Solar Control



Site Sustainability

Impervious Site Areas
Tree Canopy / Heat Island / Native Drought Resistant Plants
Bicycle Parking
Flood Risk
Stormwater / Future Climate
Water Recycling / Irrigation
Green Roof / Evapotranspiration / Stormwater Management



Enhanced Envelope & Materials

North, South, East, West Facade Window Wall Ratios
Window U-Value and SHGC
Opaque Wall & Roof R-Value
Operable Windows
High Performance Glazing (Triple Glazing)
High Performance Walls
Pre-warmed / cooled Air (Energy recovery / Snow Storage)
Dynamic Facade / Glazing
Passive or Automated Facade Shading System
Life Cycle Costing & Analysis
Carbon Capture



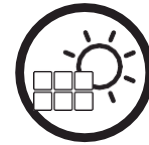
HVAC Systems

Fully Electric HVAC Systems (renewable ready)
Displacement Ventilation
Dedicated Outdoor Air
Energy Recovery
ILFI Zero Carbon Certification



Electrical Systems

Smart Lighting & Plug Load Controls
Lighting & Equipment Power Density Targets
Low-mercury Lighting
LED Lighting
Energy Storage



Smart Building Systems

Advanced Energy Metering
Building Automation System
Occupancy & Daylight Controls
Lighting / HVAC / Elec



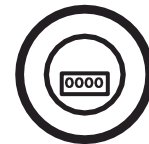
Renewable Energy

Solar
Wind
Geothermal
Hydro



Occupant Wellness / Sustainability

Indoor Air Quality
Low-Emitting Materials
Waste Recycling / Composting Program
Green Cleaning Program
Acoustic Performance & Comfort
Design for Activation & Movement

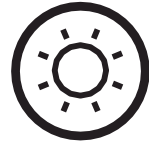


Measure & Accountability

Enhanced Water & Energy Metering
Building Energy Audit
Post-Occupancy Evaluation
Occupant Comfort Survey
Enhanced Commissioning
Building & Design Rating Participation



COLD CLIMATE REGION CONSIDERATIONS



Optimize Massing & Orientation

Solar Radiation
Daylight & Glare
Daylight & Quality Views
Solar Control



Site Sustainability

Evaluate / Reduce Impervious Site Areas
Tree Canopy / Heat Island / Native Drought Resistant Plants
Bicycle Parking
Flood Risk
Stormwater / Future Climate
Water Recycling / Irrigation
Green Roof / Evapotranspiration / Stormwater Management



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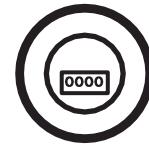
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Solar
Wind
Geothermal
Hydro-electric



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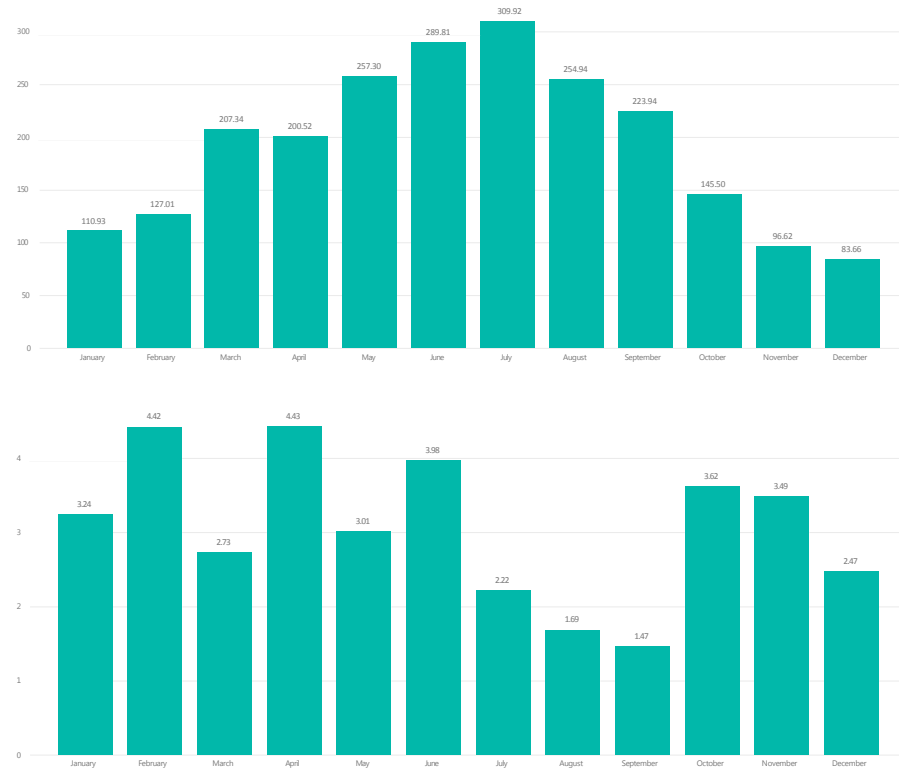


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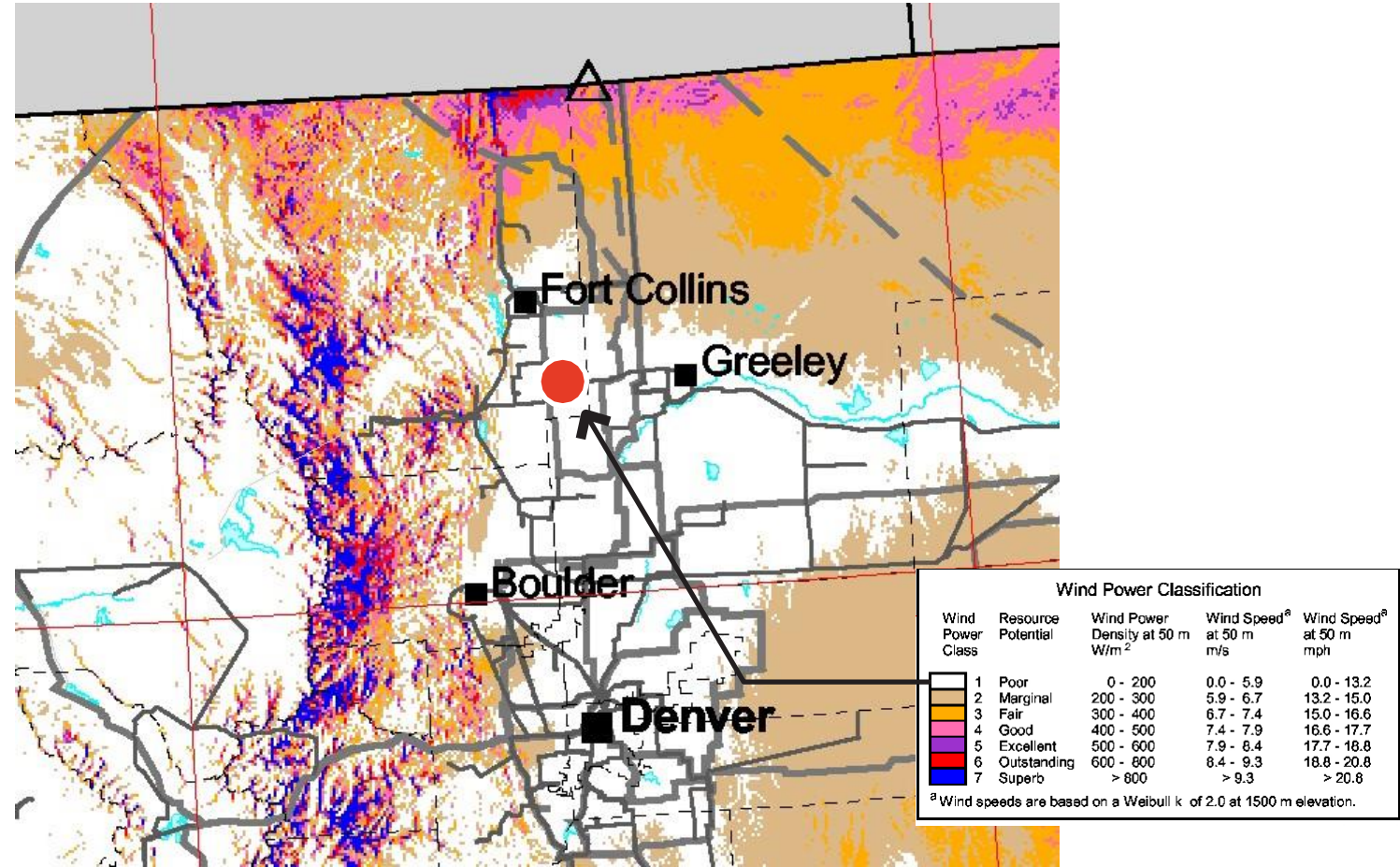


Climate **Solar & Wind**



AVG RAD. (SI)
192.71
W/m²

AVG S.C. (%)
3.05



Orientation & Exposure: EXCELLENT - RECOMMEND SOLAR FOR ROOF OR SITE

Site / slope orientation

Open site with slight eastward slope

Annual exposure and solar potential - EXCELLENT

Low Sky Cover (3%) + High Solar Irradiance (193)

Shading factors - NONE

Daylighting Potential: EXCELLENT

Primary Site - Open to all cardinal direction

Building Axis - E/W with potential for daylight & passive solar design strategies

Solar Control Considerations - consider light shelves, overhangs, horizontal / vertical louvers

Solar Heat Gain

Solar Reflection Index - Evaluate materials for large roof area, site paving

Double-skin facade for long south facing facade, consider self-shading devices

Wind Power Potential: POOR - NOT RECOMMENDED

Regional Wind Potential:

Open site with "Poor" Wind Power Classification for community level wind power generation and average wind speeds of 4-4.5

Site / Scale:

Wind farm potential - Poor

Building mounted wind turbines not recommended

Resilient **Community**

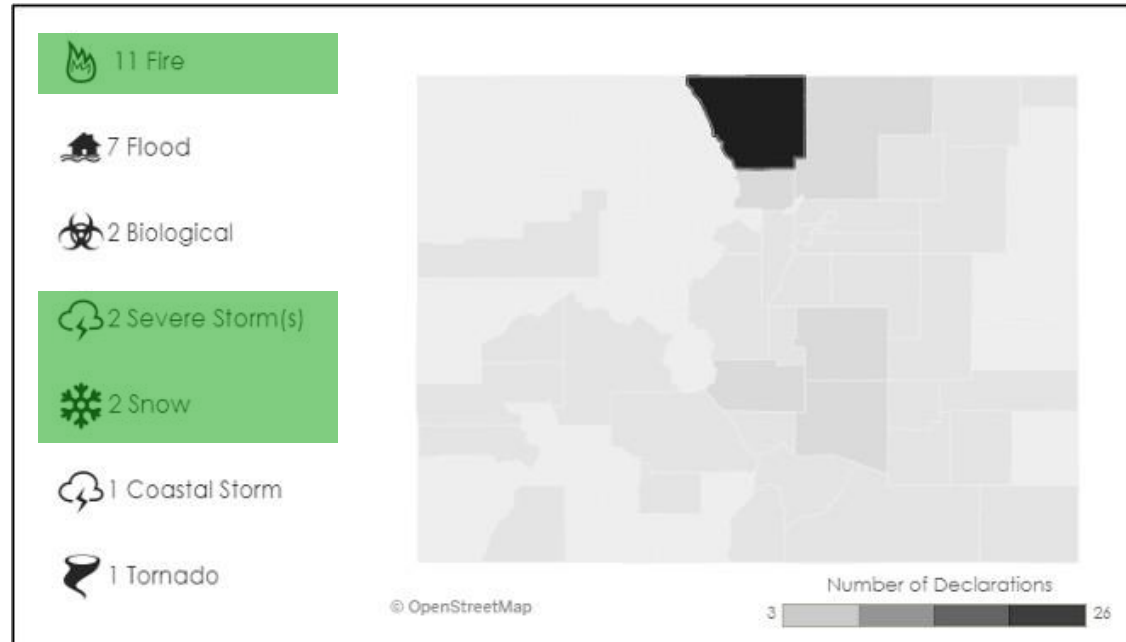


Figure 4 Federally declared disasters in Larimer County since 1953⁹

Natural Disasters:

The risks for natural disaster at The Ranch are relatively low making the site appropriate for development and a community resource during emergencies.

Flood:

Site is not at risk for flooding
Local stormwater management BMPs should be applied

Fire:

Site/landscape is managed and not at high risk for fire

Severe Storm:

Durable, resilient materials for roof/canopy due to risk of hail

Snow:

Architectural and structural design should be evaluated for snow accumulation potential for major storms



Community Support Facility during Emergencies:

The Ranch serves the community as an Evacuation Site and Incident Command Center. The Event Arena and Youth Training Center is well suited to supplement community resiliency resources at The Ranch.

Temporary Emergency Hospital:

Adaptable to emergency uses

Testing Site:

High capacity public space able to accommodate community needs

Evacuation Site / Emergency Shelter:

Large flexible spaces with food service, restrooms, showers, and support space
Back up power generator and/or on site energy storage
Redundant HVAC systems with dedicated outdoor air

Building **Arena**



Climate Pledge Arena, glass wall with light control for daylighting - Seattle WA



HarborCenter CLT + Glu-lam Roof Structure - Buffalo, NY

Ice Plant & Maintenance:

Natural based refrigerants like ammonia, CO2 & glycol
Reduce energy consumption w/ advanced refrigerants
Innovative ice covering and insulation methods

Massive Roof:

Enhanced thermal insulation
Rainwater collection, storage, and recycling
Solar energy potential
Green vegetated roof potential
High solar reflectance index to reduce heat island effect

Fluctuation of Energy Demand for Events

On-site energy storage to offset peak demand
Intelligent zone controls by program area
Separate event space & bowl from regularly occupied spaces
Daylighting Strategies

Efficient Mechanical Systems

Heat Recovery
Co-Generation for dehumidification & heating needs
Outdoor Air Economizer
Dehumidification
High Volume, Low Speed (HVLS) overhead fans
Displacement Ventilation
Geothermal Energy

Lowering Embodied Carbon in Construction Materials

Timber & CLT for primary structure
Limit use of concrete/steel/aluminum
Specify low carbon concrete
Specify high recycled content steel

Building Maintenance & Operations

Durable, low maintenance finishes
Additional janitorial storage for green cleaning program
Electric Zamboni & vehicle fleet



Public Transportation:

Expand COLT Bus network with new stops
High-occupancy vehicles (Shuttle Buses)

Bicycle Path Network

Bike Score of 32 “Somewhat Bikeable”
Increase Regional or Urban Connectivity

Walkability

Walk Score of 10 “Car-Dependent”
Increase walkability at complex and to adjacent areas

Personal Mobility Devices

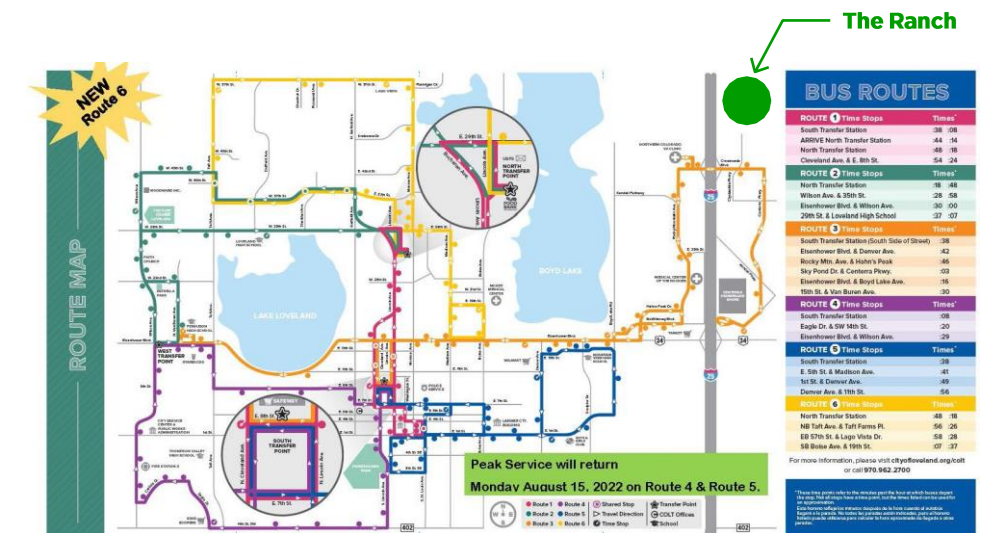
Urban Electric Scooter / Bike Sharing Programs
“Micro-Mobility”

Ride Hailing Services

Design for pick up and drop off - Uber / Lyft

Parking

Evaluate Surface Parking Requirements
Provide Electric Vehicle Charging Stations



Proposed Master Plan The Ranch Events Complex



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