



ITD'S TECM VALUE ENGINEERING STUDY AND INTERCHANGE SELECTION

I-84, Burley & Heyburn ICs; Minidoka County, Idaho



TECM PROGRAM OVERVIEW



LEADING IDAHO
WITH
TRANSPORTATION

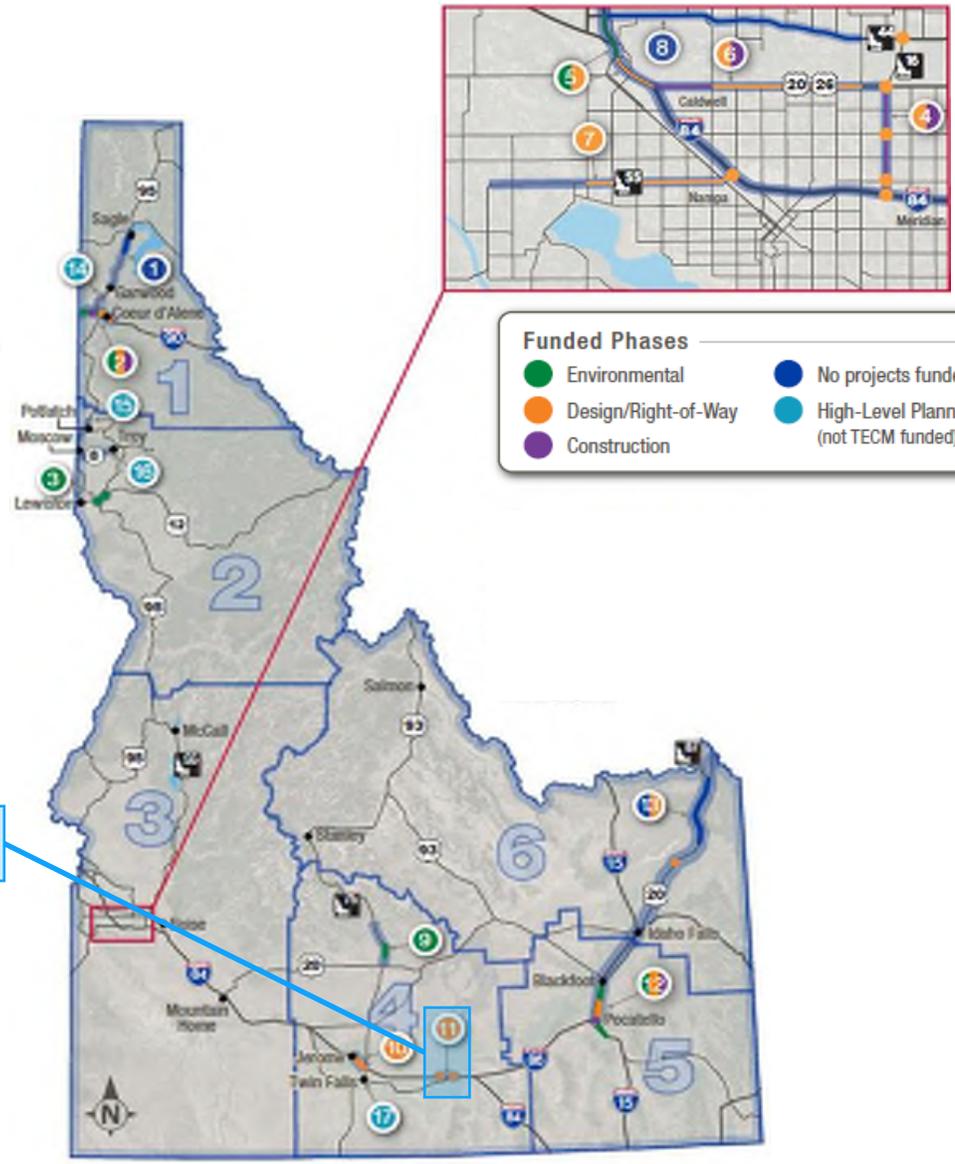


- The purpose of the Idaho Transportation Department’s **Transportation Expansion and Congestion Mitigation** (TECM) program is to address the state’s rapid growth. The Idaho Legislature passed a historic transportation revenue package that Governor Little signed as part of his “**Leading Idaho**” initiative in May 2021.
- Projects in **TECM** corridors will accelerate the construction of critical transportation improvements that will reduce congestion, improve safety, and modernize aging roads and bridges across Idaho.

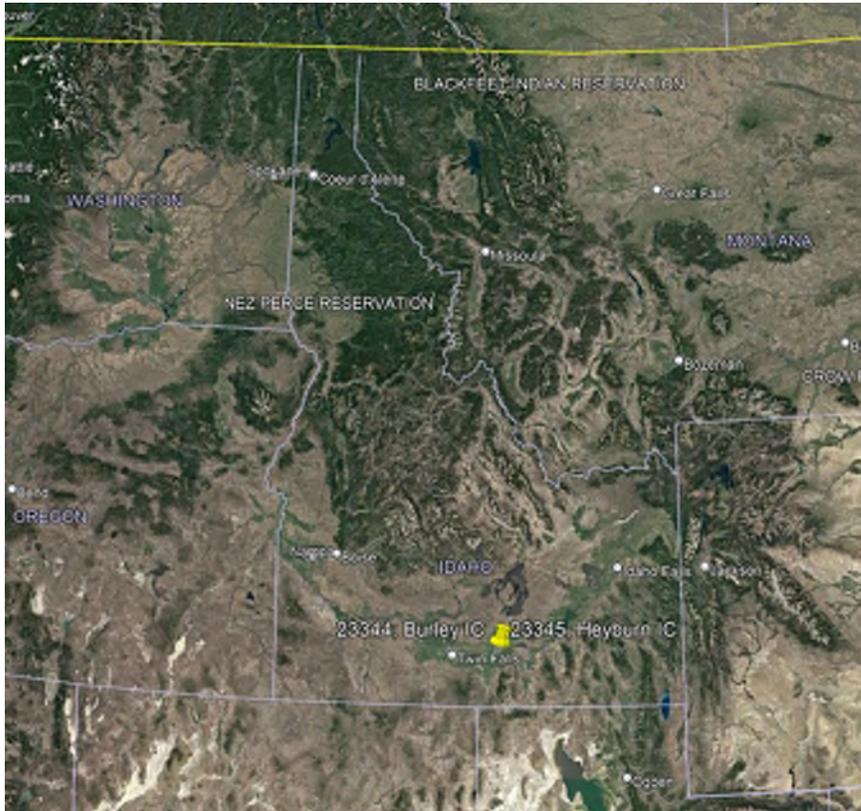


MAP OF TECM PROGRAM CORRIDORS AND PROJECTS

- 1 US-95, Garwood to Sagle
- 2 I-90, Washington State Line to Coeur d'Alene
- 3 US-95 & US-12 Clearwater River Crossings
- 4 SH-16, I-84 to SH-44
- 5 I-84, Ada & Canyon Counties
- 6 US-20/26, I-84 to SH-16
- 7 SH-55, Sunnyslope to Nampa
- 8 SH-44, I-84 to Star
- 9 SH-75, Timmerman Junction to Ketchum
- 10 I-84, Jerome to Twin Falls
- 11 I-84, Burley & Heyburn Interchanges (MP 208 to 211)
- 12 I-15, Pocatello to Idaho Falls
- 13 US-20, Idaho Falls to Montana State Line



LOCATION OF EXITS 208 & 211–BURLEY & HEYBURN ICs





BURLEY IC (EXIT 208) – PARTIAL CLOVERLEAF



BURLEY IC (EXIT 208) – SITE PHOTOS



VIEW: NORTHBOUND SH-27 SOUTH OF THE IC



VIEW: WESTBOUND I-84



HEYBURN IC (EXIT 211) – PARTIAL CLOVERLEAF



HEYBURN IC (EXIT 211) – SITE PHOTOS



VIEW: NORTHBOUND SH-24 SOUTH OF INTERSTATE BRIDGES



VIEW: EASTBOUND I-84 ON BRIDGE OVER RXR TRACKS

BURLEY BASE INTERCHANGE ALTERNATIVES

1. NO-BUILD
2. ENHANCED EXISTING
3. WESTBOUND LOOP RAMP
4. TIGHT DIAMOND
5. DIVERGING DIAMOND



BURLEY ENHANCED EXISTING ALTERNATIVE





BURLEY WESTBOUND LOOP ALTERNATIVE





BURLEY TIGHT DIAMOND ALTERNATIVE





BURLEY DIVERGING DIAMOND ALTERNATIVE



HEYBURN BASE INTERCHANGE ALTERNATIVES

1. NO-BUILD
2. ENHANCED EXISTING
3. TIGHT DIAMOND NORTHBOUND SH-24 ONLY
4. TIGHT DIAMOND NORTH AND SOUTH SH-24
5. TIGHT MODIFIED ROTARY

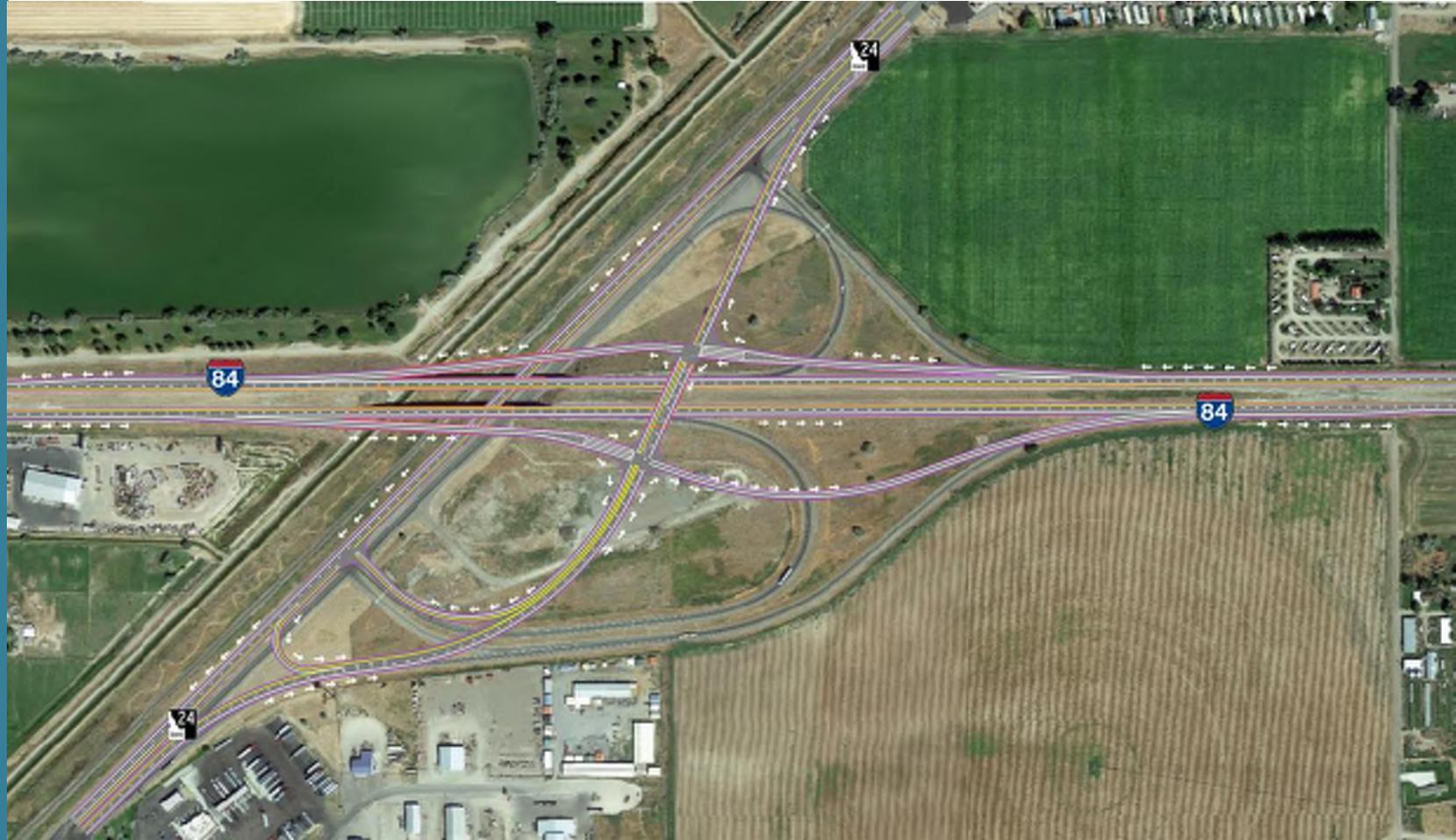


HEYBURN ENHANCED EXISTING ALTERNATIVE



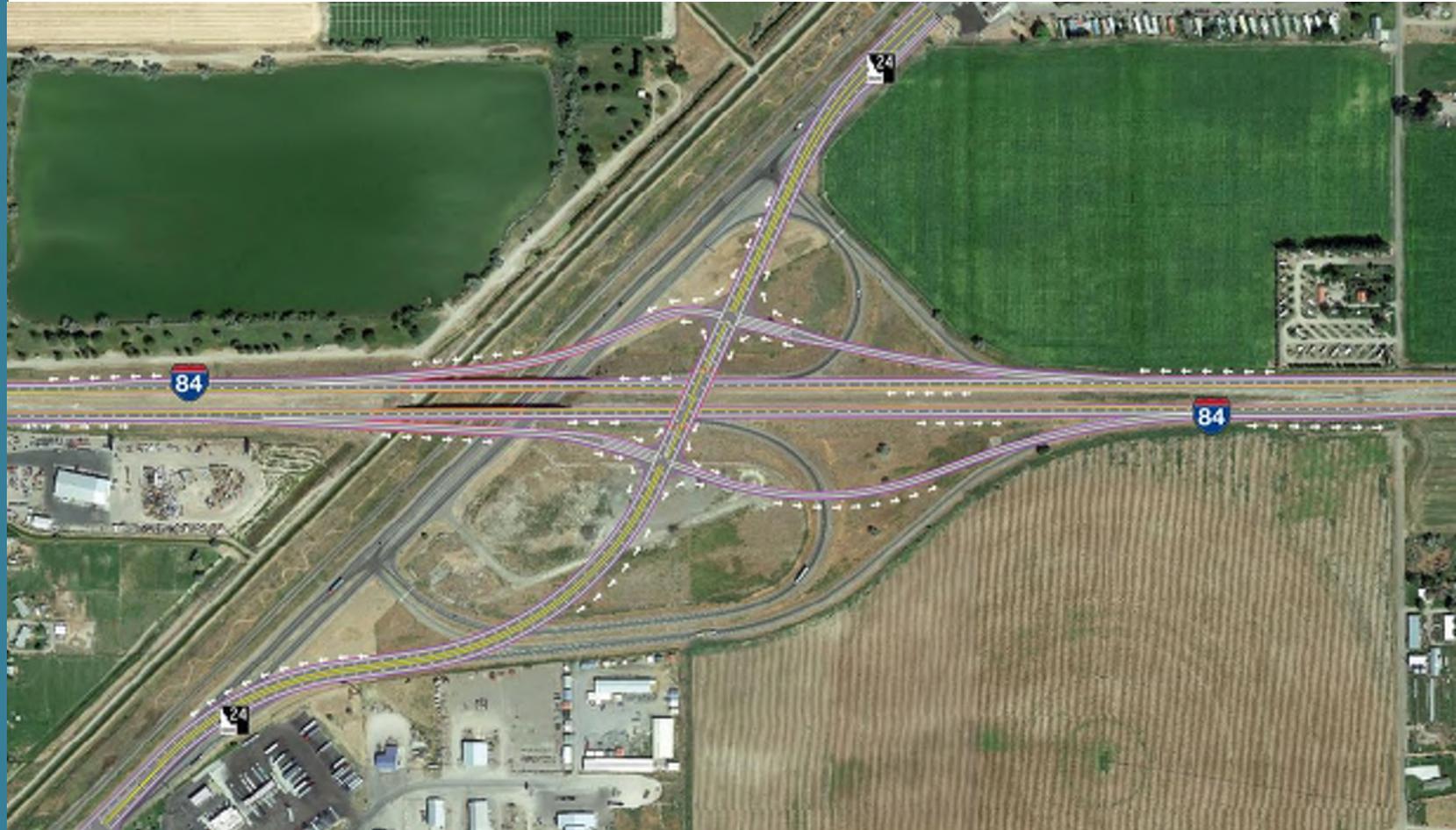


HEYBURN TIGHT DIAMOND NORTHBOUND SH- 24 ALTERNATIVE



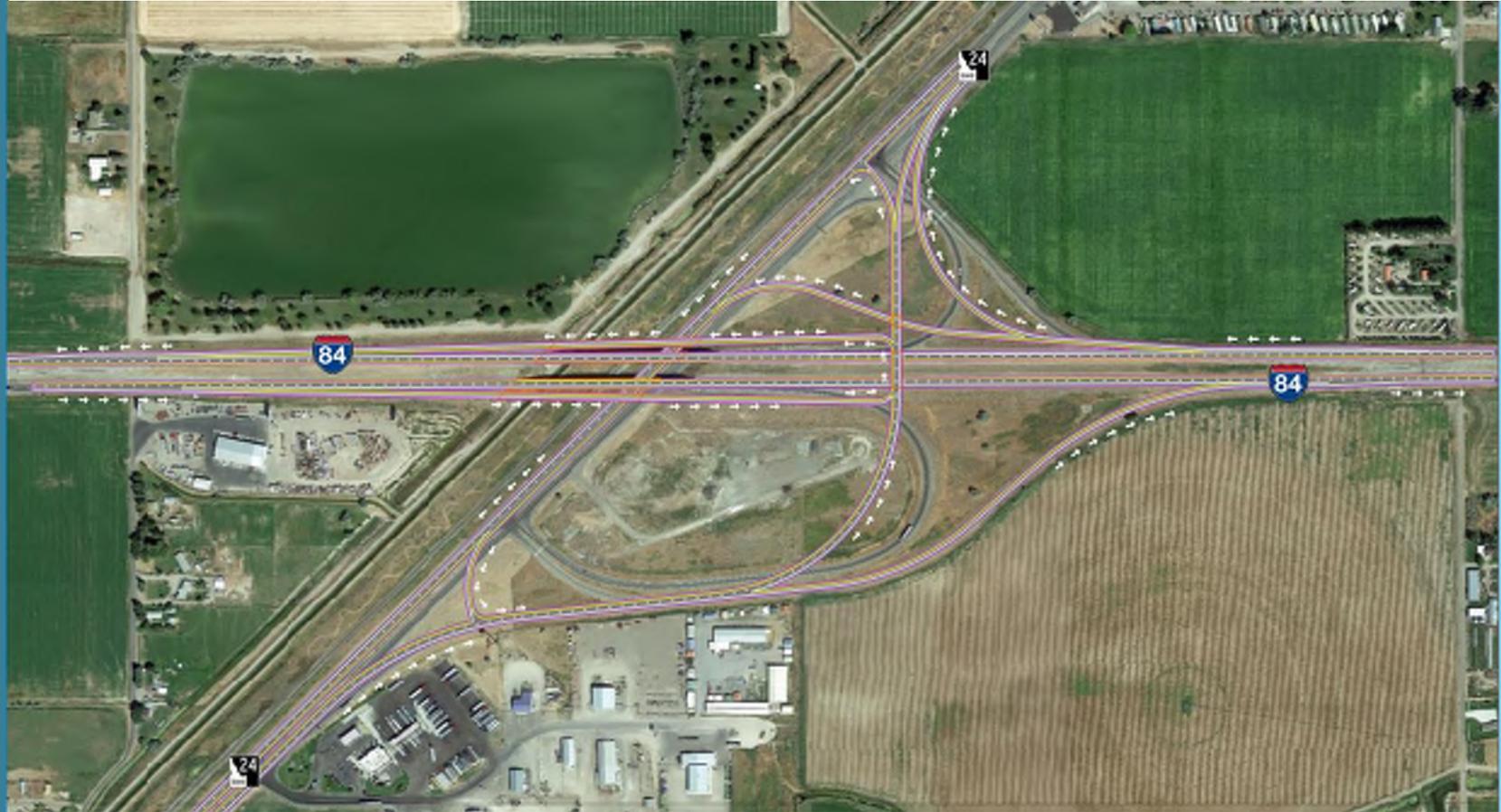


HEYBURN TIGHT DIAMOND NORTH AND SOUTH SH-24 ALTERNATIVE





HEYBURN TIGHT MODIFIED ROTARY ALTERNATIVE



TRAFFIC OPERATIONS – INPUT FOR VE STUDY

1. Data Collection
2. Existing Year Volume Develop.
3. Base Vissim Model Development
4. Base Vissim Model Calibration
5. Future Year Volume Development
6. Traffic Operations Analysis
7. Existing Conditions Analysis
8. Alternatives Analysis



VALUE ENGINEERING TEAM

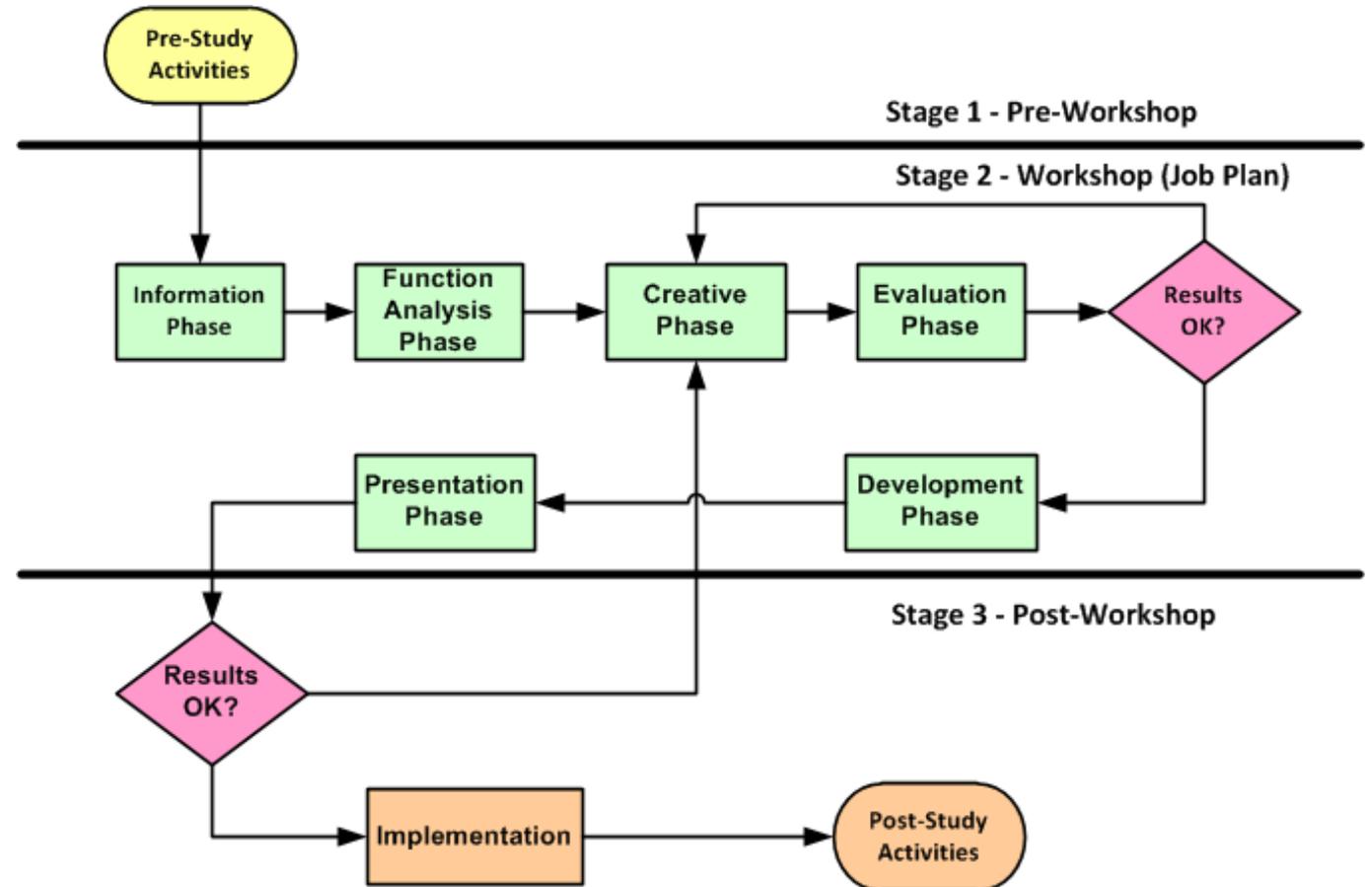




VE JOB PLAN

Provides the structure for the Value Study, which is part of a 3-stage process

1. Pre-Workshop
2. Value Study
3. Post-Workshop





BURLEY IC (EXIT 208) – PARTIAL CLOVERLEAF





BURLEY IC

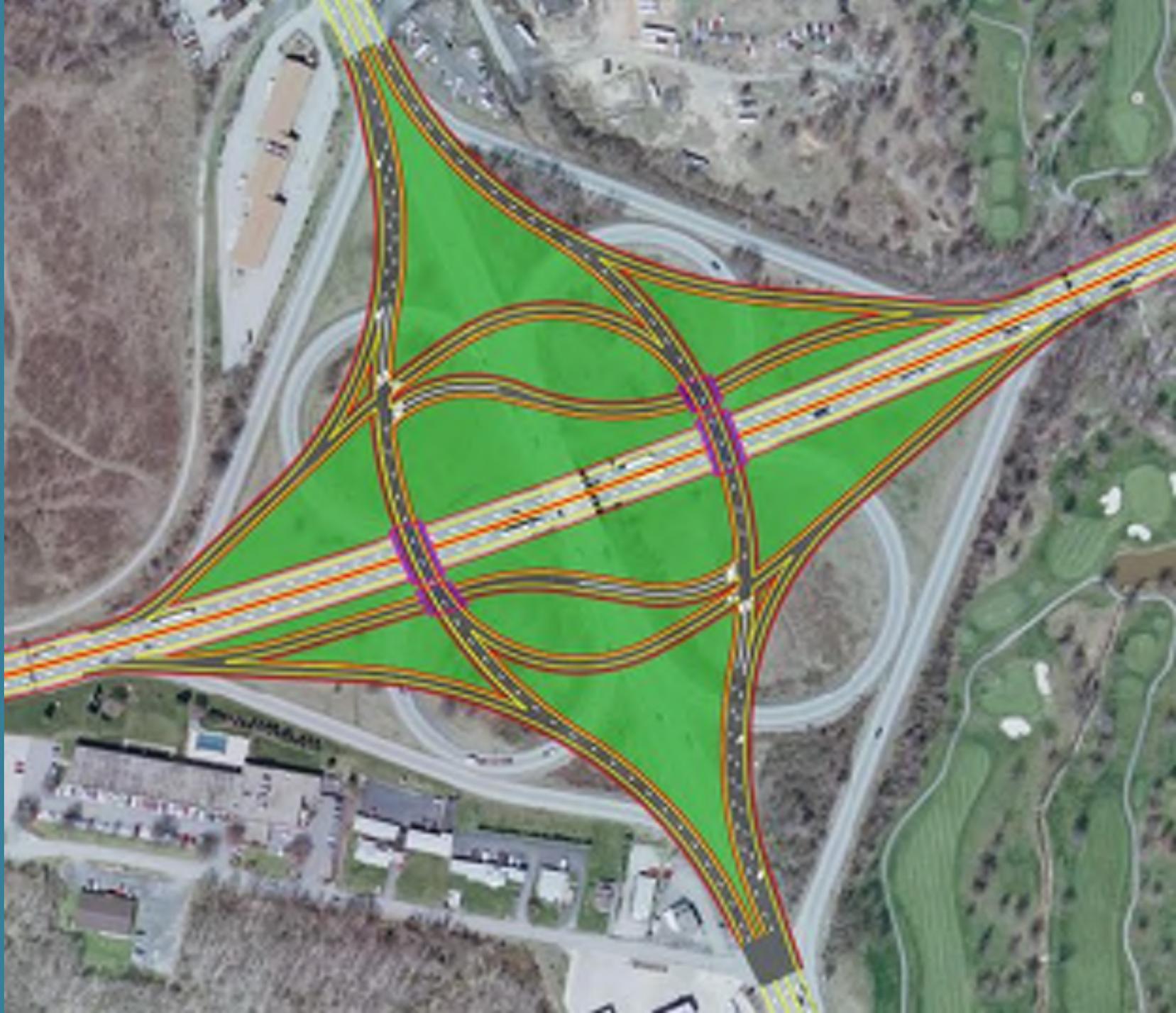
OFFSET DIAMOND
INTERCHANGE





BURLEY IC

**SIGNALIZED
TURBINE
INTERCHANGE**





BURLEY IC

**IMPROVED
DIVERGING
DIAMOND
INTERCHANGE**





HEYBURN IC (EXIT 211) – PARTIAL CLOVERLEAF





HEYBURN IC

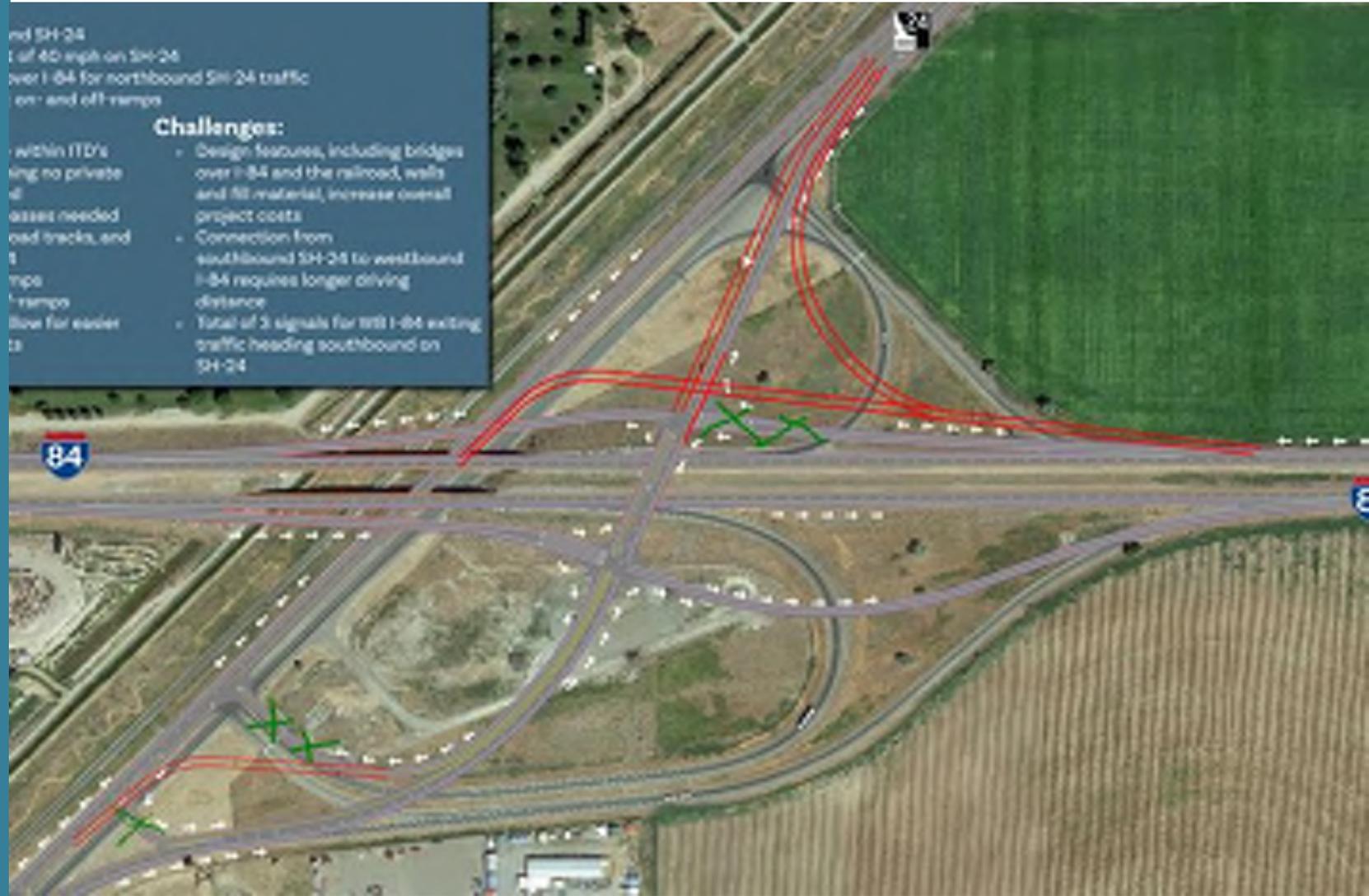
IMPROVED RAMP MOBILITY

and SH-24
of 40 mph on SH-24
over I-84 for northbound SH-24 traffic
on- and off-ramps

within ITR's
ing no private
of
assets needed
oad tracks, and
t
ramps
flow for easier
ta

Challenges:

- Design features, including bridges over I-84 and the railroad, walls and fill material, increase overall project costs
- Connection from southbound SH-24 to westbound I-84 requires longer driving distance
- Total of 3 signals for ITR I-84 exiting traffic heading southbound on SH-24





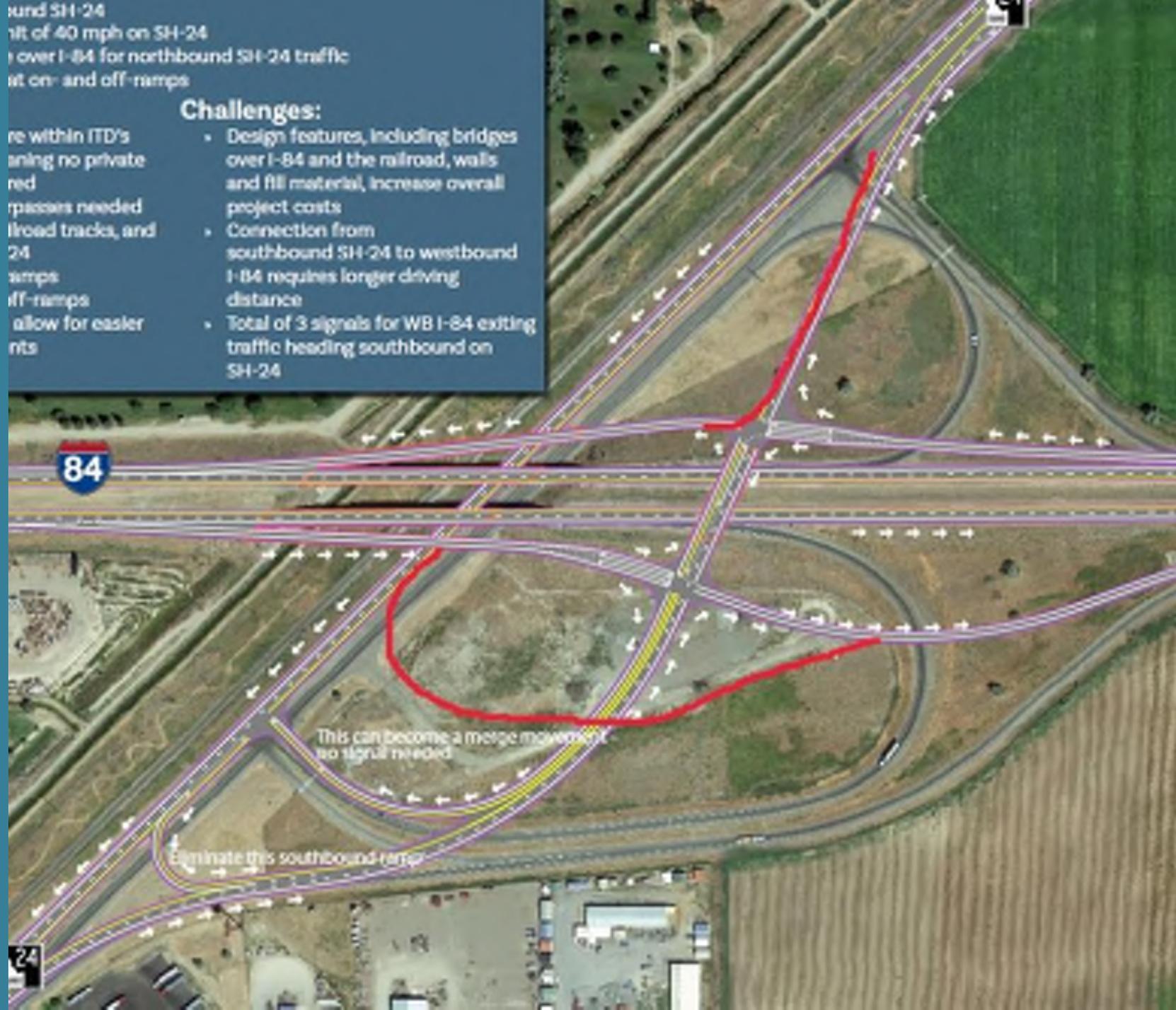
HEYBURN IC

MODIFIED DIAMOND AND REMOVE SB RAMP

and SH-24
limit of 40 mph on SH-24
over I-84 for northbound SH-24 traffic
at on- and off-ramps

Challenges:

- Design features, including bridges over I-84 and the railroad, walls and fill material, increase overall project costs
- Connection from southbound SH-24 to westbound I-84 requires longer driving distance
- Total of 3 signals for WB I-84 exiting traffic heading southbound on SH-24





HEYBURN IC MODIFIED PARCLO





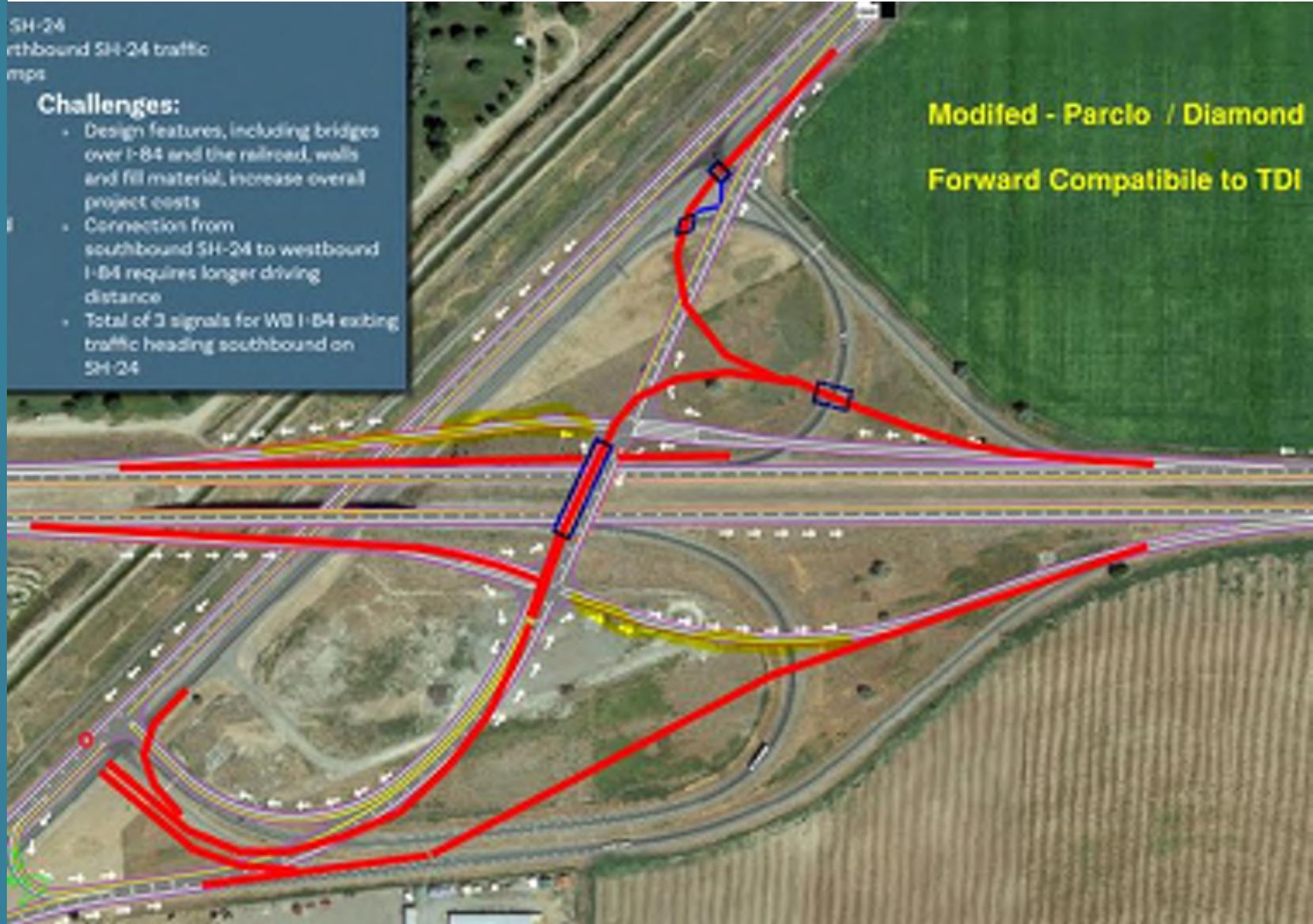
HEYBURN IC

THREE QUARTER DIAMOND

SH-24
southbound SH-24 traffic
imp

Challenges:

- Design features, including bridges over I-84 and the railroad, walls and fill material, increase overall project costs
- Connection from southbound SH-24 to westbound I-84 requires longer driving distance
- Total of 3 signals for WB I-84 exiting traffic heading southbound on SH-24



Modified - Parclo / Diamond

Forward Compatible to TDI



HEYBURN IC

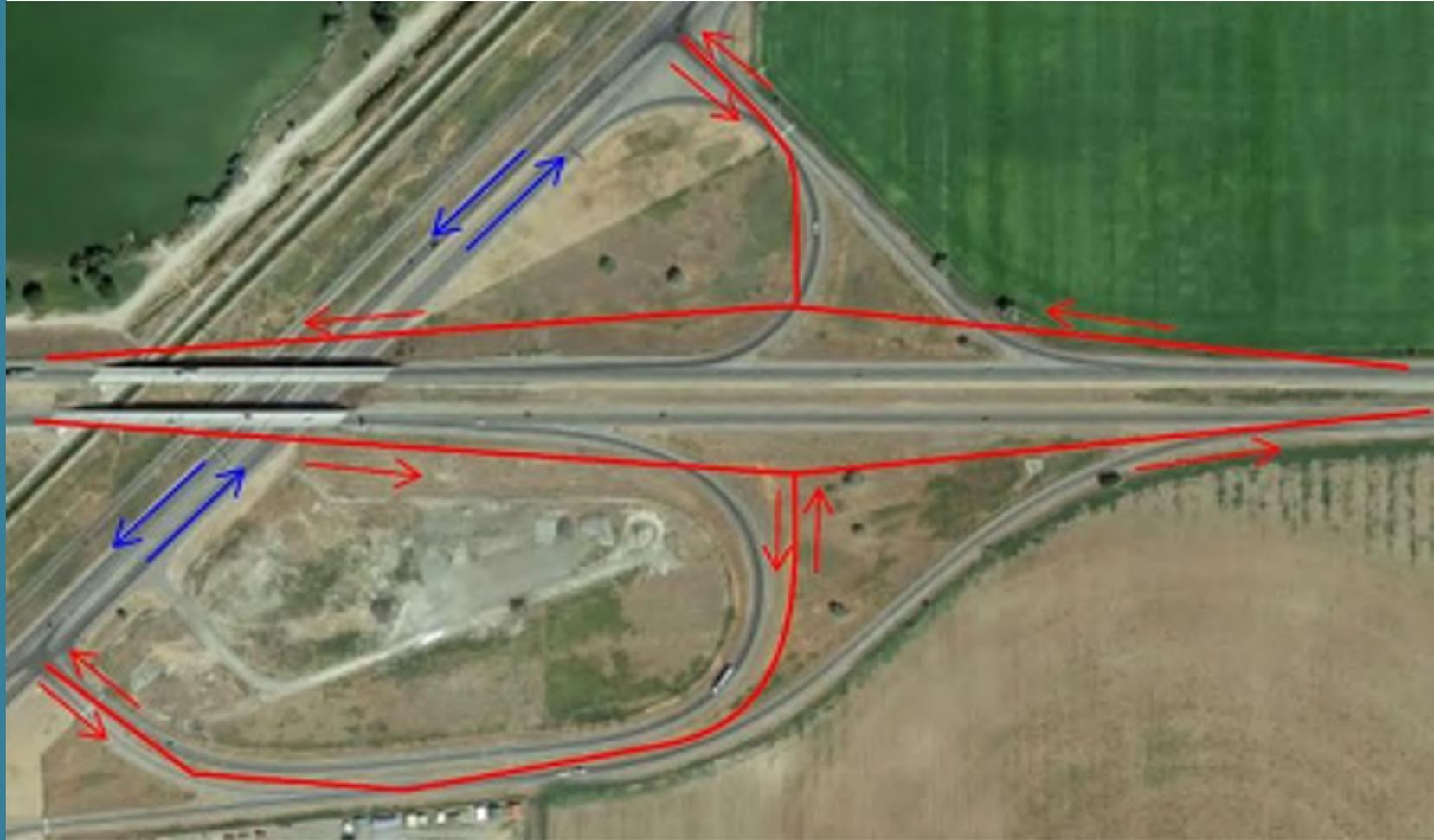
OFFSET DIAMOND OPTION 1





HEYBURN IC

OFFSET DIAMOND OPTION 2

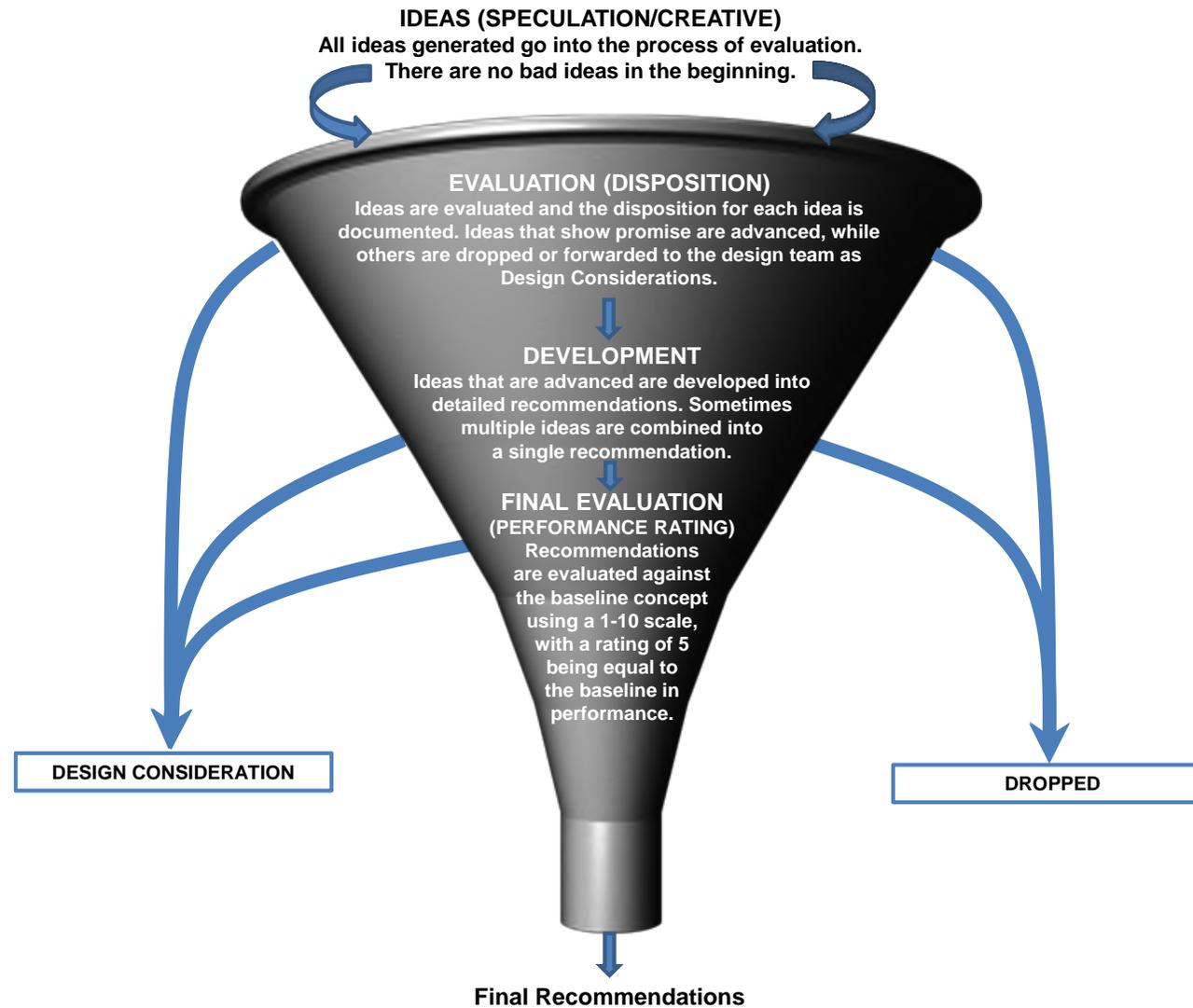




HEYBURN IC

PARCLO A/B WITH HALF DIAMOND





EVALUATION PHASE



Performance Based VE

Value Engineering is not just about reducing project costs, but can also improve project performance

- *Mainline Operations*
- *Local Operations*
- *Maintainability*
- *Construction Impacts*
- *Environmental Impacts*

$$\text{Value} = \frac{\text{Performance} \uparrow}{\text{Cost} \downarrow}$$

| # | Recommendation Title | Performance | Cost \$ millions | Cost Change \$ millions* | Value Index |
|----------------------------|---|-------------|---------------------|--------------------------------|----------------|
| Burley Interchange | | | | | |
| B1 | Enhanced Existing VE Improvements | 500 | \$32.8 | \$1.12 | 15.25 |
| B2 | Westbound Loop Ramp VE Improvements | 490 | \$26.2 | (\$0.18) | 18.70 |
| B3 | Tight Diamond <i>As-Presented</i> | 640 | \$28.8 | -- | 22.25 |
| B4 | Diverging Diamond VE Improvements | 720 | \$30.0 | (\$1.80) | 23.98 |
| Heyburn Interchange | | | | | |
| H1 | Enhanced Existing VE Improvements | 500 | \$41.1 | (\$0.29) | 12.17 |
| H2 | Tight Diamond NB SH-24 VE Improvements | 630 | \$59.1 | (\$1.00) | 10.66 |
| H2A | Offset Diamond (New Concept) | 690 | \$51.1 | \$7.00 | 13.50 |
| H2B | Three-Quarter Diamond (New Concept) | 650 | \$47.5 | \$10.66 | 13.69 |
| H3 | Tight Diamond North and South SH-24 <i>As-Presented</i> | 600 | \$63.7 | -- | 9.42 |
| H4 | Tight Modified Rotary VE Improvements | 630 | \$58.8 | \$0.07 | 10.71 |
| H4A | Improved Rotary Mobility (New Concept) | 610 | \$59.6 | (\$0.72) | 10.24 |

*Shown as Savings or (Cost Added)



BURLEY IC – TIGHT DIAMOND ALTERNATIVE





BURLEY IC – TIGHT DIAMOND ALTERNATIVE



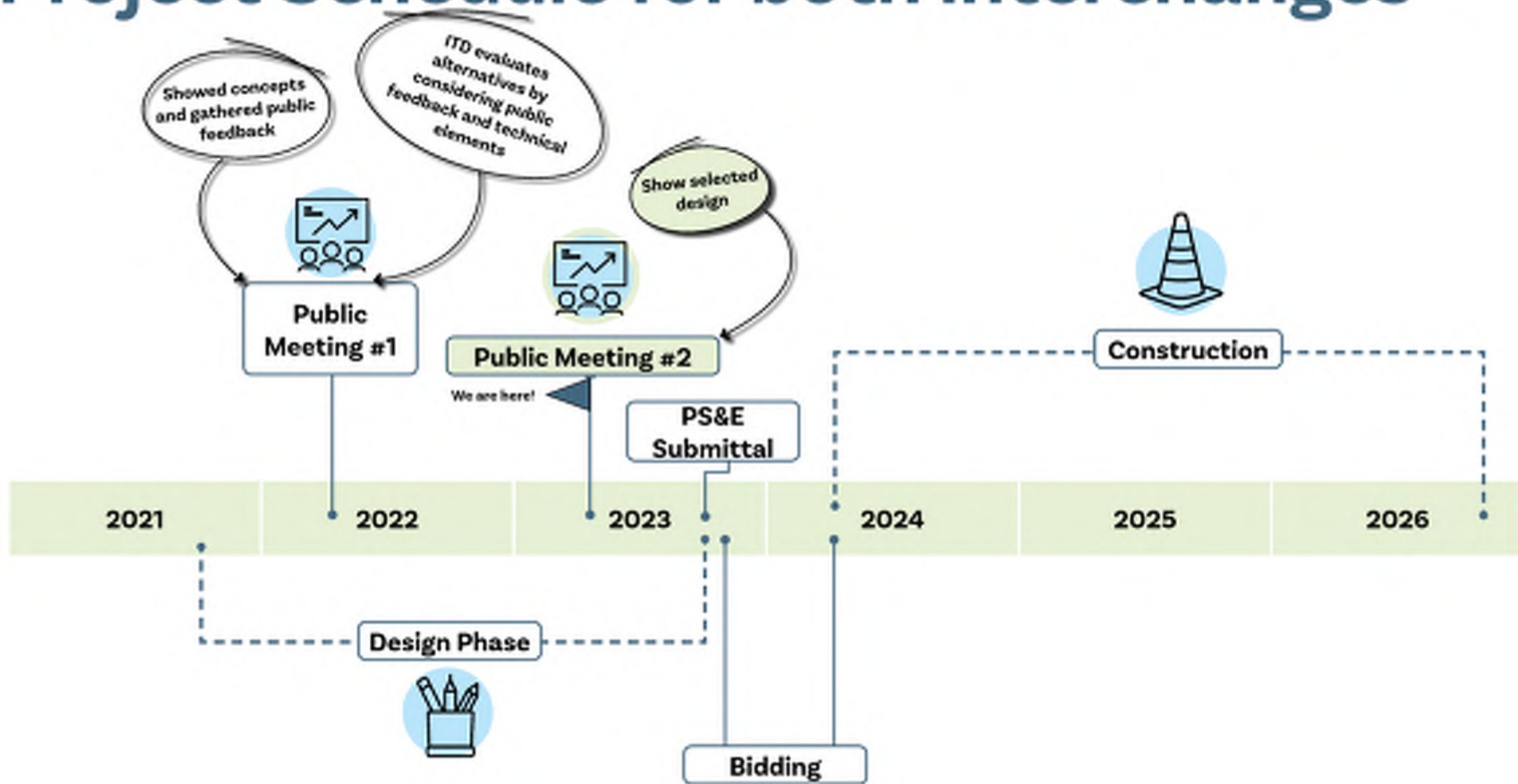
HEYBURN IC – OFFSET DIAMOND (MOD) ALTERNATIVE



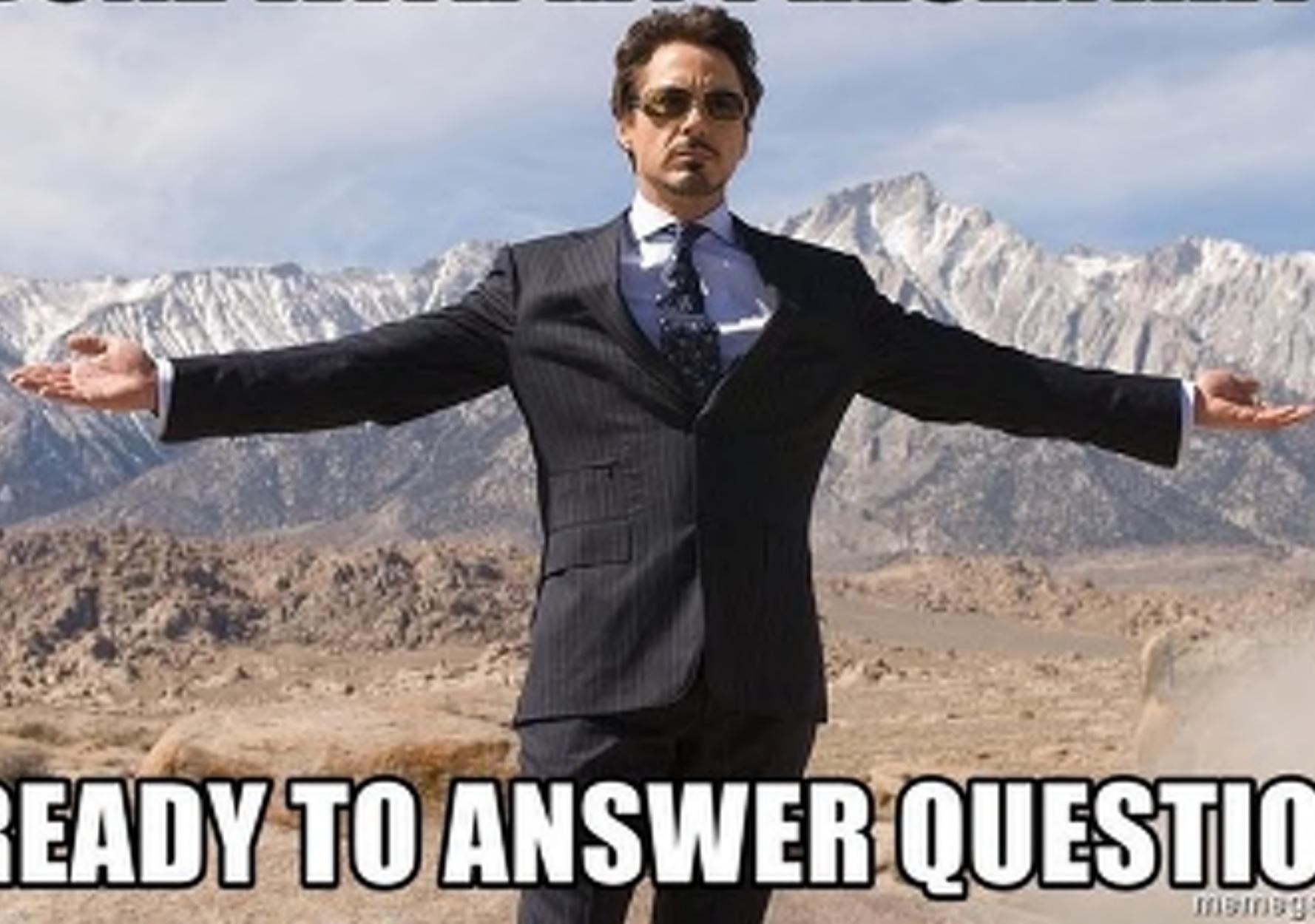


HEYBURN IC – OFFSET DIAMOND (MOD) ALTERNATIVE

Project Schedule for both interchanges



DONE WITH MY PRESENTATION



READY TO ANSWER QUESTIONS

memegenerator.net

