EASTERN TREASURE VALLEY
ELECTRICAL PLAN

2023–24 UPDATE

IDAHO POWER®

In Cooperation With The:
2023–24 Eastern Treasure Valley Electrical Plan Community Advisory Committee

Report Prepared By:
Transmission & Distribution Planning Department

Idaho Power thanks the members of the
2023–24 Eastern Treasure Valley Electrical Plan Update Community Advisory Committee.

Brent Moore	Ada County, Senior Planner
Justin Lucas	Ada County Highway District, Deputy Director Planning and Projects
Brian Emtman	Boise State University, Director of Energy and Utilities
Clark Krause	Boise Valley Economic Partnership, Executive Director
Amy Snyder	City of Boise, Airport Property and Contract Administrator, Boise Airport
Deanna Dupuy	City of Boise, City Planning and Design Manager
Sean Keithly	City of Boise, Office of the Mayor, Economic Development Director
Andrea Tuning	City of Boise, Senior Urban and Regional Planner
Daniel Miller	City of Eagle, Planner III
John Evans	City of Garden City, Mayor
Jenah Thornborrow	City of Garden City Development Services Department, Director
Joe Stear	City of Kuna, Mayor
Doug Hanson	City of Kuna, Planning and Zoning Director
David Miles	City of Meridian, Chief of Staff
Brian McClure	City of Meridian, Long-range Planning Supervisor
Chris Curtis	City of Mountain Home, Director of Public Works
Betsy Hiddleston	City of Mountain Home, Senior Economic Development Specialist
Brenda Ellis	City of Mountain Home Building Services, Administrative Assistant
Austin Miller	COMPASS, Principal Planner
Aaron Scheff	Department of Environmental Quality, Regional Administrator
Johnny Hernandez	Elmore County, Building Official
Mitra Mehta-Cooper	Elmore County, Land Use and Building Director

James Roddin	Elmore County, Office Manager
Crystal Rodgers	Elmore County Commissioner, District 2
Christy Accord	Elmore County Rural Development Organization, Manager
Justin Freeman	Idaho Department of Corrections, Construction Manager
Brad Lowe	Idaho Department of Fish and Game, Regional Habitat Manager
Brandon Flack	Idaho Department of Fish and Game, Regional Technical Assistance Manager
Ryan Walrath	Idaho Department of Fish and Game, Regional Wildlife Manager
Vincent Trimboli	Idaho Transportation Department, District 3 Planning and Development Services, Program Manager
Jim Swier	Micron Technology, Facilities Operations and Maintenance Senior Manager
Greg Fagan	Mountain Home Air Force Base, Facility Systems Chief
Bethany Gotts	Owyhee County, Agriculture
Kelly Aberasturi	Owyhee County Commissioner, District 2
Gabe Garcia	St. Luke's Hospital, Manager Building Services
Charles Read	State of Idaho, Military Division
Amy Kenny	United States Bureau of Land Management, Acting Assistant Field Manager
Brent Ralston	United States Bureau of Land Management, Field Manager
Kate Hermanns	United States Department of Agriculture Forest Service

Idaho Power sincerely thanks members of the Community Advisory Committee for their participation and Idaho Fish and Game for providing facilities to accommodate the process.

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GLOSSARY

Buildout—The point at which all available land is developed according to land-use ordinances. Buildout is expected to occur in the distant future, not within a specific timeframe.

Capacity—The maximum amount of power an element of the power system can handle or produce. Measured in megawatts (MW).

Demand—The amount of energy used at one time. Measured in MW.

Distribution Circuits (12.5 kilovolts [kV] to 34.5 kV)—Electrical circuits used to distribute power from distribution substations to homes and businesses throughout the community.

Distribution Substations—Substations that serve local loads, such as homes and businesses, throughout the community.

Double Circuits—Two transmission circuits sharing the same poles.

Eastern Treasure Valley Electrical Plan (ETVEP)—The Regional Electrical Plan of the Eastern Treasure Valley, originally completed in 2012 and updated in 2024.

Energy—Amount of power used over time. Measured in kilowatt-hours (kWh).

High-voltage Transmission (230 kV to 500 kV)—Electrical circuits used to transfer large amounts of power long distances.

In-And-Out—Two transmission circuits that serve a distribution substation. If one transmission circuit is out of service, the other transmission circuit can serve the substation.

Junction (Jct.)—The location at which a transmission circuit is attached to another transmission circuit.

Kilovolt (kV)—Unit of measurement of voltage; 1 kV = 1,000 volts.

Line—The physical wires and poles that, when connected to other lines and substations, make up an electrical circuit.

Load—Cumulative electrical demand from customers in an area.

Megawatt (MW)—Unit of measurement of power; 1 MW = 1,000,000 watts.

Power—The rate at which work is performed. Measured in MW.

Regional Electrical Plan—Together with local jurisdictions and customers, Idaho Power creates regional electrical plans to determine preferred locations for future substations and transmission lines to meet customers' energy needs.

Reliability—The degree to which customers can depend on electrical service. Key metrics of reliability include how often power outages occur, how long the outages last, and how many customers are affected.

Source Substation—Converts high-voltage transmission lines (230 kV and above) to lower voltages (69 kV to 138 kV). Acts as a power source for distribution substations.

Substations—Substations transform one voltage to another and protect and control power lines. Substations include transformers, circuit breakers, switches, support structures and large metallic pipes, called bus, to connect the components.

Tap—The point along a transmission line in which a new transmission line electrically connects to an existing transmission line outside of a substation.

Transmission (69 kV to 138 kV)—Electrical circuits used to transfer power from source substations to distribution substations and between distribution substations.

Voltage—The pressure that moves a current of electricity. Measured in kV for power lines; 1 kV = 1,000 volts.

Western Treasure Valley Electrical Plan (WTVEP)—The Regional Electrical Plan of the Western Treasure Valley, originally completed in 2011 and updated in 2023.

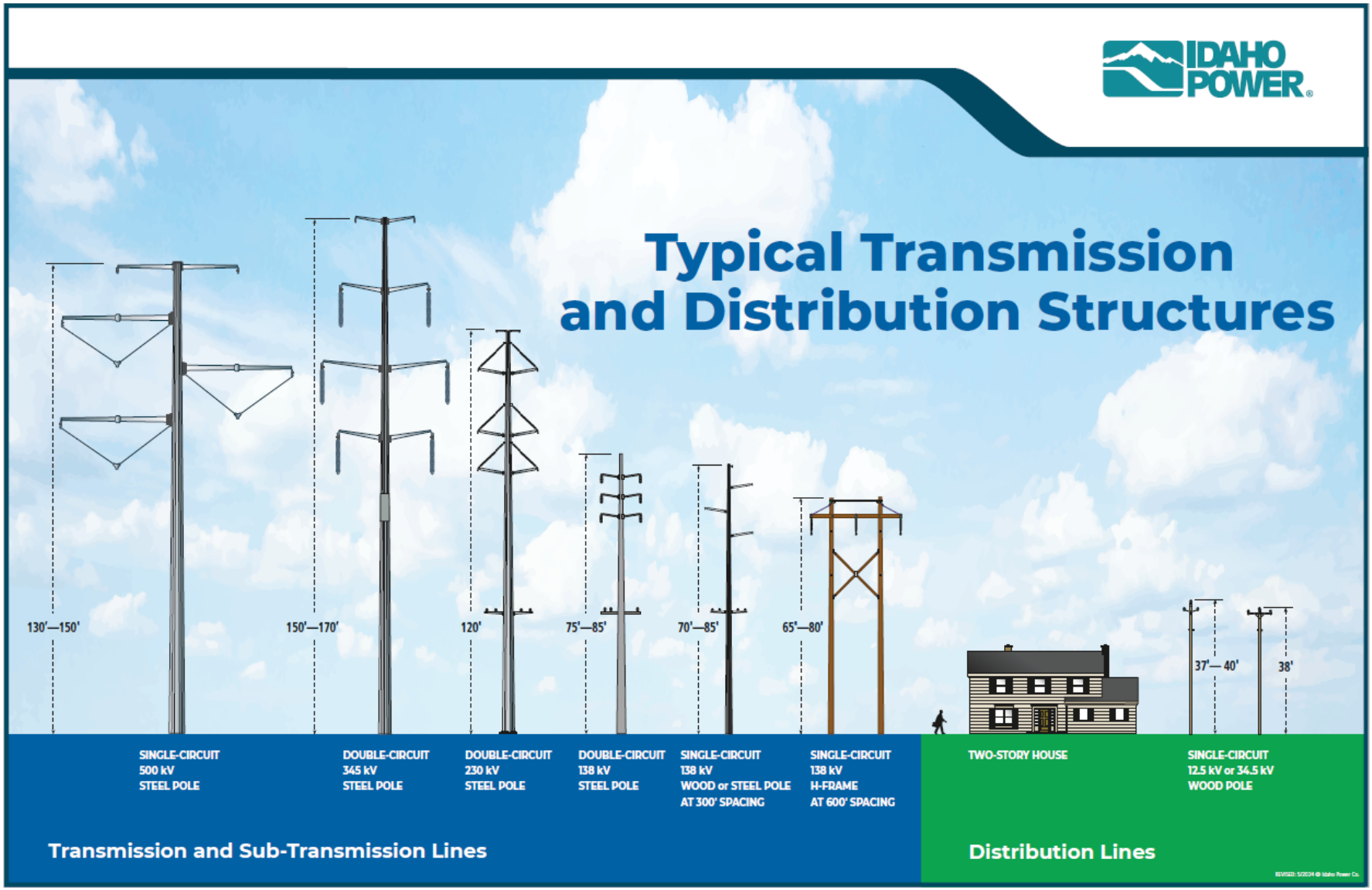

Figure A
Typical transmission and distribution structures

BACKGROUND

In 2012, Idaho Power developed the Eastern Treasure Valley Electrical Plan (Original Plan) with the help of a community advisory committee (Original Committee) made up of community representatives. The Original Plan identified infrastructure improvements and additions to address anticipated growth and provide reliable power in the future. It provided a strategy to serve the electrical needs of Idaho Power's customers in a region made up of Idaho's Ada, Elmore, and Owyhee counties. The Original Plan provided preferred locations for future substations and transmission line routes recommended by the Original Committee.

In 2023, Idaho Power performed a technical analysis of the Eastern Treasure Valley's electrical system and determined that 29 future distribution substations, six future source substations, and connecting transmission lines would be needed to serve anticipated buildout loads. A buildout is defined as a point in time at which all available land is developed according to land-use designations. A buildout is expected to occur in the distant future, not within a specific timeframe.

Another community advisory committee (the Committee) was formed. Idaho Power asked community members and representatives from environmental agencies, various government divisions and jurisdictions, and small and large businesses to help update the Original Plan. A complete list of the committee members can be found following the cover page of this report. The members provided broad and diverse knowledge that added important insight to the electrical planning process.

The Committee started its work on the Eastern Treasure Valley Electrical Plan Update (the Plan) in October 2023. Meetings were held monthly through March 2024. Through these meetings, the Committee was introduced to electrical power concepts and Idaho Power's electrical system. The Committee then reviewed and updated the Community Goals and Siting Criteria from the Original Plan. A list of the updated Community Goals and Siting Criteria can be found in Appendix A.

The following items were within the scope of the Plan:

- 230-kilovolt (kV) transmission lines
- 230-kV to 138-kV source substations
- 138-kV transmission lines
- Distribution substations

The following items were outside of the scope of the Plan:

- Distribution circuits
- Transmission lines outside the Plan area
    - 500-kV transmission lines associated with the Boardman to Hemingway project and the Gateway West project, which have their own process found in the following links:

  - Boardman to Hemingway Project: idahopower.com/energy-environment/energy/planning-and-electrical-projects/current-projects/boardman-to-hemingway/
  - Gateway West Project: idahopower.com/energy-environment/energy/planning-and-electrical-projects/current-projects/gateway-west/

To organize the Plan's findings, the study area was divided into the following sub-areas:

- High Voltage Transmission Lines and Source Substations
  - North Ada area
  - South Ada/Elmore area
- 138-kV Transmission Lines and Distribution Substations
  - Area 1: Northwest Ada area
  - Area 2: Northeast Ada area
  - Area 3: Southwest Ada area
  - Area 4: Southeast Ada area
  - Area 5: Mayfield/Orchard area
  - Area 6: Mountain Home area

A visual representation of where these sub-areas are located can be seen in Figure 1 and Figure 4. The Committee broke into four groups to develop recommendations for the location of future transmission lines and substations. The results of each group's efforts can be found in Appendix B.

The Committee used recommendations from all four groups to develop a preferred option for each new substation location and transmission line route. These options will be part of Idaho Power's long-range plan and will be built only as required by growth. The Committee also developed alternative options in case preferred options are not feasible at the time of construction. If the preferred option is not feasible and an alternative is not provided or is not feasible, Idaho Power will use the Community Goals and Siting Criteria to select a location near the preferred location. The Eastern Treasure Valley Electrical Plan (ETVEP) is an advisory document and will not bypass any governmental/jurisdictional process. Details and maps of the preferred and alternative options are located in the Mapping Results section of this document.

The implementation plan included in this document contains a summary of the anticipated infrastructure needs identified in the ETVEP that may be needed within the next 10 years. The implementation plan is managed by Idaho Power and may change depending on growth and electrical needs of the Eastern Treasure Valley.

The maps included in the Mapping Results section of this document show proposed new transmission lines and substations. Supplemental maps showing additional features of transmission lines, such as double-circuited routes and proposed routes that follow existing transmission routes, can be found in Appendix C and Appendix D, respectively.

The Plan was created based on the most current future land use and zoning information for the impacted communities. Over time, future land use designations will change to address the evolving needs of communities. Every 10 years, Idaho Power will facilitate the creation of a new community advisory committee to update the ETVEP. If a major change occurs in the Eastern Treasure Valley that necessitates a change to the plan, a new community advisory committee will be formed sooner than 10 years.

For more information on Idaho Power's process for updating electrical plans, review the Electrical Plan Update Process document on the Idaho Power website or use the following link: idahopower.com/energy/planning/regional-electric-plans/.

Questions about the electrical planning process or the results of the ETVEP Update 2023–24 can be directed to the capital regional planning engineer at 208-388-2257.

MAPPING RESULTS

High Voltage Transmission Lines And Source Substation Areas

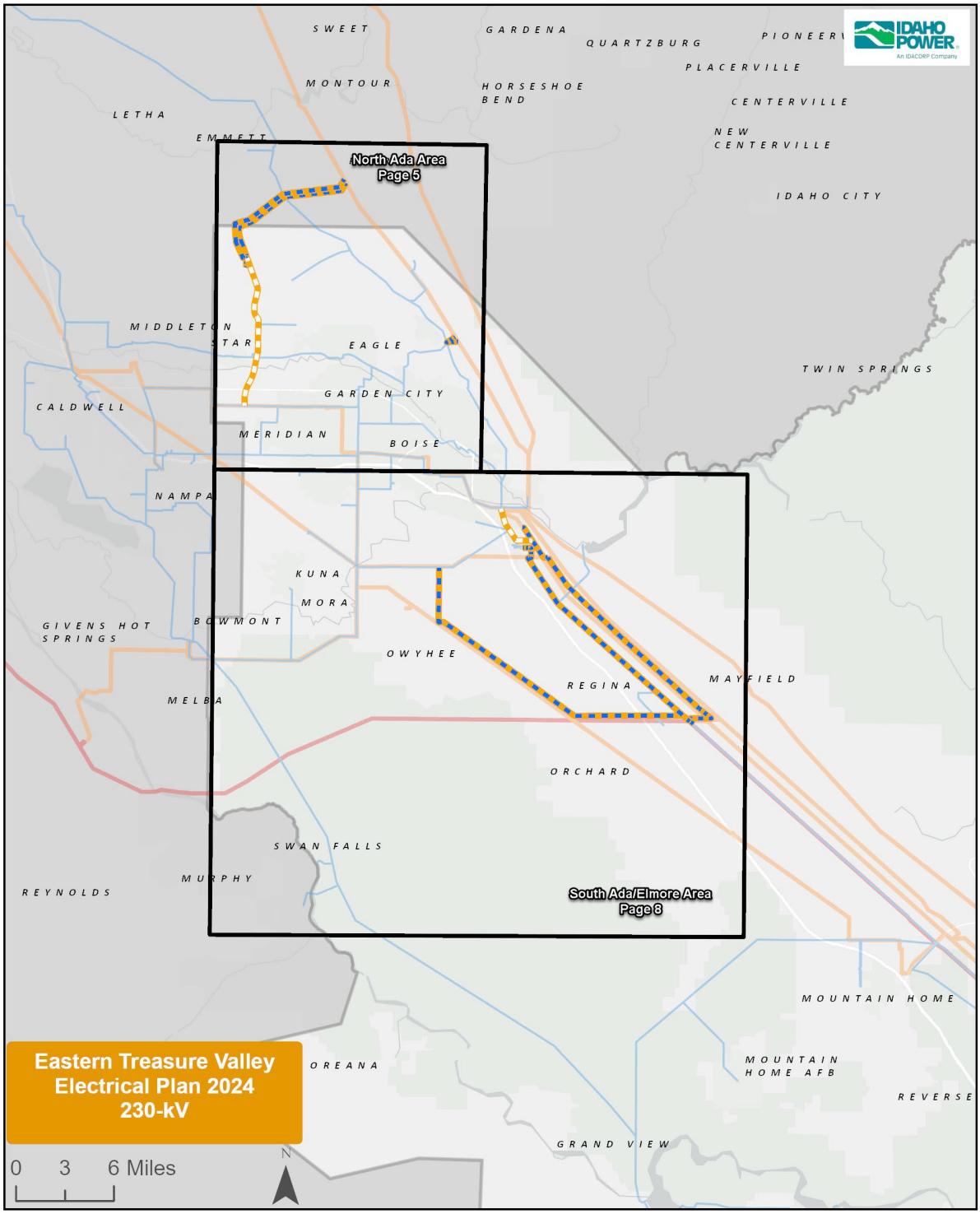

Figure 1
High voltage transmission line and source substation areas

High Voltage Transmission Lines and Source Substations—North Ada Area

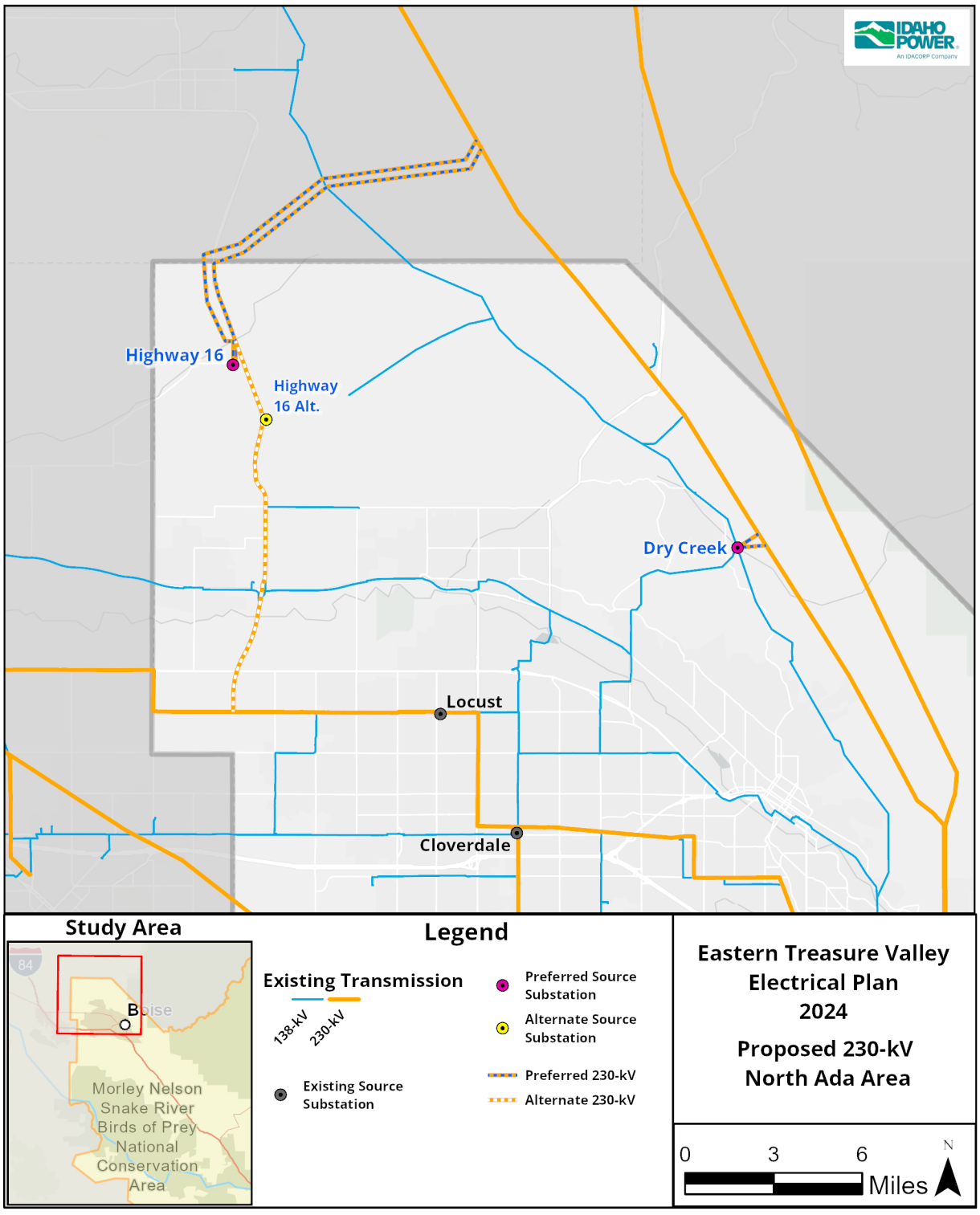

Figure 2
Preferred high voltage transmission lines and source substations—North Ada area

Preferred Options

The Committee chose preferred locations for two new source substations and the connecting transmission line routes in the North Ada area.

Preferred Source Substation Locations

Highway 16 Source Substation

The Committee opted to locate the Highway 16 Source Substation north of the City of Star, west of the Firebird Speedway, and south of the bend in Chaparral Road.

New Connecting Transmission Routes

- Highway 16 Source North Connecting 230-kV Transmission Lines
- Highway 16 Source to Gulch Creek Substation (138-kV)
- Highway 16 Source to Sub 1 (138-kV)
- Alternate—Highway 16 Source South Connecting 230-kV Transmission Line

Dry Creek Source Substation

The Committee opted to locate the Dry Creek Source Substation on a parcel of land owned by Idaho Power near the existing Dry Creek development.

New Connecting Transmission Routes

- Dry Creek Source 230-kV Transmission Lines

Preferred High-Voltage Transmission Line Routes

Highway 16 Source Substation North Connecting 230-kV Transmission Lines

Utilizing double circuit transmission lines when possible, construct two new 230-kV transmission lines north from the proposed Highway 16 Source Substation following Chapparal Road and heading north along Highway 16 to the border of Ada and Gem counties. At the county line, construct two new route-diverse 230-kV transmission lines north and east to the existing 230-kV transmission line running from Boise Bench Source Substation to the future Shell Rock Source Substation. Where possible, construct transmission lines in valleys outside of viewsheds, avoiding existing residences, irrigated farmland, and floodplains.

- *Avoids farmland and viewsheds and follows Highway 16.*

New Connecting Substations

- Highway 16 Source Substation
- Alternate—Highway 16 Source Substation Alternative

Dry Creek Source Substation 230-kV Transmission Lines

Build two new route-diverse 230-kV transmission lines heading north and east from the proposed Dry Creek Source Substation to the existing transmission line running from Boise Bench Source Substation to the future Shell Rock Source Substation. Construct around the geography of the nearby hills to accommodate the most economic route.

New Connecting Substations

- Dry Creek Source

Alternative Source Substation Locations

Highway 16 Source Substation Alternative

The Committee identified an alternative site for the Highway 16 Source Substation. This location is north of the City of Star, roughly half a mile northeast of the Lanktree Gulch Trailhead, and east of a curve in Highway 16 intersection.

New Connecting Transmission Routes

- Highway 16 Source Substation north connecting 230-kV Transmission Lines
- Highway 16 Source Substation to Gulch Creek Substation (138-kV)
- Highway 16 Source Substation to Sub 1 (138-kV)
- Alternate—Highway 16 Source Substation South Connecting 230-kV Transmission Line Alternative

Alternative High-Voltage Transmission Line Routes

Highway 16 Source Substation South Connecting 230-kV Transmission Line Alternative

Follow preferred route north along Chapparal Road to Highway 16. Construct single circuit 230-kV transmission line south along Highway 16, following the highway to the existing 230-kV transmission line along McMillan Road.

New Connecting Substations

- Highway 16 Source Substation
- Alternate—Highway 16 Source Substation Alternative

High Voltage Transmission Lines and Source Substations—South Ada/Elmore Area

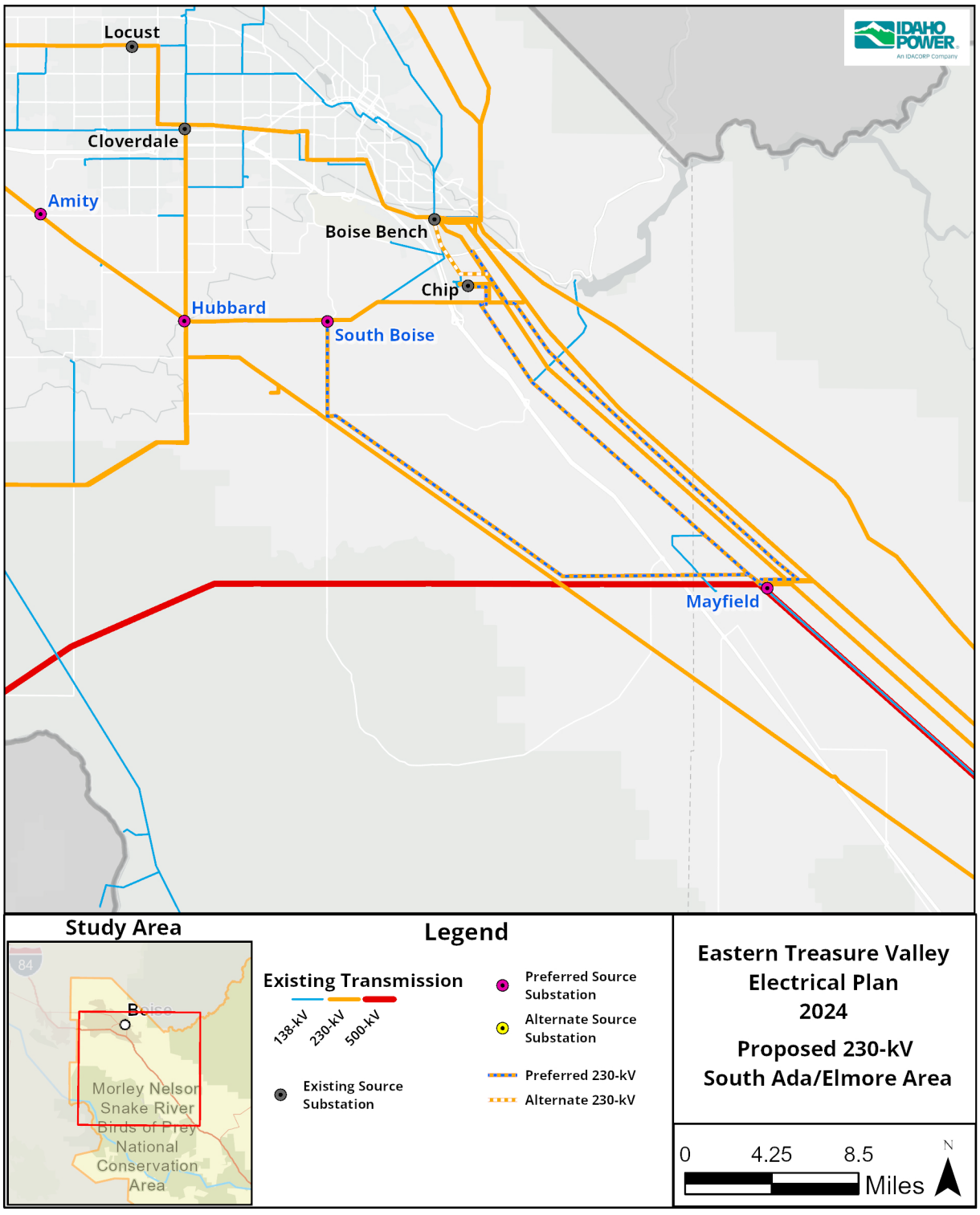

Figure 3
Preferred high voltage transmission lines and source substations—South Ada/Elmore area

Preferred Options

The Committee chose preferred locations for four new source substations and the connecting 230-kV transmission line routes in the South Ada/Elmore area.

Preferred Source Substation Locations

Amity Source Substation

The Committee opted to co-locate Amity Source Substation with the future Amity distribution substation (Sub 2) southwest of the City of Meridian, northwest of the intersection of Amity Road and Ten Mile Road, expanding a parcel of land owned by Idaho Power to accommodate a source substation.

- *Utilizes land owned by Idaho Power and combines facilities.*

New Connecting Transmission Routes

- Amity Source Substation 230-kV In-and-Out Transmission Connections
- Amity Source Substation to Columbia Substation (138-kV)
- Amity Source Substation to WTVEP Area (138-kV)
- Sub 4 to Amity Source Substation (138-kV)
- Sub 17 to Amity Source Substation (138-kV)

Hubbard Source Substation

The Committee opted to co-locate Hubbard Source Substation with the existing Hubbard 230-kV transmission switching station, south of the intersection of Hubbard Road and Cloverdale Road, northwest of the Falcon Creek golf course.

- *Utilizes land owned by Idaho Power and combines facilities.*

South Boise Source Substation

The Committee opted to locate South Boise Source Substation south of the City of Boise, northwest of the intersection of Amyx Lane and Pleasant Valley Road near an existing 230-kV transmission line.

New Connecting Transmission Routes

- Mayfield Source Substation to South Boise Source 230-kV Transmission Line
- South Boise Source Substation 230-kV In-and-Out Transmission Connections
- South Boise Source Substation to Sub 7 (138-kV)
- South Boise Source Substation to Sub 26 (138-kV)
- Sub 8 to South Boise Source Substation (138-kV)

Mayfield Source Substation

The Committee opted to locate Mayfield Source Substation southeast of the future Mayfield Township, southeast of the intersection of Prairie Grass Drive and Baseline Road on a parcel owned by Idaho Power. Mayfield Source Substation will be co-located with a planned 500-kV to 230-kV source substation.

- *Utilizes land owned by Idaho Power and combines facilities.*

New Connecting Transmission Routes

- Mayfield Source Substation to Boise Bench Source Substation 230-kV Transmission Line
- Mayfield Source Substation to Chip Source Substation 230-kV Transmission Line
- Mayfield Source Substation to South Boise Source Substation 230-kV Transmission Line
- Sub 14 to Junction #1 to Mayfield Source Substation (138-kV)
- Alternate—Mayfield Source Substation to Boise Bench Source Substation 230-kV Transmission Line
- Alternate—Sub 25 to Mayfield Source Substation Alternative (138-kV)

Preferred High-Voltage Transmission Line Routes

Amity Source Substation 230-kV In-and-Out Transmission Connections

Build new double circuit 230-kV transmission line south out of Amity Source Substation to Amity Road, connecting to the existing transmission line running southeast from Caldwell Source Substation to Hubbard Source Substation.

New Connecting Substations

- Amity Source Substation
- Sub 2

South Boise Source Substation 230-kV In-and-Out Transmission Connections

Build new double circuit 230-kV transmission line north out of South Boise Source Substation, connecting to the existing transmission line running east from Hubbard Source Substation to Chip Source Substation.

New Connecting Substations

- South Boise Source Substation

Mayfield Source Substation to South Boise Source Substation 230-kV Transmission Line

Build new 230-kV transmission line heading west out of Mayfield Source Substation, following the route of the existing 500-kV transmission line running to Hemingway Source Substation. At the intersection of the 230-kV transmission line running from Hubbard Source Substation to Danskin Power Plant, head northwest using new 230-kV transmission structures constructed as close to existing route as feasible. At the intersection of the existing transmission line with Pleasant Valley Road, head north to the proposed South Boise Source Substation.

- *Follows planned relocation of 230-kV line corridor on Micron land.*

New Connecting Substations

- Mayfield Source Substation
- South Boise Source Substation

Mayfield Source Substation to Chip Source Substation 230-kV Transmission Line

Build new 230-kV transmission line north and west out of Mayfield Source Substation to Chip Source Substation, following the route of the existing 138-kV transmission line running from Junction #1 to DRAM Substation. Replace the 138-kV transmission structures with 230-kV structures, double circuiting the existing 138-kV transmission line on the same structures as the new 230-kV transmission line.

- *Co-locates with existing lines to reduce the impact to wildlife.*

New Connecting Substations

- Mayfield Source Substation

Mayfield Source Substation to Boise Bench Source Substation 230-kV Transmission Line

Build new 230-kV transmission east out of Mayfield Source Substation to the intersection of Base Line Road and Bowns Creek Road. Head north and west between the existing 230-kV transmission lines, until intersecting with the existing 230-kV transmission line running from Boise Bench Source Substation to Chip Source Substation, roughly one mile south of Columbia Road. Run west, then north and west constructing new 230-kV transmission structures as close to the existing 230-kV transmission line running from Chip Source Substation to Mayfield Source Substation as possible. When intersecting Highway 21, begin double circuiting with existing 230-kV transmission line to Boise Bench Source Substation.

New Connecting Substations

- Mayfield Source Substation

Alternative High-Voltage Transmission Line Routes

Mayfield Source Substation to Boise Bench Source Substation 230-kV Transmission Line Alternative

Follow the preferred route between the existing 230-kV transmission line corridor north from Mayfield Source Substation to where it intersects with Columbia Road. Head west along Columbia Road to Technology Way. Construct new 230-kV transmission line following the existing 138-kV transmission line route to Boise Bench Source Substation, double circuiting the existing 138-kV transmission line on the same structures.

New Connecting Substations

- Mayfield Source Substation

138-kV Transmission Lines and Distribution Substation Areas

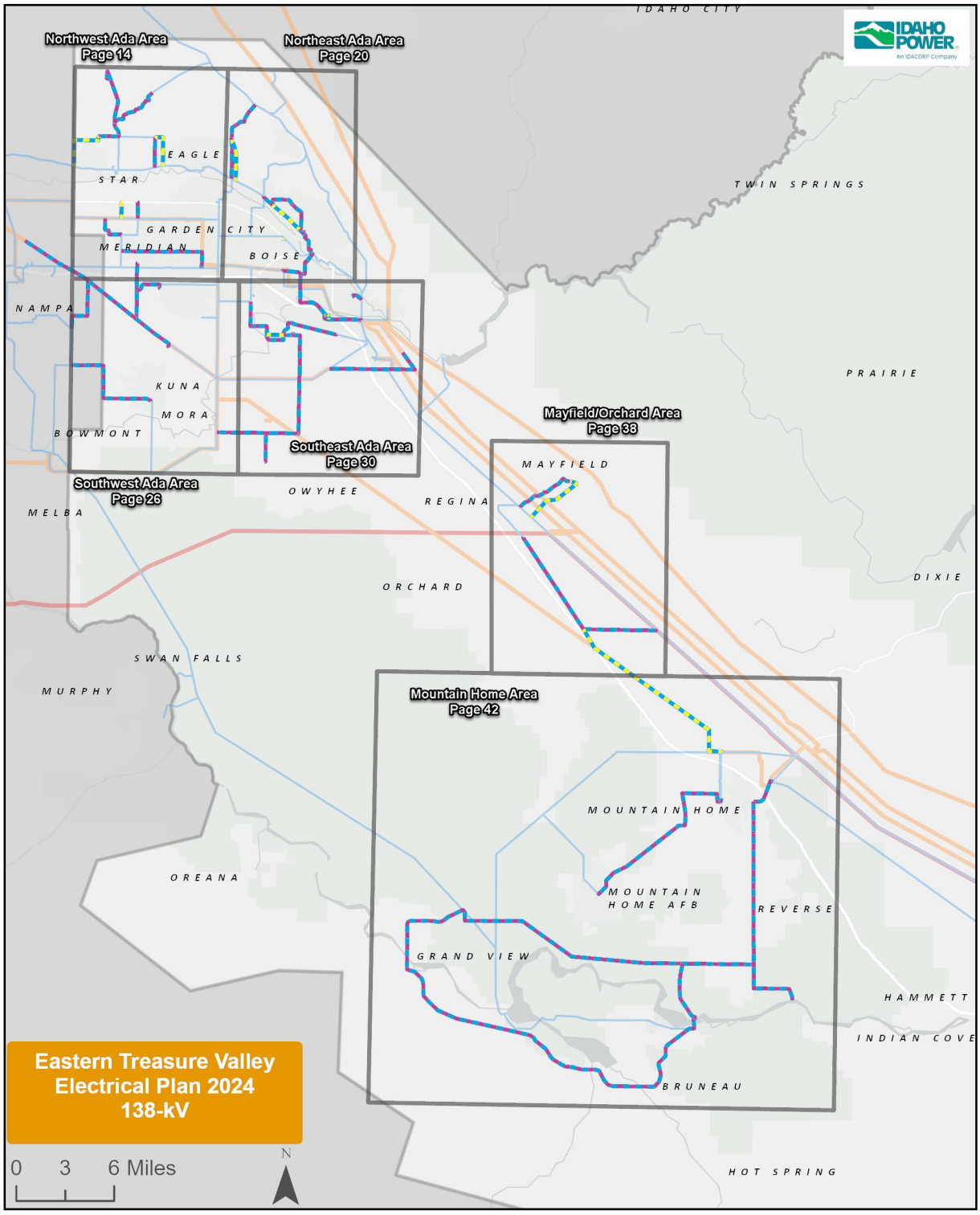

Figure 4
138-kV transmission lines and distribution substation areas

Area 1: Northwest Ada Area

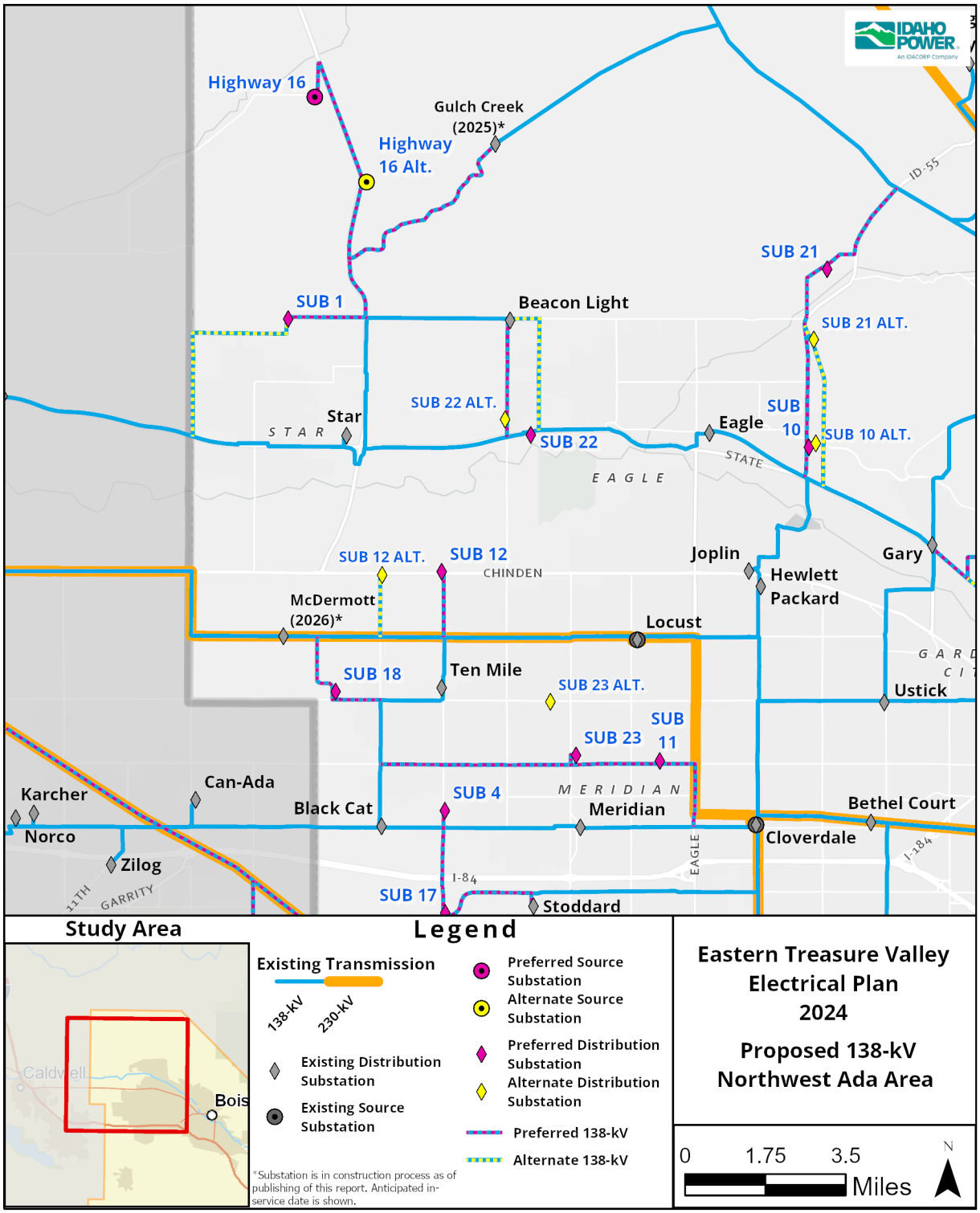

Figure 5
Northwest Ada area

Preferred Options

In the Northwest Ada area, the Committee selected preferred locations for seven new substations and the connecting 138-kV line routes.

Preferred Substation Locations

Distribution Substation 1 (Sub 1):

To be located southeast of the intersection of Beacon Light Road and Wing Road.

New Connecting Transmission Routes

- Highway 16 Source Substation to Sub 1
- Alternate—Sub 1 Alternative Connection

Distribution Substation 4 (Sub 4):

To be located southeast of the intersection of the Boise Valley Railroad and Ten Mile Road.

New Connecting Transmission Routes

- Sub 4 to Amity Source Substation

Distribution Substation 11 (Sub 11):

To be located northeast of the intersection of Fairview Avenue and Webb Road.

New Connecting Transmission Routes

- Sub 11 to Cloverdale to Substation to Meridian Substation
- Sub 23 to Sub 11

Distribution Substation 12 (Sub 12):

To be located northwest of the intersection of Chinden Boulevard and Ten Mile Road.

- *Utilizes land annexed by the city.*

New Connecting Transmission Routes

- Sub 12 to Sub 18
- Ten Mile Substation to Locust Substation to Sub 12

Distribution Substation 18 (Sub 18):

To be located northeast of the intersection of Ustick Road and McDermott Road.

New Connecting Transmission Routes

- McDermott Substation to Sub 18
- Sub 12 to Sub 18
- Sub 18 to Ten Mile Substation
- Sub 18 to Sub 23 to Black Cat Substation

Distribution Substation 22 (Sub 22):

To be located southwest of the intersection of State Street and Old Valley Road.

- *Mixed use and commercial area.*

New Connecting Transmission Routes

- Beacon Light Substation to Sub 22
- Alternate—Beacon Light Substation to Sub 22 Alternative

Distribution Substation 23 (Sub 23):

To be located southeast of the intersection of Carmel Drive and Meridian Road.

New Connecting Transmission Routes

- Sub 18 to Sub 23 to Black Cat Substation
- Sub 23 to Sub 11

Preferred 138-kV Transmission Line Routes

Highway 16 Source Substation to Gulch Creek Substation

Construct new double circuit 138-kV transmission north along Chaparral Road. Head south following Highway 16, to an unnamed road for a future planned community just north of Equest Lane. Construct new single circuit 138-kV transmission east along this road to Gulch Creek Substation.

New Connecting Substations

- Highway 16 Source Substation

Highway 16 Source Substation to Sub 1

Use the new double circuit transmission described in the Highway 16 Source to Gulch Creek Substation connection. At the intersection north of Equest Lane, build new single circuit 138-kV transmission south to Beacon Light Road. Head west along Beacon Light Road to Sub 1.

New Connecting Substations

- Highway 16 Source Substation
- Sub 1

Beacon Light Substation to Sub 22

Construct a new 138-kV transmission south along Linder Road from Beacon Light Substation to the existing 138-kV transmission line along State Street. Upgrade the existing single circuit transmission to double circuit transmission from Linder Road to Sub 22.

New Connecting Substations

- Sub 22

Ten Mile Substation to Locust Substation to Sub 12

Construct a new double circuit 138-kV transmission line north along Ten Mile Road from the existing 138-kV transmission line along McMillan Road to Sub 12.

New Connecting Substations

- Sub 12

Sub 12 to Sub 18

Construct a new double circuit 138-kV transmission line south along McDermott Road from the existing 138-kV transmission line along McMillan Road to Sub 18.

New Connecting Substations

- Sub 12
- Sub 18

McDermott Substation to Sub 18

Use the second circuit described in the Sub 12 to Sub 18 connection to connect McDermott Substation to Sub 18.

New Connecting Substations

- Sub 18

Sub 18 to Ten Mile Substation

Construct a new double circuit 138-kV transmission line east along Ustick Road from Sub 18 to existing 138-kV transmission line at Black Cat Road.

New Connecting Substations

- Sub 18

Sub 18 to Sub 23 to Black Cat Substation

Tap the existing 138-kV transmission line at the intersection of Black Cat Road and Cherry Lane. Construct a new 138-kV transmission line east along Cherry Lane to Meridian Road. Construct double circuit 138-kV transmission north along Meridian Road to Sub 23.

- *Uses an existing transmission line route for a portion of path.*

New Connecting Substations

- Sub 18
- Sub 23

Sub 23 to Sub 11

Use the new double circuit 138-kV transmission line along Meridian Road described in Sub 18 to Sub 23 to Black Cat Substation connection. Construct new 138-kV transmission east along Fairview Avenue to Sub 11.

New Connecting Substations

- Sub 11
- Sub 23

Sub 11 to Cloverdale Substation to Meridian Substation

Construct a new 138-kV transmission line east along Fairview Avenue from Sub 11 to the existing 230-kV transmission line along Eagle Road. Double circuit with this existing 230-kV transmission line south, constructing new 138-kV single circuit transmission line past the railroad and connecting to the existing 138-kV line along Franklin Road.

- *Uses an existing transmission line route for a portion of path.*

New Connecting Substations

- Sub 11

Sub 4 to Amity Source (Continues onto Figure 7)

Construct a new 138-kV transmission line south along Ten Mile Road from Sub 4, past Sub 17 to the Amity Source Substation. Between Sub 17 and the Amity Source Substation, construct the new line as a double circuit 138-kV transmission line.

New Connecting Substations

- Amity Source
- Sub 2
- Sub 4

Alternative Options

The Committee selected alternative options for three future substations.

Sub 12 Alternative:

To be located southeast of the intersection of Chinden Boulevard and Black Cat Road.

New Connecting Transmission Routes

- Sub 12 to Sub 18
- Alternate—Ten Mile Substation to Sub 12 Alternative

Sub 22 Alternative:

To be located southwest of the intersection of Rosslare Drive and Linder Road.

New Connecting Transmission Routes

- Beacon Light Substation to Sub 22
- Alternate—Beacon Light Substation to Sub 22 Alternative

Sub 23 Alternative:

To be located south of Ustick Road and the southwest corner of Settlers Park.

New Connecting Transmission Routes

- Alternate—Sub 23 Alternative Connections

The Committee also selected alternative line routes for the following transmission line sections.

Sub 1 Alternative Connection

Construct a new 138-kV transmission line south along Wing Road to New Hope Road. Continue west to Can Ada Road, constructing south to existing 138-kV transmission line along Highway 44.

New Connecting Substations

- Sub 1

Beacon Light Substation to Sub 22 Alternative

Construct a new 138-kV transmission line from Beacon Light Substation east to Park Lane. Continue south until the intersection with 138-kV transmission line along State Street, double circuiting to Sub 22.

New Connecting Substations

- Sub 22

Ten Mile Substation to Sub 12 Alternative

Construct a new double circuit 138-kV transmission line north along Black Cat Road from existing 138-kV transmission line along McMillan Road to Sub 12 Alternative.

New Connecting Substations

- Sub 12

Sub 23 Alternative Connections

The ETVEP did not identify alternate transmission line routes to connect to the Sub 23 Alternative location. Idaho Power will work with the City of Meridian to determine a transmission line route if the Sub 23 Alternative location is selected.

New Connecting Substations

- Alternate—Sub 23 Alternative

Area 2: Northeast Ada Area

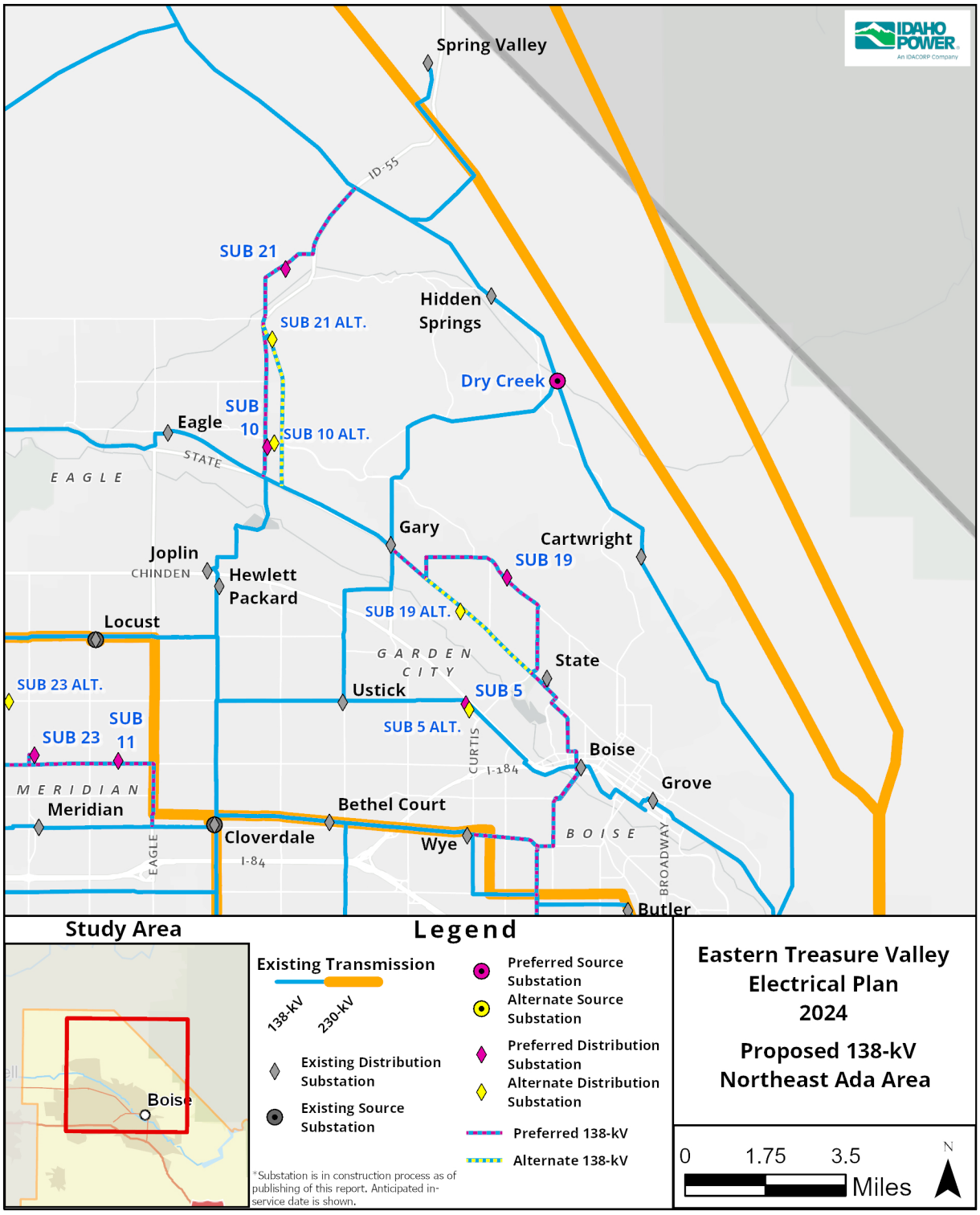

Figure 6
Northeast Ada area

Preferred Options

In the Northeast Ada area, the Committee selected four preferred locations for new distribution substations and the connecting 138-kV transmission line routes.

Preferred Substation Locations

Distribution Substation 5 (Sub 5):

To be located southwest of the intersection of Stockton Street and 44th Street.

New Connecting Substations

- Sub 5 Connections

Distribution Substation 10 (Sub 10):

To be located southeast of the intersection of Hill Road and Highway 55.

New Connecting Transmission Routes

- Eagle Substation to Joplin Substation to Sub 10
- Sub 10 to Gary Substation
- Alternate—Eagle Substation to Joplin Substation to Sub 10 Alternative

Distribution Substation 19 (Sub 19):

To be located east of the intersection of Hill Road and Greer Street.

New Connecting Transmission Routes

- Gary Substation to Sub 19
- Sub 19 to State Substation

Distribution Substation 21 (Sub 21):

To be located south of Brookside Lane and north of Highway 55.

New Connecting Transmission Routes

- Sub 10 to Sub 21
- Sub 21 to Gulch Creek Substation

Preferred 138-kV Transmission Line Routes

Eagle Substation to Joplin Substation to Sub 10

Construct a new double circuit 138-kV transmission line north along Highway 55 from the existing 138-kV transmission line on State Street to Sub 10.

New Connecting Substations

- Sub 10

Sub 10 to Gary Substation

Use the new double circuit 138-kV transmission line described in the Eagle Substation to Joplin Substation to Sub 10 to create a transmission connection between Sub 10 and Gary Substation.

New Connecting Substations

- Sub 10

Sub 5 Connections

Construct a new double circuit 138-kV transmission line southwest along 44th Street from the existing 138-kV transmission line along Stockton Street to Sub 5.

New Connecting Substations

- Sub 5

Sub 10 to Sub 21

Construct a new 138-kV transmission line north along Highway 55 from Sub 10 to Brookside Lane. Continue north along Brookside Lane to Sub 21.

New Connecting Substations

- Sub 10
- Sub 21

Sub 21 to Gulch Creek Substation

Construct a new 138-kV transmission line northeast along Brookside Lane to Highway 55. Continue north along Highway 55 to the existing 138-kV transmission line near Spring Creek Way. Upgrade the existing 138-kV transmission from this connection point north and west to Gulch Creek Substation to double circuit 138-kV transmission.

- *Uses an existing transmission line route for a portion of path.*

New Connecting Substations

- Sub 21

Gary Substation to Sub 19

Following the route of the existing de-energized 69-kV transmission line along State Street, upgrade structures to 138-kV transmission southwest from Gary Substation to Pierce Park Lane. Head north to Castle Drive, then east along Castle Drive to Hill Road. Follow Hill Road southeast to Sub 19.

- *Uses an existing transmission line route for a portion of path.*

New Connecting Substations

- Sub 19

Sub 19 to State Substation

Construct a new 138-kV transmission line southeast along Hill Road from Sub 19 to 36th Street. Continue south along 36th Street to State Street. Head southeast along State Street to Grace Street, upgrading existing de-energized 69-kV transmission to 138-kV transmission line. Continue following route of existing 69-kV transmission line to State Substation, upgrading structures to double circuit 138-kV transmission line.

- *Uses an existing transmission line route for a portion of the path.*

New Connecting Substations

- Sub 19

State Substation to Wye Substation

Upgrade the existing 69-kV transmission line to 138-kV from State Substation to near Boise Substation. Follow existing route to Whitewater Park Boulevard, then head south along Whitewater Park Boulevard to Jordan Street. Follow Jordan Street east to existing 69-kV transmission line, following the existing 69-kV line route to near Boise Substation. Upgrade the existing 69-kV route from near Boise Substation southwest along Americana Boulevard, then south along Latah Street with double circuit 138-kV construction to Rose Hill Street. Turn west at Rose Hill Street and continue upgrading to double circuit 138-kV transmission to Roosevelt Street. At Roosevelt Street, continue upgrading to double circuit 138-kV transmission line west along Rose Hill Street and Franklin Road to Wye Substation.

- *Uses an existing transmission line route for the majority of path.*

Alternative Options

The Committee selected alternative options for four future substations.

Sub 5 Alternative:

To be located north of the intersection of Ustick Road and 43rd Street.

New Connecting Transmission Routes

- Alternate—Sub 5 Alternative Connections

Sub 10 Alternative:

To be located southwest of the intersection of Hill Road and Horseshoe Bend Road.

New Connecting Transmission Routes

- Eagle Substation to Joplin Substation to Sub 10
- Sub 10 to Gary Substation
- Alternate—Eagle Substation to Joplin Substation to Sub 10 Alternative
- Alternate—Sub 10 Alternative to Sub 21 Alternative

Sub 19 Alternative:

To be located southeast of the intersection of State Street and Plantation River Drive.

New Connecting Transmission Routes

- Alternate—Gary Substation to State Substation Alternative

Sub 21 Alternative:

To be located northeast of the intersection of Goose Creek Road and Horseshoe Bend Road.

- Sub 21 to Gulch Creek Substation
- Alternate—Sub 10 Alternative to Sub 21 Alternative

The Committee also selected alternative line routes for the following transmission line sections.

Sub 5 Alternative Connections

Construct a new double circuit 138-kV transmission line southwest along 43rd Street from the existing 138-kV transmission line along Stockton Street to Sub 5.

New Connecting Substations

- Alternate—Sub 5 Alternative

Eagle Substation to Joplin Substation to Sub 10 Alternative

Construct a new double circuit 138-kV transmission line north along Horseshoe Bend Road from existing 138-kV transmission line along State Street to Sub 10.

New Connecting Substations

- Sub 10
- Alternate—Sub 10 Alternative

Sub 10 Alternative to Sub 21 Alternative

Continuing from the alternative transmission line connection of Eagle Substation to Joplin Substation to Sub 10. Construct a new 138-kV transmission line north along Horseshoe Bend Road to Highway 55. Past this point, follow the remainder of the preferred transmission line route from Sub 10 to Sub 21.

New Connecting Substations

- Alternate—Sub 10 Alternative
- Alternate—Sub 21 Alternative

Gary Substation to State Substation Alternative

Upgrade existing de-energized 69-kV transmission line along State Street from Gary Substation to State Substation following a de-energized 69-kV transmission line route.

- *Uses an existing, de-energized 69-kV transmission line route for majority of the path. Some of the transmission structures are already built to 138-kV specifications.*

New Connecting Substations

- Alternate—Sub 19 Alternative

Area 3: Southwest Ada Area

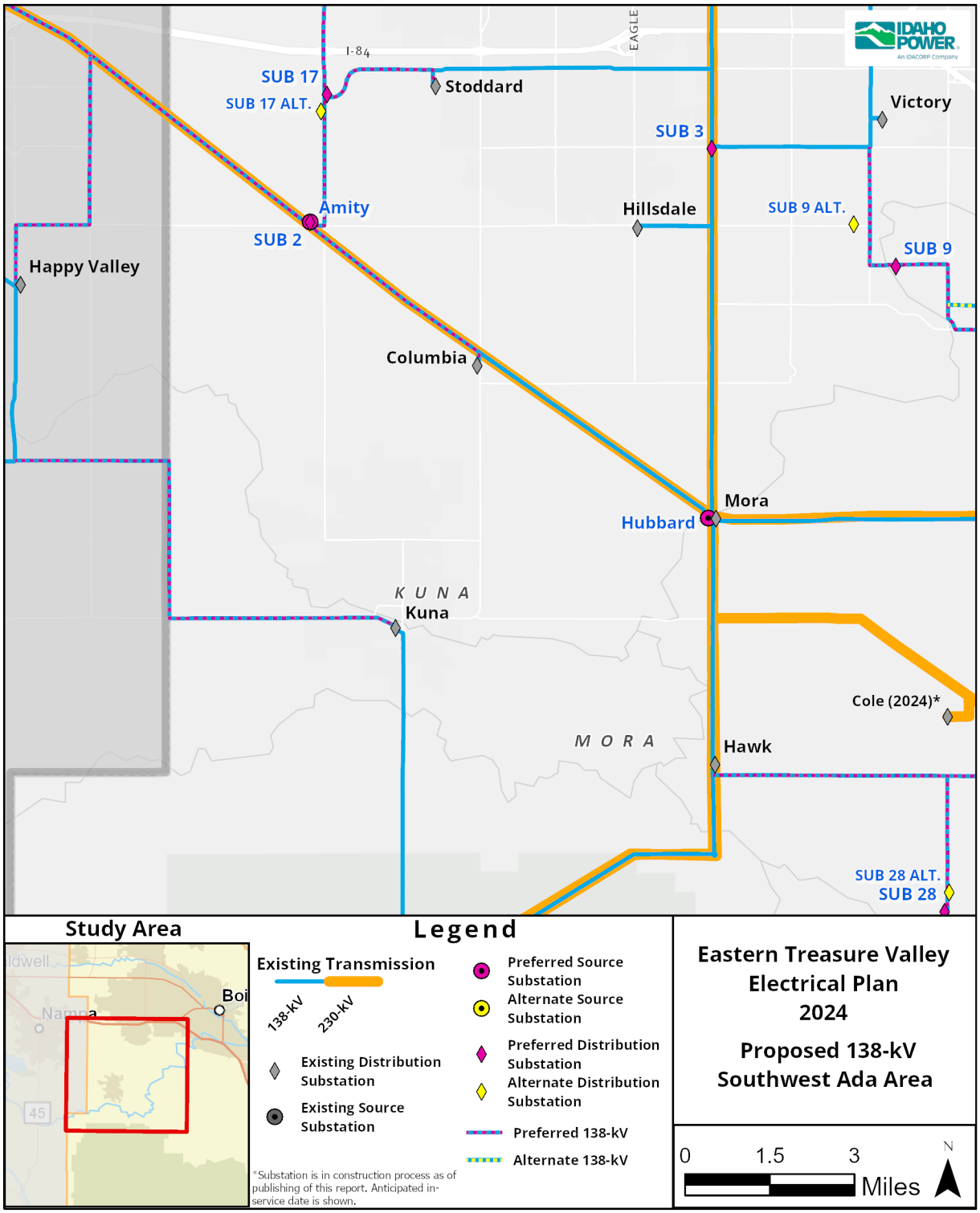

Figure 7
Southwest Ada area

Preferred Options

In the Southwest Ada area, the Committee proposed preferred locations for three new distribution substations and the connecting 138-kV transmission line routes.

Preferred Substation Locations

Distribution Substation 2 (Sub 2):

To be located northwest of the intersection of Amity Road and Ten Mile Road on a parcel of land owned by Idaho Power and co-located with the proposed Amity Source Substation.

- *Utilizes land owned by Idaho Power and combines facilities.*

New Connecting Transmission Routes

- Amity Source Substation 230-kV In-and-Out Transmission Connections
- Amity Source Substation to Columbia Substation
- Amity Source Substation to WTVEP Area
- Sub 4 to Amity Source Substation
- Sub 17 to Amity Source Substation

Distribution Substation 3 (Sub 3):

To be located southwest of the intersection of Victory Road and Cloverdale Road.

New Connecting Transmission Routes

- Sub 3 Connections

Distribution Substation 17 (Sub 17):

To be located northeast of the intersection of Overland Road and Ten Mile Road.

New Connecting Transmission Routes

- Sub 17 to Amity Source Substation
- Sub 17 to Stoddard Substation

Preferred 138-kV Transmission Line Routes

Sub 3 Connections

Construct a new double circuit 138-kV transmission line west from the existing transmission line running south along Cloverdale Road to Sub 3.

New Connecting Substations

- Sub 3

Sub 17 to Stoddard Substation

Construct a new 138-kV transmission line east along Overland Road from Sub 17 to existing transmission line at Tech Lane. Upgrade the existing 138-kV transmission line south of Tech Lane to Stoddard Substation to double circuit.

New Connecting Substations

- Sub 17
- Alternate—Sub 17 Alternative

Sub 17 to Amity Source Substation

Construct a new double circuit 138-kV transmission line south along Ten Mile Road from Sub 17 to Amity Source Substation.

New Connecting Substations

- Amity Source Substation
- Sub 2
- Sub 17
- Alternate—Sub 17 Alternative

Amity Source Substation to WTVEP Area

Double circuiting with existing 230-kV transmission structures running from Caldwell Source Substation to Hubbard Source Substation, and construct a new 138-kV transmission line northwest to WTVEP study area.

- *Uses an existing transmission line route for entirety of path.*

New Connecting Substations

- Amity Source Substation
- Sub 2

Amity Source Substation to Columbia Substation

Double circuiting with existing 230-kV transmission structures running from Caldwell Source Substation to Hubbard Source Substation, and construct a new 138-kV transmission line southeast to Columbia Substation.

- *Uses an existing transmission line route for entirety of path.*

New Connecting Substations

- Amity Source Substation
- Sub 2

Kuna Substation to WTVEP Area

Construct a new 138-kV transmission line leaving Kuna Substation and heading northwest along Shortline Street and turning west on Avalon Street to Kuna Road to the WTVEP study area.

Hawk Substation to Sub 28 (continues to Figure 8)

Construct a new 138-kV line south out of Hawk Substation along Cloverdale Road to Kuna Mora Road. Turn east on Kuna Mora Road and construct a single circuit 138-kV transmission line to Cole Road. Turning south on Cole Road, construct a double circuit 138-kV line to Sub 28.

New Connecting Substations

- Sub 28
- Alternate—Sub 28 Alternative

Alternative Option

The Committee selected an alternative for the one future substation location.

Sub 17 Alternative:

To be located southwest of the intersection of Lamont Road and Ten Mile Road.

New Connecting Transmission Routes

- Sub 17 to Stoddard Substation
- Sub 17 to Amity Source Substation

Area 4: Southeast Ada Area

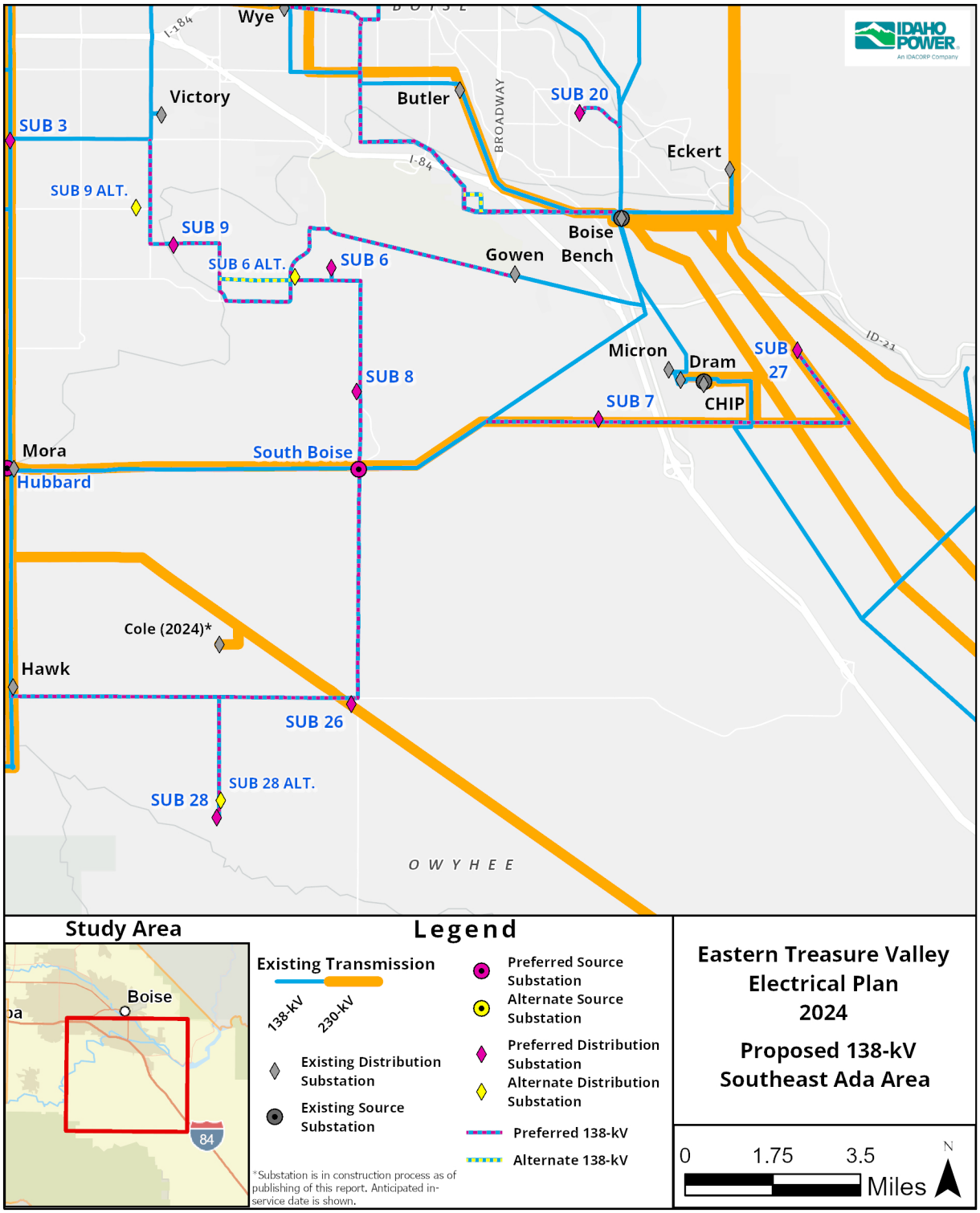

Figure 8
Southeast Ada area

Preferred Options

In the Southeast Ada area, the Committee proposed preferred locations for eight new distribution substations and the connecting 138-kV transmission line routes.

Preferred Substation Locations

Distribution Substation 6 (Sub 6)

To be located north of a planned extension of Lake Hazel Road, south of Gowen Road, and east of Orchard Street.

New Connecting Transmission Routes

- Sub 6 to Gowen Substation
- Sub 6 to Sub 8
- Sub 9 to Sub 6
- Alternate—Sub 9 to Sub 6 Alternative

Distribution Substation 7 (Sub 7)

To be located northwest of the intersection of Freight Street and Warehouse Way.

New Connecting Transmission Routes

- South Boise Source Substation to Sub 7
- Sub 7 to Sub 27

Distribution Substation 8 (Sub 8)

To be located northwest of the intersection of Hollilynn Drive and Pleasant Valley Road.

New Connecting Transmission Routes

- Sub 6 to Sub 8
- Sub 8 to South Boise Source

Distribution Substation 9 (Sub 9)

To be located southeast of the intersection of Desert Avenue and Latigo Drive.

- *Located in low density area.*

New Connecting Transmission Routes

- Sub 9 to Sub 6
- Victory Substation to Sub 9
- Alternate—Sub 9 to Sub 6 Alternative

Distribution Substation 20 (Sub 20)

To be located southwest of the intersection of Parkcenter Boulevard and Lexington Drive.

New Connecting Transmission Routes

- Sub 20 Connections

Distribution Substation 26 (Sub 26)

To be located southwest of the intersection of Kuna Mora Road and Pleasant Valley Road.

New Connecting Transmission Routes

- South Boise Source Substation to Sub 26
- Sub 26 to Sub 28

Distribution Substation 27 (Sub 27)

To be located northwest of the intersection of Columbia Road and Oregon Ridge Road.

New Connecting Transmission Routes

- Sub 7 to Sub 27
- Sub 27 to DRAM Substation

Distribution Substation 28 (Sub 28)

To be located southwest of the intersection of Barker Road and Cole Road.

New Connecting Transmission Routes

- Sub 26 to Sub 28
- Sub 28 to Hawk Substation

Preferred 138-kV Transmission Line Routes

Boise Substation to Boise Bench Source Substation (continues on Figure 6)

Upgrade the existing 69-kV route from Boise Substation southwest along Americana Boulevard, then south along Latah Street with double circuit 138-kV construction to Rose Hill Street. Turn west at Rose Hill Street and continue constructing double circuit 138-kV transmission to Roosevelt Street. Turn south at Roosevelt Street and continue double circuit 138-kV transmission line following the existing 69-kV transmission line south and east to Boise Bench Source Substation.

- *Uses an existing transmission line route for entirety of path.*

Wye Substation to Boise Bench Substation (continues on Figure 6)

Construct new double circuit 138-kV from Wye Substation east on Franklin Road to Rose Hill Street. Turn south on Roosevelt Street, continuing double circuit 138-kV transmission line. Continue constructing new double circuit 138-kV transmission line following the existing 69-kV transmission line south and east to Boise Bench Source Substation.

- *Uses an existing transmission line route for majority of path.*

Victory Substation to Sub 9

Upgrade the existing 138-kV transmission line south from Victory Substation to Victory Road to double circuit 138-kV transmission. Construct a new 138-kV transmission line south along Maple Grove Road from Victory Road to Desert Avenue Heading east along Desert Avenue to Sub 9.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 9
- Alternate—Sub 9 Alternative

Sub 9 to Sub 6

Construct a new 138-kV transmission line leaving Sub 9 east along Desert Avenue. At the intersection with Cole Road, head south to the intersection with Lake Hazel Road, staying east of the New York Canal. Head east along the Lake Hazel Road extension, following the bend north onto Orchard Street, and continuing roughly a quarter of a mile north to the dirt road. Constructing new double circuit 138-kV transmission, follow this dirt road east roughly half a mile then north to Sub 6.

New Connecting Substations

- Sub 6
- Sub 9
- Alternate—Sub 6 Alternative
- Alternate—Sub 9 Alternative

Sub 6 to Gowen Substation

Construct new double circuit 138-kV transmission line west from Sub 6 to Orchard Street. Turn north along Orchard Road and construct single circuit 138-kV transmission line to Gowen Road. Turn east on Gowen Road and continue to Gowen Substation.

New Connecting Substations

- Sub 6
- Alternate—Sub 6 Alternative

Sub 6 to Sub 8

Construct new 138-kV transmission line east along the dirt road described in the Sub 9 to Sub 6 connection. At the intersection with Pleasant Valley Road, turn south and continue to Sub 8.

New Connecting Substations

- Sub 6
- Sub 8
- Alternate—Sub 6 Alternative

Sub 8 to South Boise Source Substation

Construct new 138-kV transmission south along Pleasant Valley Road from Sub 8 to the South Boise Source Substation.

New Connecting Substations

- South Boise Source Substation
- Sub 8

South Boise Source Substation to Sub 7

Upgrade the existing 138-kV transmission line heading east from the South Boise Source Substation to double circuit. Follow the existing transmission line route northeast to where the existing 230-kV transmission line turns east. Construct a new single circuit 138-kV transmission line heading east in the same corridor as the existing 230-kV transmission line to Sub 7.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- South Boise Source Substation
- Sub 7

Sub 7 to Sub 27

Construct a new 138-kV transmission line east along Freight Street and crossing I-84 following the existing 230-kV transmission line route. Continue the new 138-kV transmission line east to where the existing 230-kV transmission line turns northwest. Construct new double circuit 138-kV transmission line east from the point an existing 230-kV transmission line turns north towards Chip Source Substation. Continue east to where an existing 230-kV transmission line turns northwest towards Boise Bench Source Substation. Follow the existing 230-kV transmission line route northwest with double circuit 138-kV transmission line to Sub 27.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 7
- Sub 27

Sub 27 to DRAM Substation

Use the route described in Sub 7 to Sub 27 from Sub 27 to the point at which the 230-kV transmission lines turn north to Chip Source Substation. Tap the existing 138-kV line that connects to DRAM Substation.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 27

South Boise Source Substation to Sub 26

Double circuiting with the proposed 230-kV transmission line running from South Boise Source Substation to the Mayfield Source Substation, install new 138-kV transmission line south along Pleasant Valley Road to the intersection with Kuna Mora Road. Turn west on Kuna Mora Road, installing 138-kV transmission to Sub 26.

- *Uses a proposed 230-kV transmission line route for entirety of path.*

New Connecting Substations

- South Boise Source Substation
- Sub 26

Sub 26 to Sub 28

Construct a new 138-kV transmission line west along Kuna Mora Road from Sub 26 to Cole Road. Construct double circuit 138-kV transmission south on Cole Road to Sub 28.

New Connecting Substations

- Sub 26
- Sub 28
- Alternate—Sub 28 Alternative

Sub 20 Connections

Tap the existing 138-kV transmission line near the intersection of Parkcenter Boulevard and Portside Avenue and construct new double circuit 138-kV transmission line northwest along Parkcenter Boulevard Sub 20.

New Connecting Substations

- Sub 20

Alternative Options

The Committee selected alternate locations for three future substation locations.

Sub 6 Alternative

To be located northeast of the intersection of the future Lake Hazel Road extension and Orchard Street.

New Connecting Transmission Routes

- Sub 6 to Gowen Substation
- Sub 6 to Sub 8
- Sub 9 to Sub 6
- Alternate—Sub 9 to Sub 6 Alternative

Sub 9 Alternative

To be located north of the intersection of Amity Road and Shawnee Way.

New Connecting Transmission Routes

- Sub 9 to Sub 6
- Victory Substation to Sub 9
- Alternate—Sub 9 to Sub 6 Alternative

Sub 28 Alternative

To be located northeast of the intersection of Barker Road and Cole Road, north of a former meat processing plant.

New Connecting Transmission Routes

- Sub 26 to Sub 28
- Sub 28 to Hawk Substation

The Committee also selected alternate line routes for the following transmission line sections.

Wye Substation to Boise Bench Substation Alternative

Follow route described in the preferred transmission line connection between Wye Substation and Boise Bench Substation. North of the Boise Airport near the intersection of Commerce Avenue and Transport Street, construct new double circuit transmission line east along Commerce Avenue to Enterprise Street. Turn south on Enterprise Street to the existing 69-kV transmission line and continue following the preferred route to Boise Bench Substation.

- *Uses an existing transmission line route for portion of path.*

Sub 9 to Sub 6 Alternative

Follow route described in preferred Sub 9 to Sub 6 connection. If constructing a 138-kV transmission line along the Lake Hazel Road extension is infeasible, instead construct a new

138-kV transmission east from the intersection of Cole Road and Latigo Drive east to Orchard Road and continue following preferred route.

New Connecting Substations

- Sub 6
- Sub 9
- Alternate—Sub 6 Alternative
- Alternate—Sub 9 Alternative

Area 5: Mayfield/Orchard Area

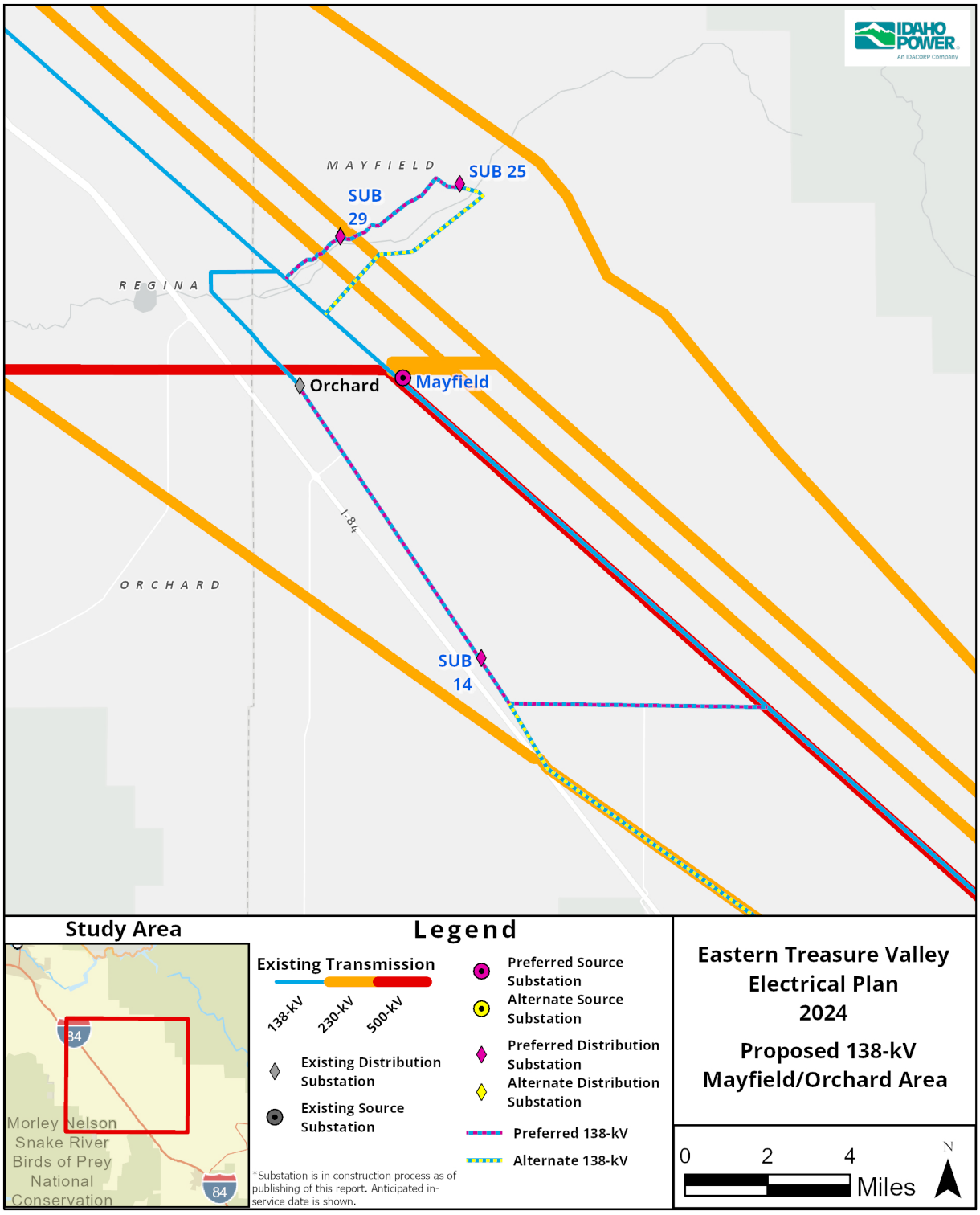

Figure 9
Mayfield/Orchard area

Preferred Options

In the Mayfield/Orchard area, the Committee proposed preferred locations for three new distribution substations and the connecting 138-kV transmission line routes.

Preferred Substation Locations

Distribution Substation 14 (Sub 14)

To be located north of the intersection of Soles Rest Creek Road and Desert Wind Road.

New Connecting Transmission Routes

- Orchard Substation to Sub 14
- Sub 14 to Junction #1 to Mayfield Source Substation
- Alternate—Sub 14 to Elmore Substation Alternative

Distribution Substation 25 (Sub 25)

To be located east of the intersection of Mayfield Road and Allen Lane.

New Connecting Transmission Routes

- Sub 29 to Sub 25
- Alternate—Sub 25 to Mayfield Source Substation Alternative

Distribution Substation 29 (Sub 29)

To be located east of the intersection of Indian Creek Road and Slater Creek Road.

New Connecting Transmission Routes

- Sub 29 to Existing 138-kV Transmission Line Northwest of Mayfield Source Substation
- Sub 29 to Sub 25

Preferred 138-kV Transmission Line Routes

Sub 29 to Existing 138-kV Transmission Line Northwest of Mayfield Source Substation

Tap the existing 138-kV transmission line that heads northwest out of Mayfield Source Substation at the intersection of Indian Creek Road and the existing 138-kV transmission line. Construct a new double circuit 138-kV transmission line northeast along Indian Creek Road to Sub 29.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 29

Sub 29 to Sub 25

Construct a new single circuit 138-kV transmission northeast along Indian Creek Road from Sub 29 to intersection with Mayfield Road. Turn east and follow Mayfield Road to Sub 25.

New Connecting Substations

- Sub 25
- Sub 29

Orchard Substation to Sub 14

Construct a new 138-kV transmission line southwest along Desert Wind Road from Orchard Substation to Sub 14.

New Connecting Substations

- Sub 14

Sub 14 to Junction #1 to Mayfield Source Substation

Construct a new 138-kV transmission line southeast along Desert Wind Road from Sub 14 to the intersection with Tilli Road. Turn east on Tilli Road and continue east to intersection with the existing 138-kV and 500-kV transmission lines. Tap the existing 138-kV transmission line running from Mayfield Source Substation to Junction #1.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 14

Alternative Options

The Committee selected alternate line routes for the following transmission line sections.

Sub 25 to Mayfield Source Substation Alternative

Construct a new 138-kV transmission line east from Sub 25 along Mayfield Road to Cemetery Road. Continue south and west from this intersection, avoiding critical viewsheds in the nearby hills, until tapping the existing 138-kV transmission line running from Mayfield Source Substation to DRAM Substation.

New Connecting Substations

- Sub 25

Sub 14 to Elmore Substation Alternative (continues on Figure 10)

Construct a new 138-kV transmission line southeast along Desert Wind Road from Sub 14 to the existing 230-kV transmission line running from Danskin Source Substation to Hubbard Source Substation. Double circuit south and east along the 230-kV transmission line to Danskin Source Substation. Turn east and construct 138-kV transmission parallel to Mashburn Road to Elmore Substation.

- *Uses an existing transmission line route for majority of path.*

New Connecting Substations

- Sub 14

Area 6: Mountain Home Area

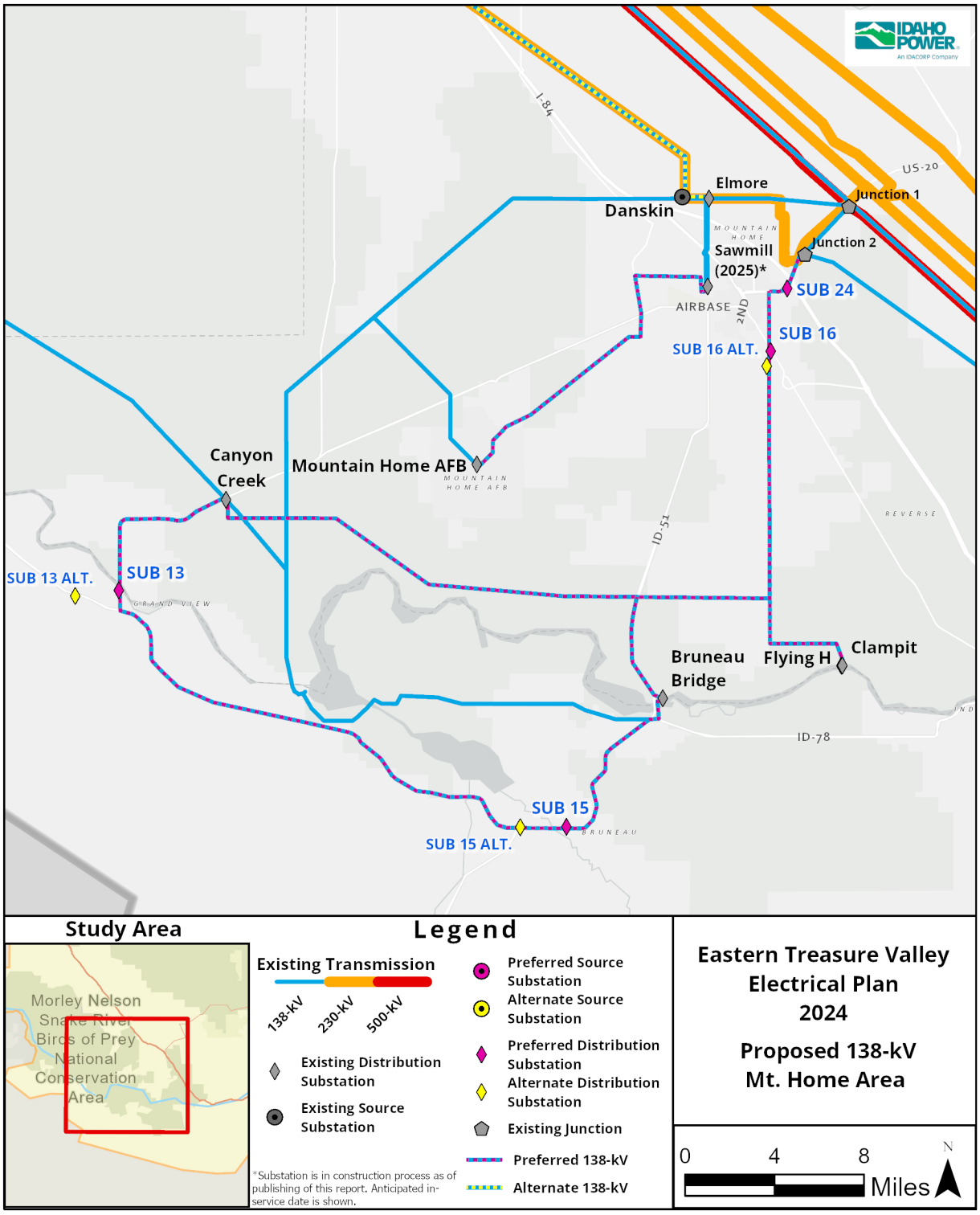

Figure 10
Mountain Home area

Preferred Options

In the Mountain Home area, the Committee proposed four preferred locations for new distribution substations and the connecting 138-kV transmission line routes.

Preferred Substation Locations

Distribution Substation 13 (Sub 13)

To be located north of Highway 78, west of the town of Bruneau, Idaho, and east of a sewer lagoon.

New Connecting Transmission Routes

- Canyon Creek Substation to Sub 13
- Sub 13 to Sub 15

Distribution Substation 15 (Sub 15)

To be located northwest of the intersection of West Street and Grandview Road.

New Connecting Transmission Routes

- Sub 13 to Sub 15
- Sub 15 to Bruneau Bridge Substation

Distribution Substation 16 (Sub 16)

To be located southeast of the intersection of Old Highway 30 and 18th East Street.

New Connecting Transmission Routes

- Sub 16 to Bruneau Bridge Substation
- Sub 24 to Sub 16

Distribution Substation 24 (Sub 24)

To be located near the intersection of NE City View Drive and American Legion Boulevard, where future construction allows.

New Connecting Transmission Routes

- Junction #2 to Sub 24
- Sub 24 to Sub 16

Preferred 138-kV Transmission Line Routes

Sawmill Substation to Mountain Home Air Force Base Substation

Construct a new 138-kV transmission line south from Sawmill Substation to 5th Street. Turn west, continuing to 23rd Street and heading north. At the intersection with 10th Street, turn west and continue to Bypass Road (no connecting road), avoiding the Mountain Home Municipal Airport flight approach boundary. Head south on Bypass Road, crossing Airbase Road and the railroad, connecting to the existing 69-kV transmission line. Upgrade existing 69-kV transmission line route to 138-kV transmission running southwest to Mountain Home Air Force Base Substation.

- *Uses an existing transmission line route for portion of path.*

Junction #2 to Sub 24

Construct a new 138-kV transmission line west from Junction #2 to Highway 20. Turn south on Highway 20, double circuiting with the existing 230-kV transmission line along the highway where possible. Cross I-84 and continue south along American Legion Road to the location of Sub 24.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 24

Sub 24 to Sub 16

Construct a new 138-kV transmission line from Sub 24 following American Legion Boulevard south and west to the intersection with 18th Street. Turn south on 18th Street, crossing the railroad tracks to the location of Sub 16. Along 18th Street between 6th Street and Sub 16, the existing 69-kV transmission line will be rebuilt to 138-kV construction.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 16
- Sub 24

Sub 16 to Bruneau Bridge Substation

Upgrade the existing 69-kV transmission line to 138-kV transmission line south along 18th Street to the unnamed road where the 69-kV transmission line turns east. Continue upgrading the 69-kV transmission line west to the intersection with Highway 51. Turn south and begin constructing a new 138-kV double circuit transmission line along the highway to Bruneau Bridge Substation.

- *Uses an existing transmission line route for majority of path.*

New Connecting Substations

- Sub 16

Flying H and Clampit Substations Connections

Upgrade the existing 69-kV transmission line to 138-kV from Flying H and Clampit Substations to the upgraded 138-kV transmission line between Sub 16 and Bruneau Bridge Substation.

- *Uses an existing transmission line route for entirety of path.*

Bruneau Bridge Substation to Canyon Creek Substation

Use the new double circuit 138-kV transmission line described in the Sub 16 to Bruneau Bridge Substation along Highway 51. Continue upgrading the existing 69-kV transmission line west to Canyon Creek Substation.

- *Uses an existing transmission line route for majority of path.*

Canyon Creek Substation to Sub 13

Construct a new 138-kV transmission line southwest out of Canyon Creek Substation along Highway 167, crossing the Snake River to Sub 13.

New Connecting Substations

- Sub 13

Sub 13 to Sub 15

Construct a new 138-kV transmission line south along Highway 167 from Sub 13 to Highway 78. Head east and south following the curvature of Highway 78 to the junction with Highway 51. Continue east on Highway 51 to the location of Sub 15.

New Connecting Substations

- Sub 13
- Sub 15

Sub 15 to Bruneau Bridge Substation

Construct a new 138-kV transmission line east from Sub 15 following the curvature of Highway 51 to the existing 138-kV transmission line near the junction with Highway 78 near the Snake River. Double circuit the existing 138-kV transmission line north from the junction to Bruneau Bridge Substation.

- *Uses an existing transmission line route for portion of path.*

New Connecting Substations

- Sub 15

Alternative Options

The Committee selected alternate locations for three future substation locations.

Sub 13 Alternate

To be located south of Highway 78, near a gravel pit roughly 1.5 miles west of the City of Grand View, Idaho.

New Connecting Transmission Routes

- Canyon Creek Substation to Sub 13
- Sub 13 to Sub 15

Sub 15 Alternate

To be located north of the junction of Highway 78 and Highway 51.

New Connecting Transmission Routes

- Sub 13 to Sub 15
- Sub 15 to Bruneau Bridge Substation

Sub 16 Alternate

To be located northwest of the intersection of Yuba Street and 18th East Street.

New Connecting Transmission Routes

- Sub 16 to Bruneau Bridge Substation
- Sub 24 to Sub 16

IMPLEMENTATION PLAN

The Committee recommended infrastructure improvements to the Idaho Power system to serve the anticipated load in the Eastern Treasure Valley area at buildout. Not all the infrastructure improvements proposed by the Committee are needed in the near term. Instead, they will be constructed over time based on load growth, reliability needs, and transmission line/transformer capacity. Idaho Power determines which projects are needed on a near-term basis by analyzing the anticipated electrical load growth of geographical areas within its service territory. Based on Idaho Power's load forecasts in 2024, the list below contains infrastructure improvements identified in the ETVEP update that may be needed within the next 10 years. The list is organized alphabetically.

0–10 Years (2024–2034)

- Construct Chip Source Substation.
- Construct Cole 230-kV Substation.
- Construct Gulch Creek Substation.
- Construct Mayfield Area Substation (Sub 29).
- Construct Mayfield 500-kV/230-kV Substation.
- Construct McDermott Substation. Construct Sawmill Substation.
- Construct Sub 1.
- Construct Sub 4.
- Construct Sub 6 OR construct Sub 7. Choice will be dependent on where customer need materializes first. New substation will be utilized to allow expanded service of customers in both areas.
- Construct Sub 11.
- Construct Sub 21.

The preferred options, in the ETVEP, for future substation locations and transmission line routes will be the first solutions investigated for implementation when required by growth. Idaho Power will follow local jurisdictional procedures during the siting, permitting, and construction process. **Facilities identified in this plan will be preferred but are subject to change due to land availability, community and customer preference, and needs discovered during the development phase.** During the development phase, permitting and siting typically takes 12 to 18 months and—depending on the project scale—construction can take an additional 6 to 12 months. The process may include the following steps depending on the impacted community:

- Pre-application meeting with jurisdiction to identify the project need and location(s).
- Public meetings—Outreach and open houses with customers, landowners, and stakeholders.
    - If multiple options exist, they can be vetted here to establish a site preference.
- Permit application—Development and submission by Idaho Power for consideration and review by jurisdictional planning staff.
- Public Hearing—Permit consideration and decision by the jurisdictional hearing body.
    - Idaho Power presents the application, identifying need, location, and site improvements.

    - Public opportunities to provide information toward the decision (testimony).
    - Hearing body decision to approve, approve with conditions, or deny application.
- Construction—Building the identified electrical infrastructure.

Idaho Power believes public engagement during the siting and permitting of facilities is an important part of the planning process. We appreciate communities' willingness to participate in developing the best possible solutions to continue serving customers. We encourage the inclusion of details from this Plan in city and county comprehensive plans. This will inform communities about future utility facilities during their planning process.

Appendix A
Community Goals and Siting Criteria.

As a first step in determining the feasibility of individual line routes and substation locations, the Community Advisory Committee created community goals and siting criteria to guide their choices for line route and substation location alternatives. The goals and criteria on the following lists are **not** weighted or prioritized.

Community Goals and Siting Criteria

Support economic development. Support economic development while protecting the economic engine of agriculture.

Continue to meet power needs and prepare for future unknowns. Ensure all future electrical infrastructure is operational and reliable and keep construction realistic.

Be as efficient as possible. Consider monetary costs to stakeholders; examine the impacts of the line or substation and consider upgrading existing infrastructure as much as possible.

Be aware of sensitive areas/agriculture. Consider the Birds of Prey area; take precautions to minimize stray voltage at dairies and feedlot operations, while also considering irrigation practices.

Support existing businesses, property rights and land uses (e.g., historic sites, industries, Air Force Base). Accommodate existing growth while planning for change in existing growth areas and supporting future community development; consider what would be impacted if a disaster were to occur.

Consider community character. Take urban visual impacts into account and avoid cutting communities in half, while being sensitive to each community's unique environment and downtown areas.

Comply with comprehensive plans. Be flexible for future unplanned changes; site infrastructure consistent with local agency plans and actively participate in updates of comprehensive plans.

Areas Where Future Infrastructure Should be Sited	Areas to Avoid when Siting Future Infrastructure
Industrial areas	Parks/Schools/Highly populated areas
Along transportation corridors and roadways	Foothills/Viewsheds/Ridgelines
Upgrade existing electrical infrastructure	Airport approach zones/AFB flight corridors
Areas where transmission and/or substations will be of the highest and best use	Historically sensitive areas
Along existing and/or planned electrical corridors	Irrigated farmland
Near areas where energy is generated	Near natural waterways and existing canals

Appendix B
Small Mapping Team Alternatives.

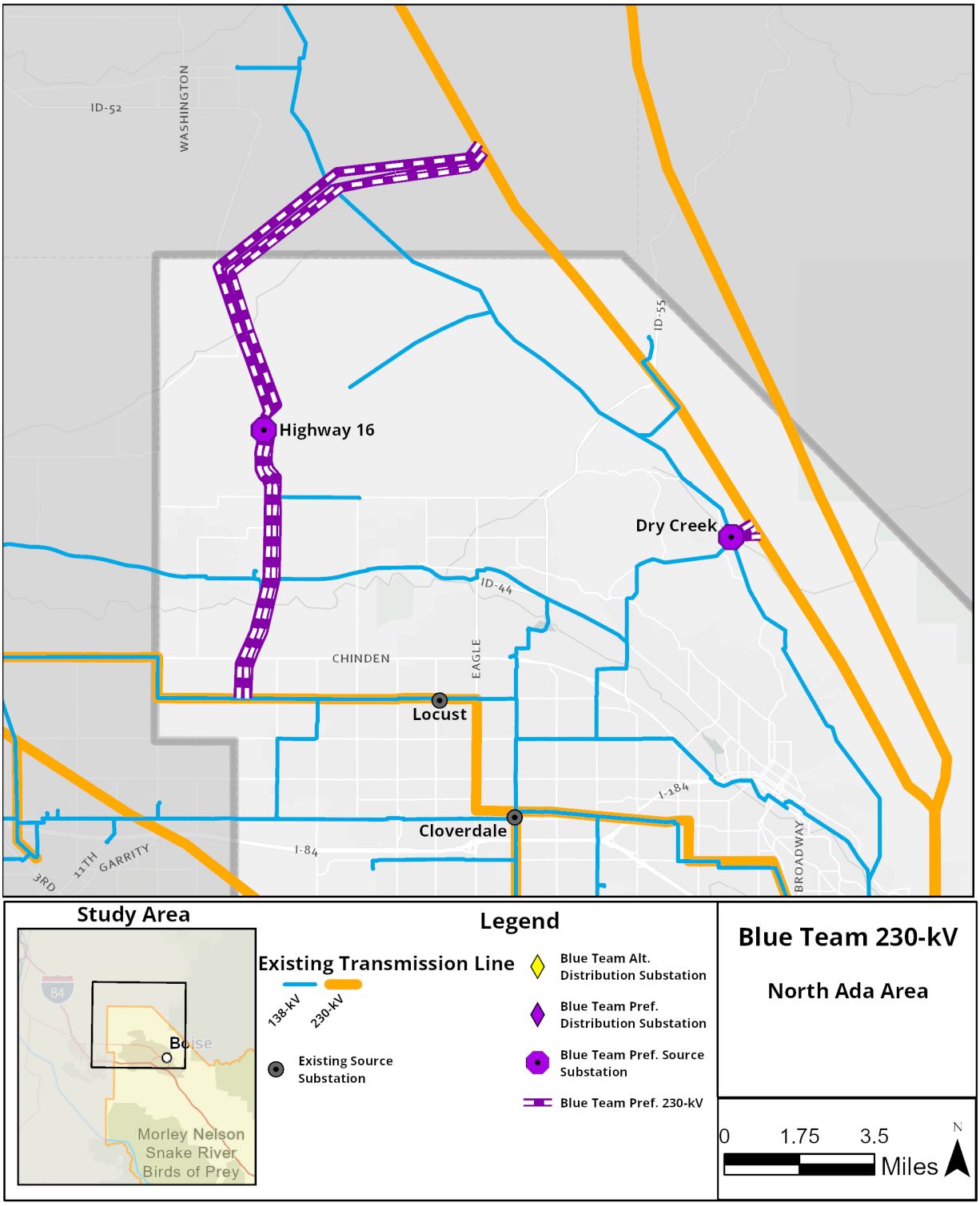

Figure 11
Blue Team preferred high voltage transmission lines and source substations—North Ada area

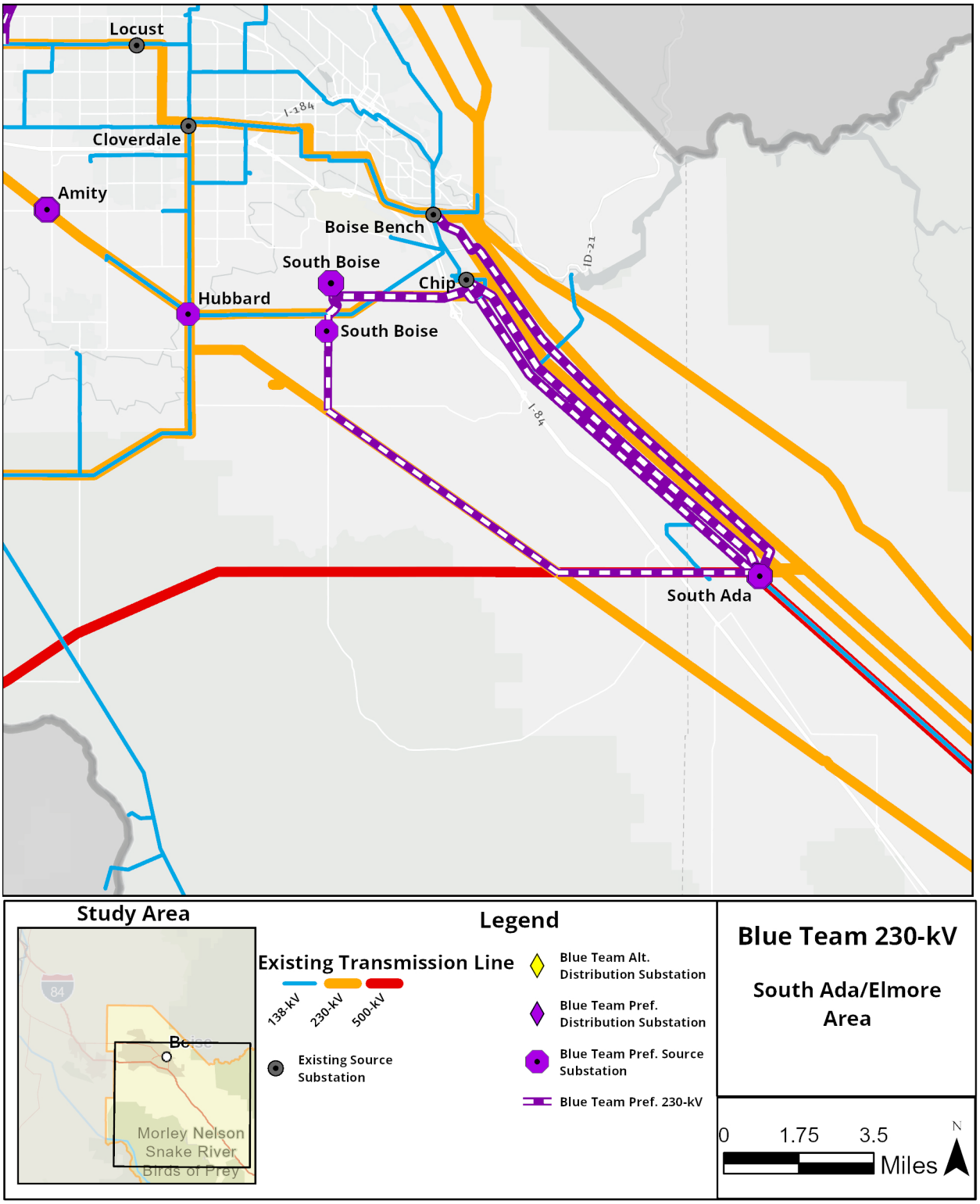

Figure 12
Blue Team preferred high voltage transmission lines and source substations—South Ada/Elmore area

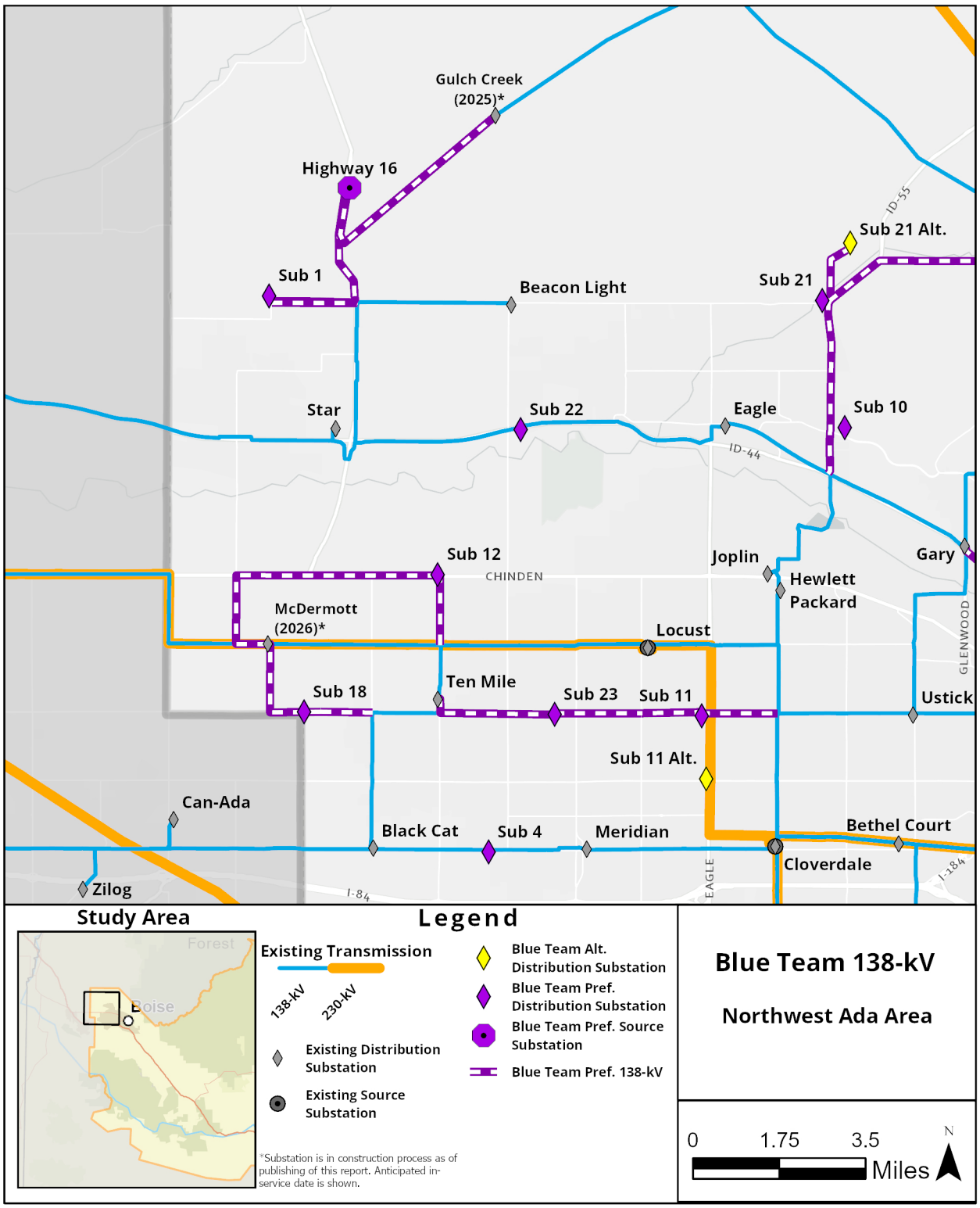

Figure 13
Blue Team 138-kV transmission lines and distribution substations—Northwest Ada area

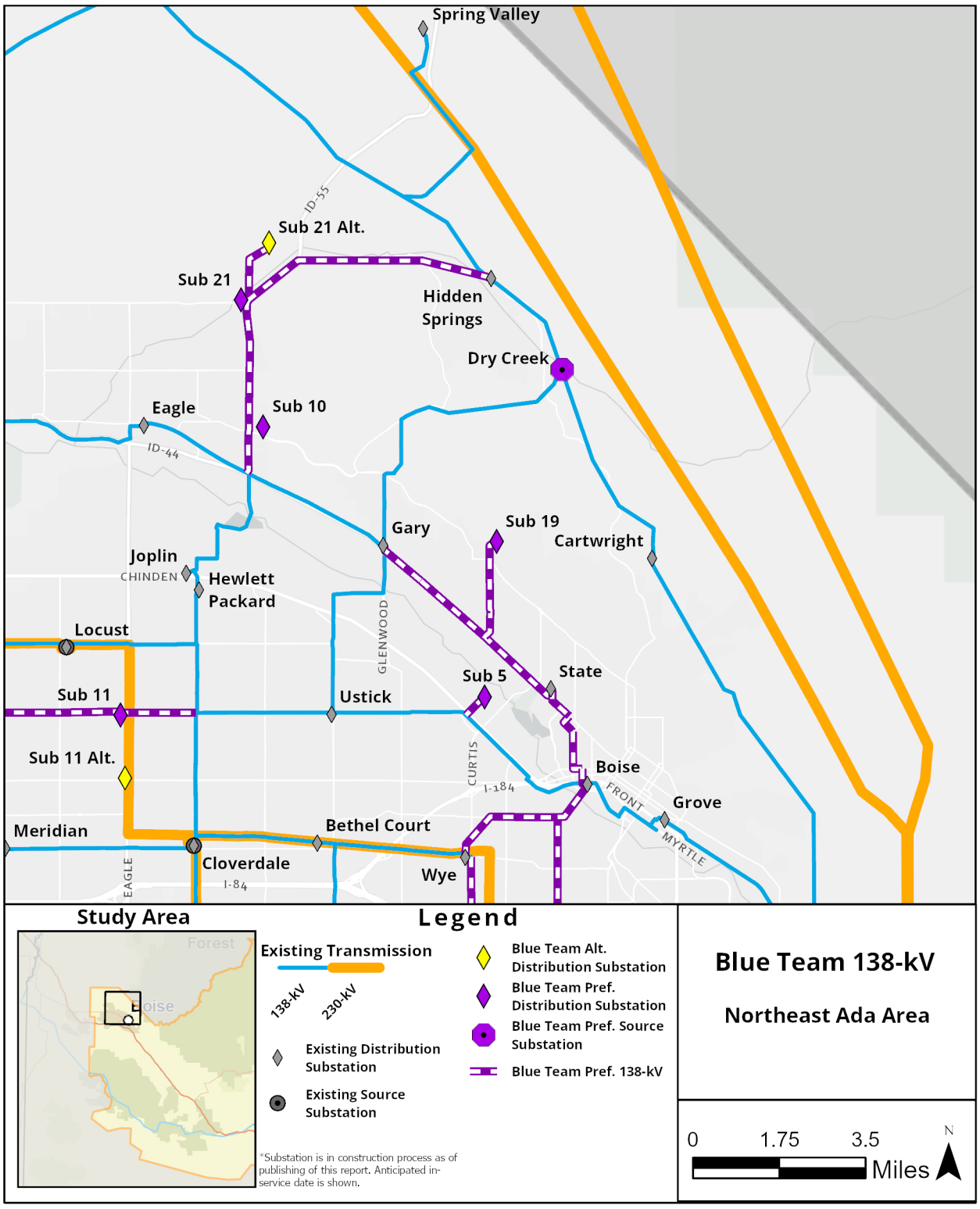

Figure 14
Blue Team 138-kV transmission lines and distribution substations—Northeast Ada area

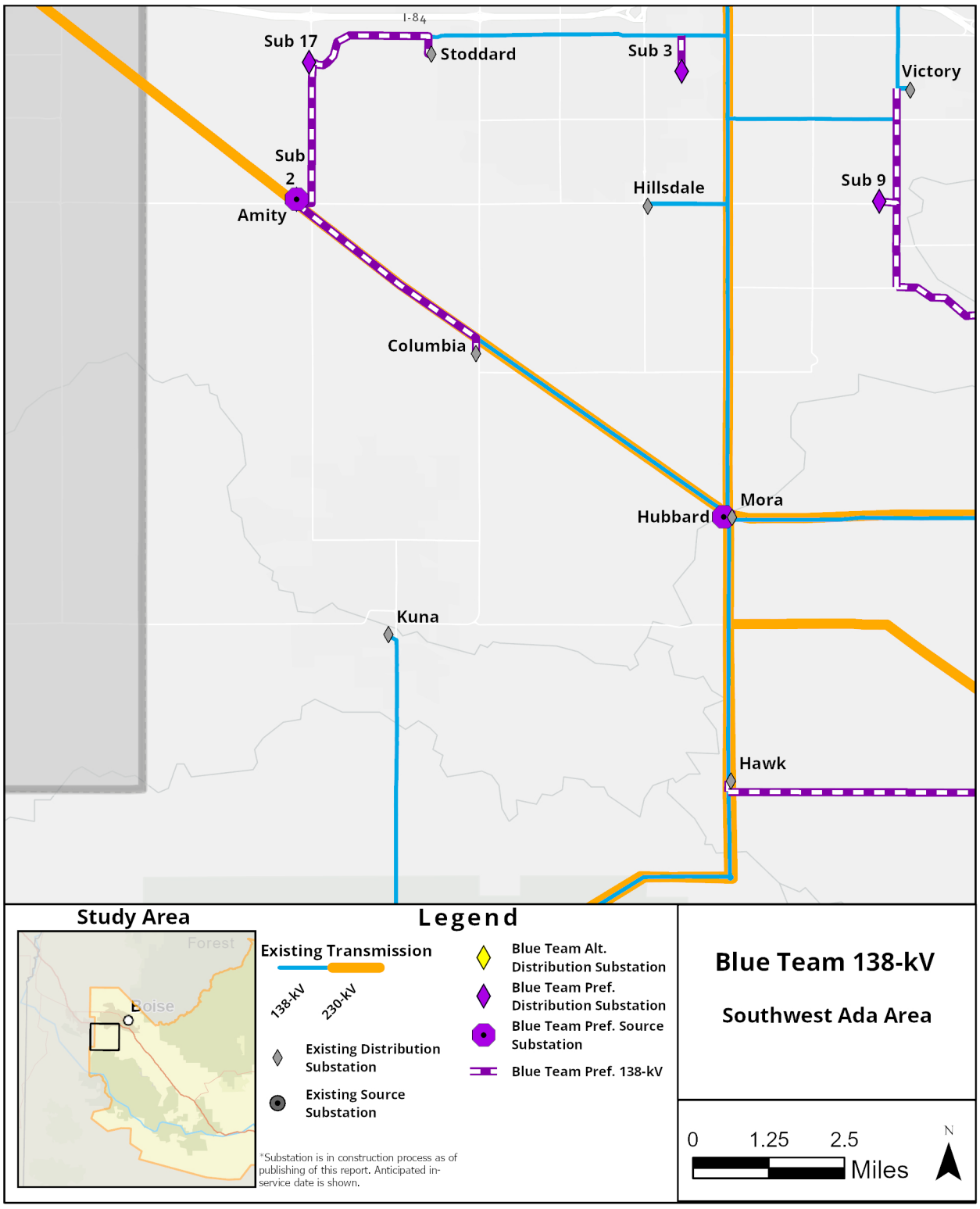

Figure 15
Blue Team 138-kV transmission lines and distribution substations—Southwest Ada area

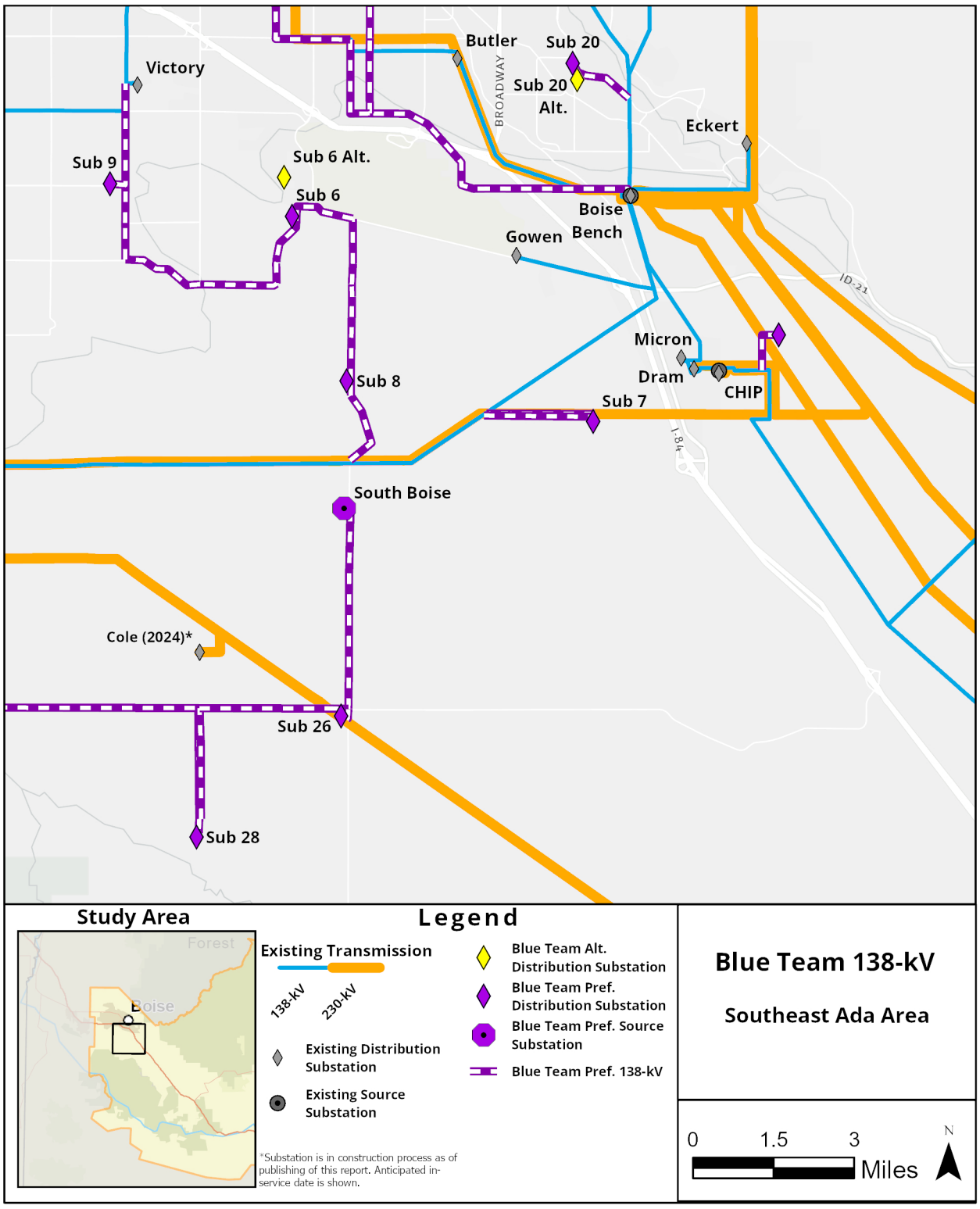

Figure 16
Blue Team 138-kV transmission lines and distribution substations—Southeast Ada area

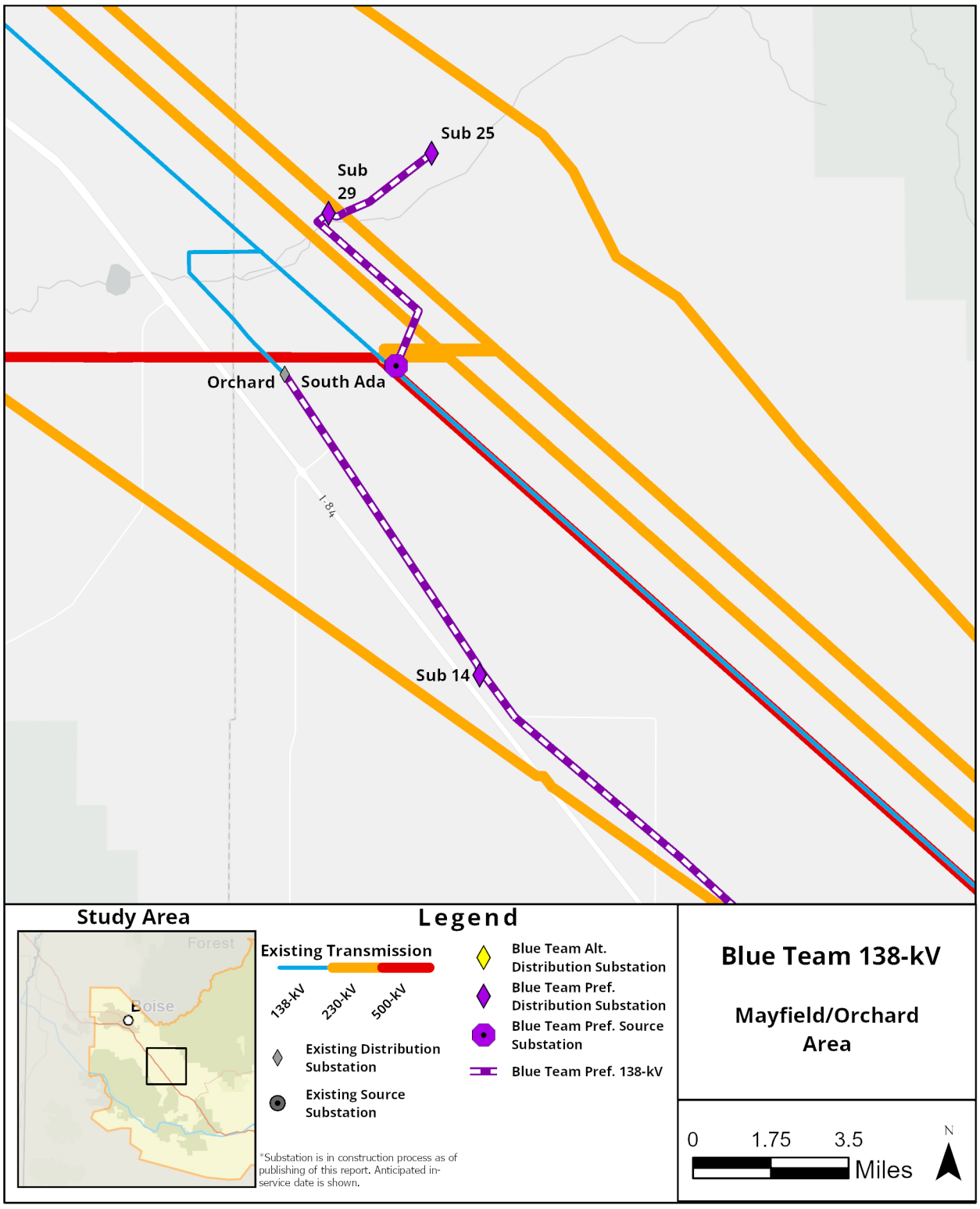

Figure 17
Blue Team 138-kV transmission lines and distribution substations—Mayfield/Orchard area

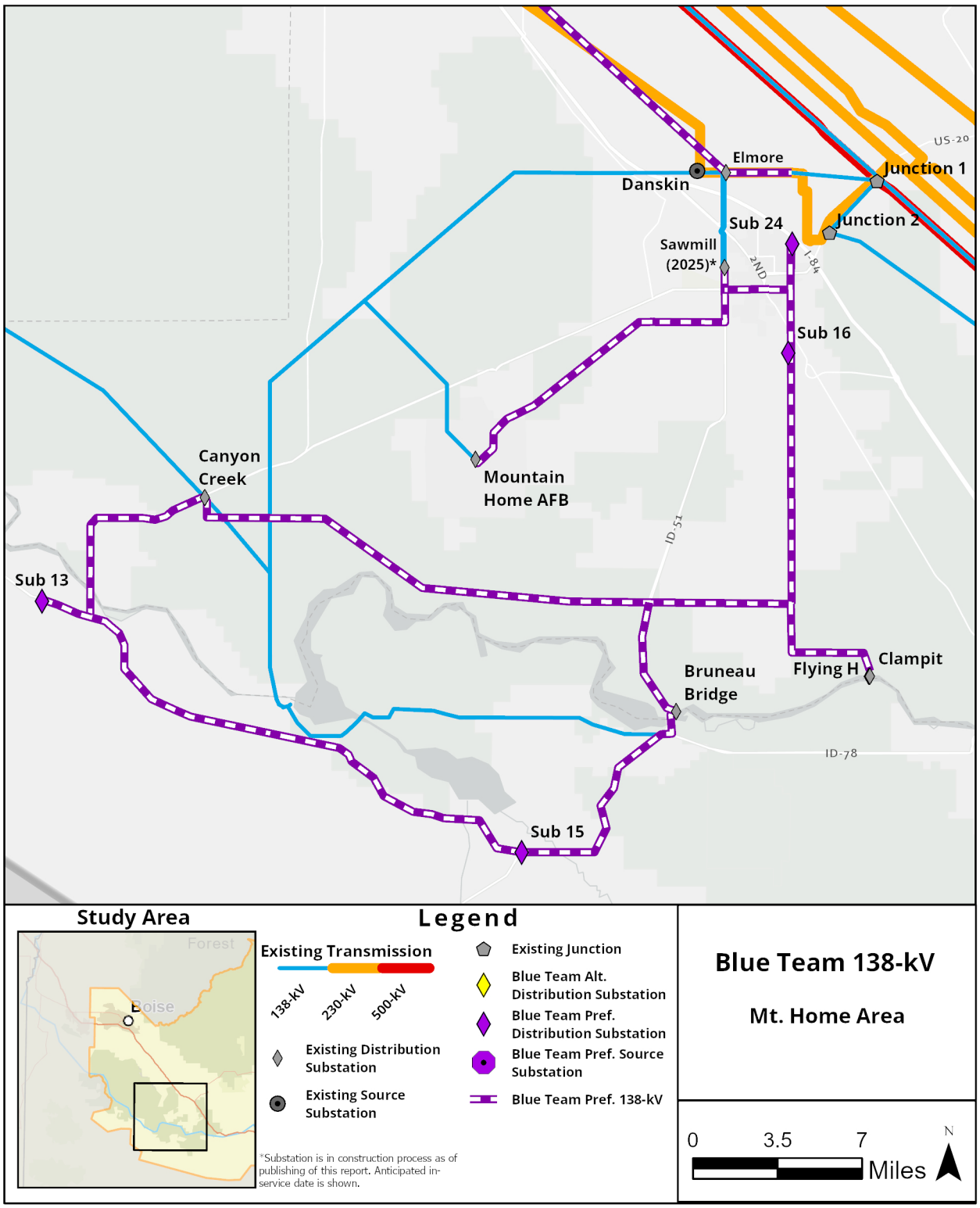

Figure 18
Blue Team 138-kV transmission lines and distribution substations—Mountain Home area

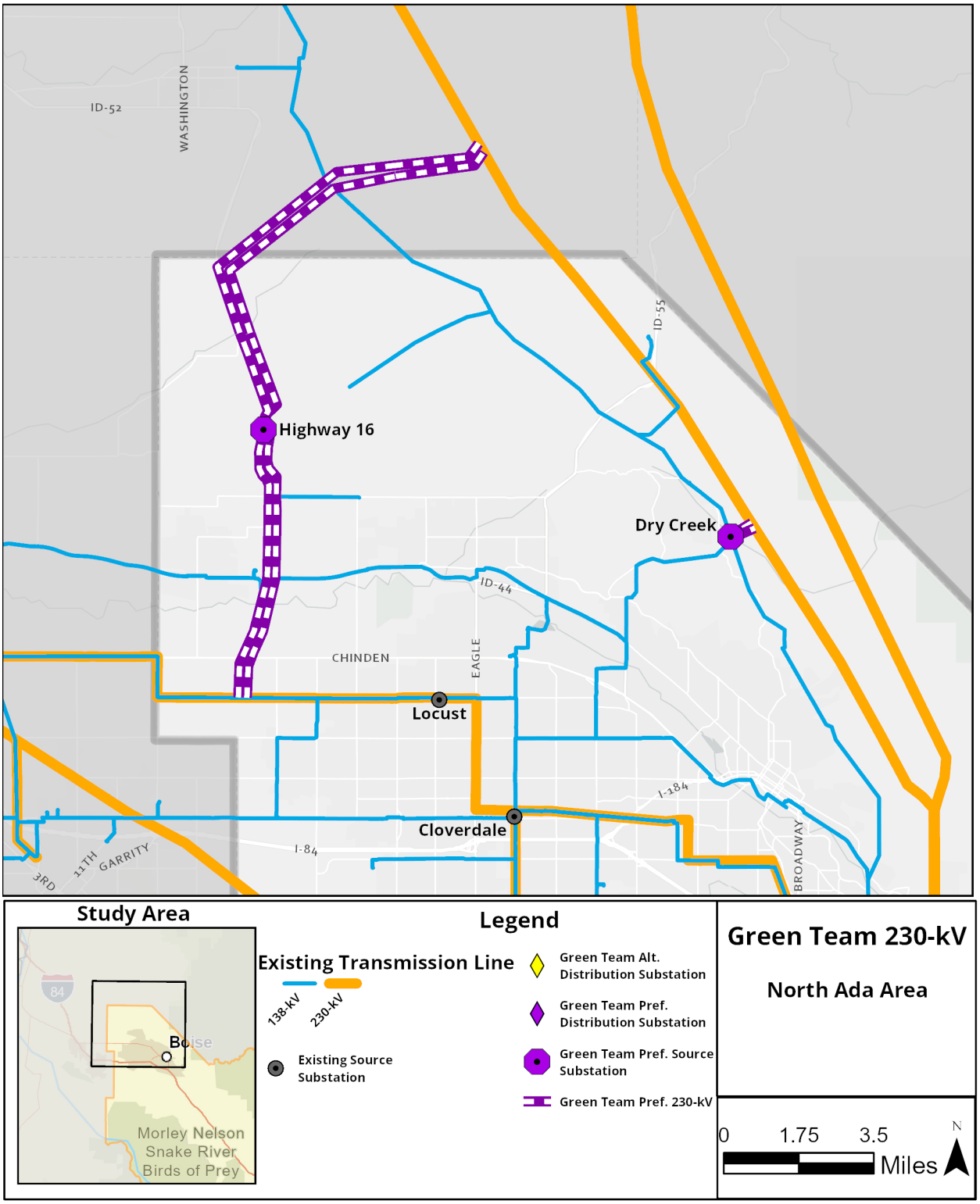

Figure 19
Green Team preferred high voltage transmission lines and source substations—North Ada area

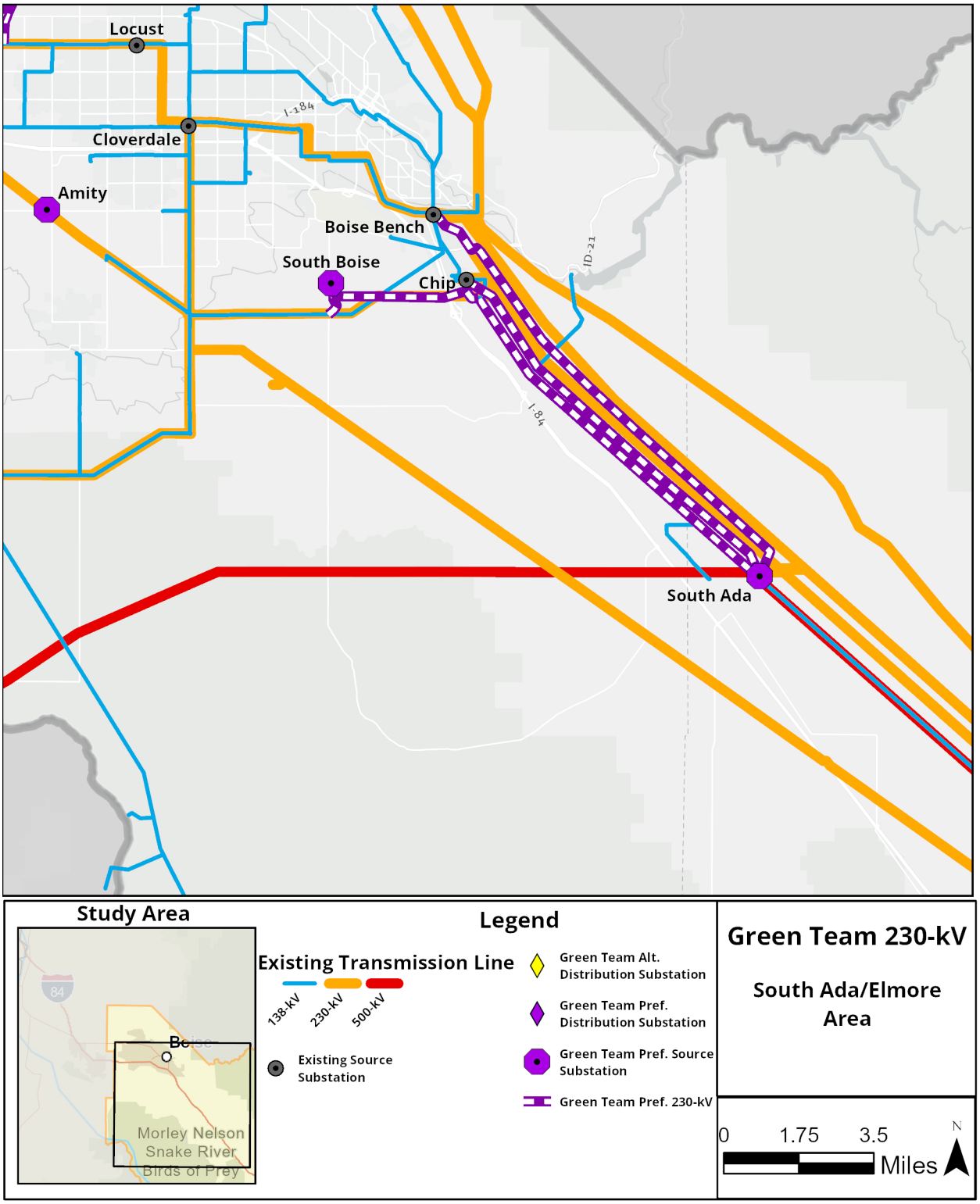

Figure 20
Green Team preferred high voltage transmission lines and source substations—South Ada/Elmore area

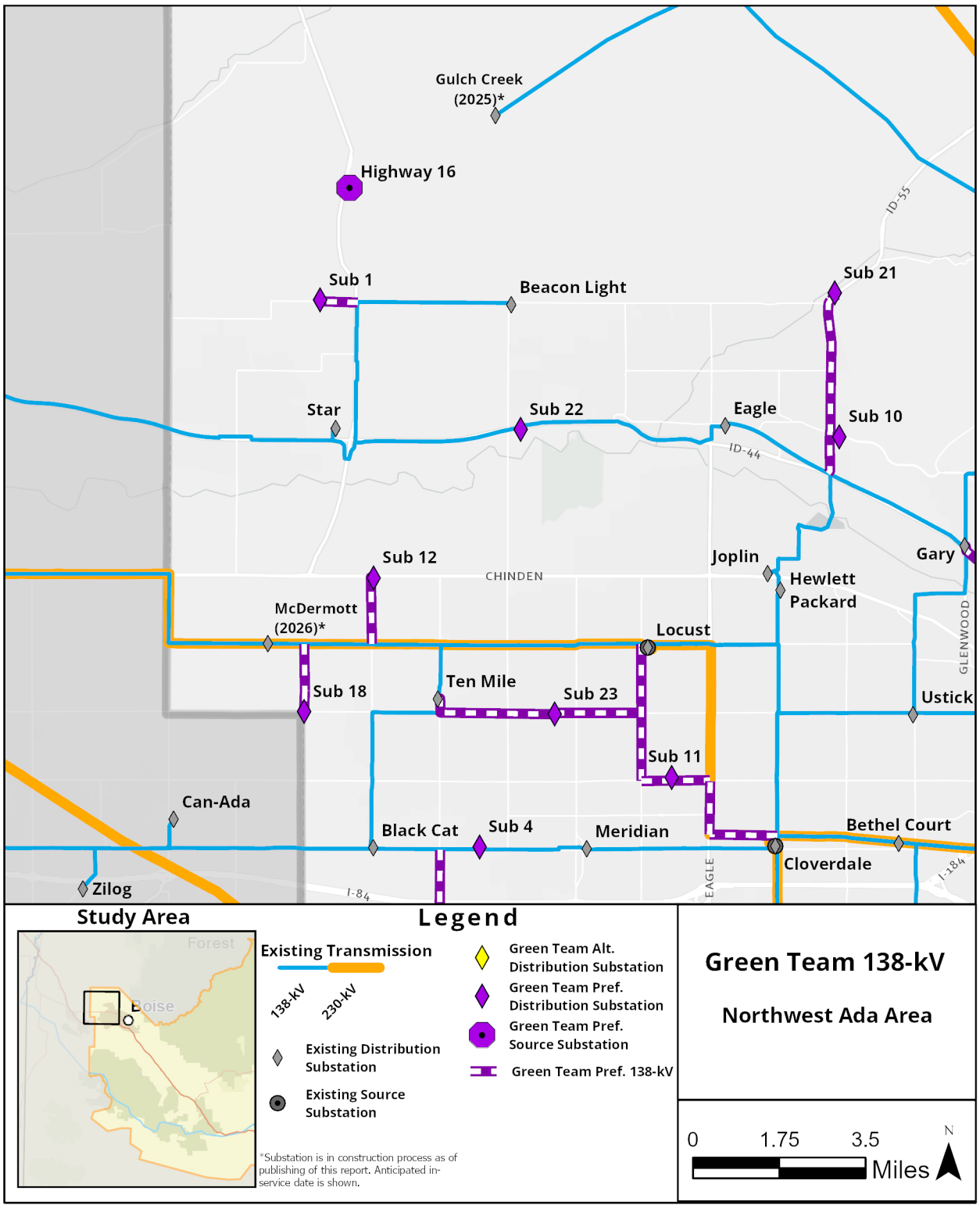

Figure 21
Green Team 138-kV transmission lines and distribution substations—Northwest Ada area

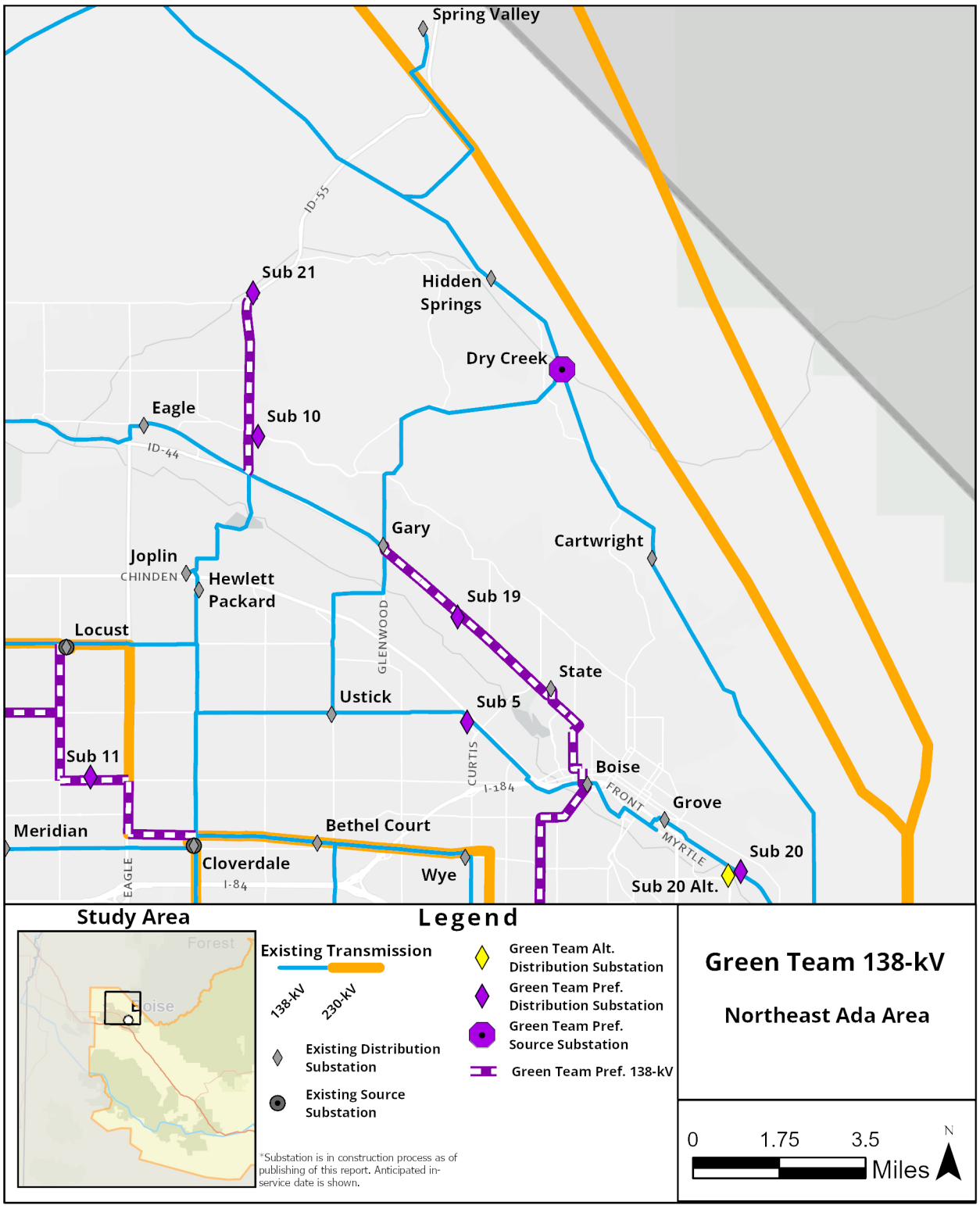

Figure 22
Green Team 138-kV transmission lines and distribution substations—Northeast Ada area

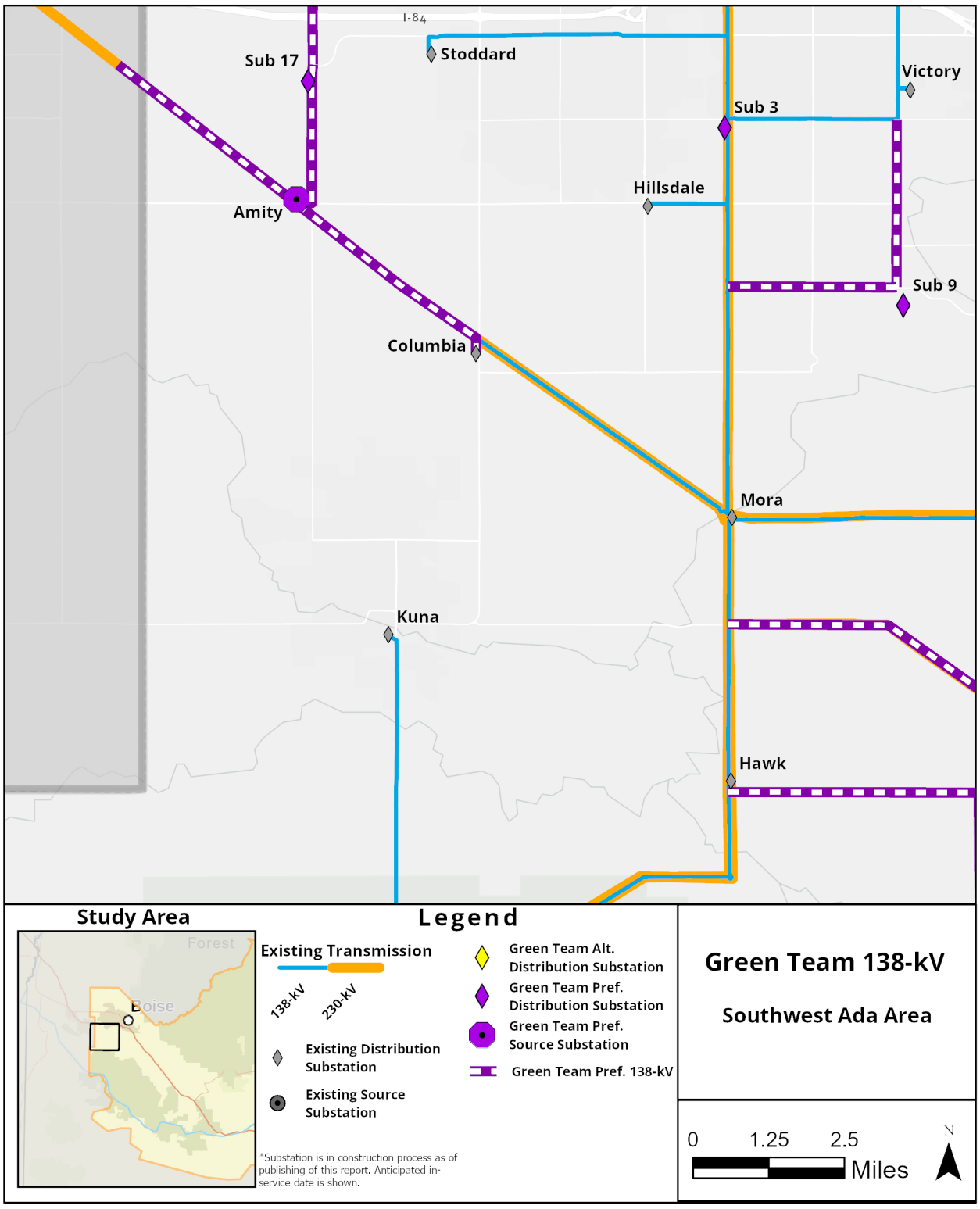

Figure 23
Green Team 138-kV transmission lines and distribution substations—Southwest Ada area

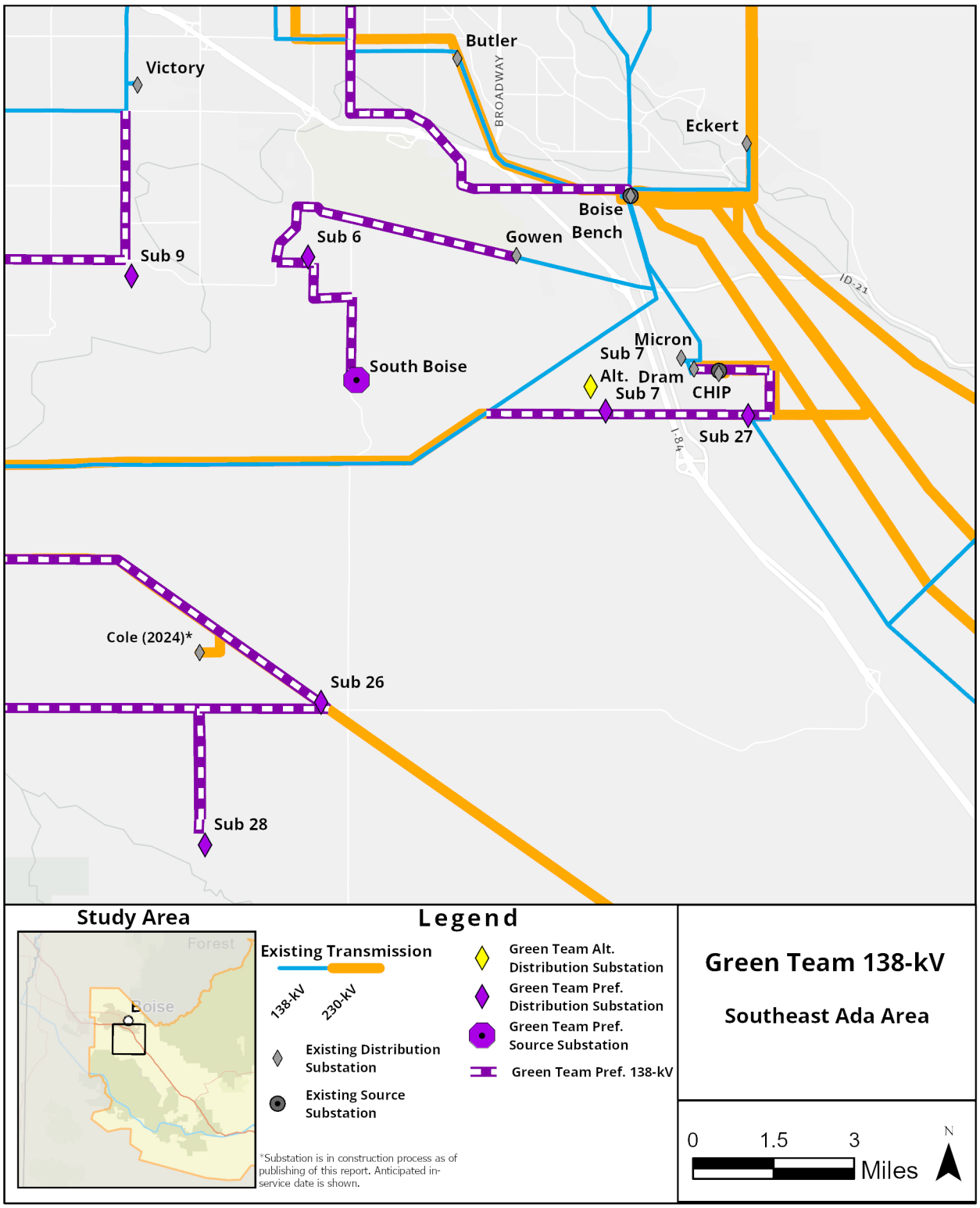

Figure 24
Green Team 138-kV transmission lines and distribution substations—Southeast Ada area

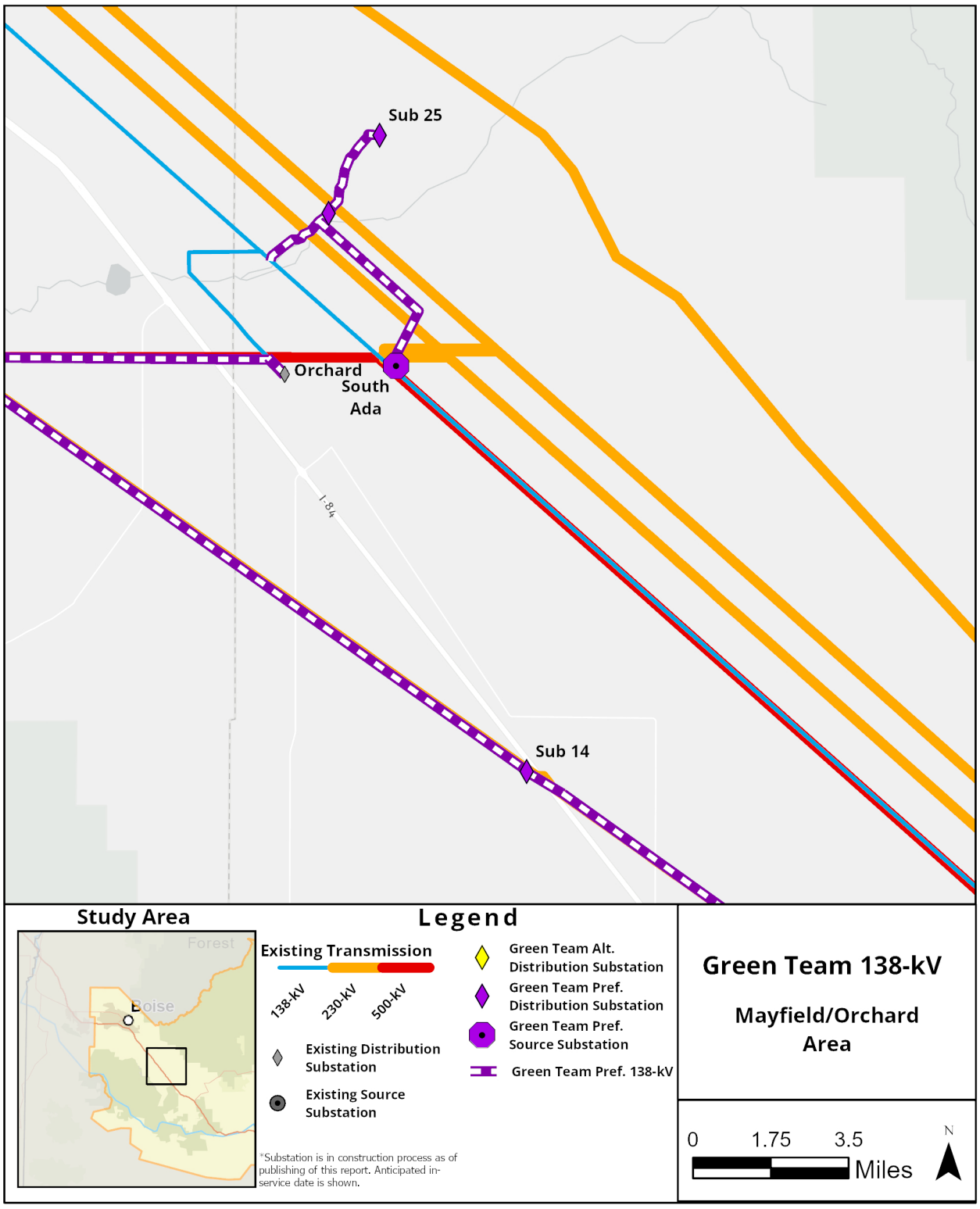

Figure 25
Green Team 138-kV transmission lines and distribution substations—Mayfield/Orchard area

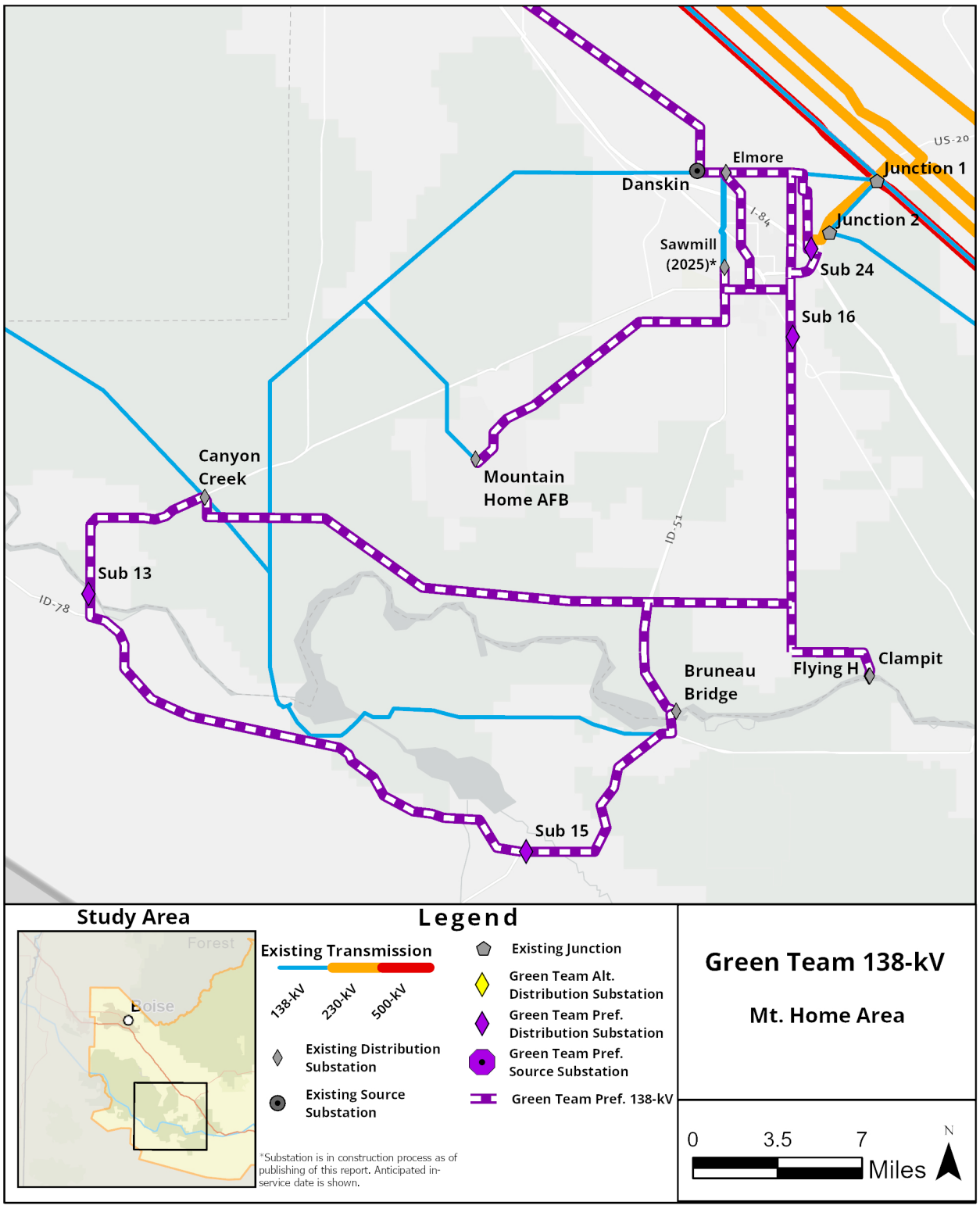

Figure 26
Green Team 138-kV transmission lines and distribution substations—Mountain Home area

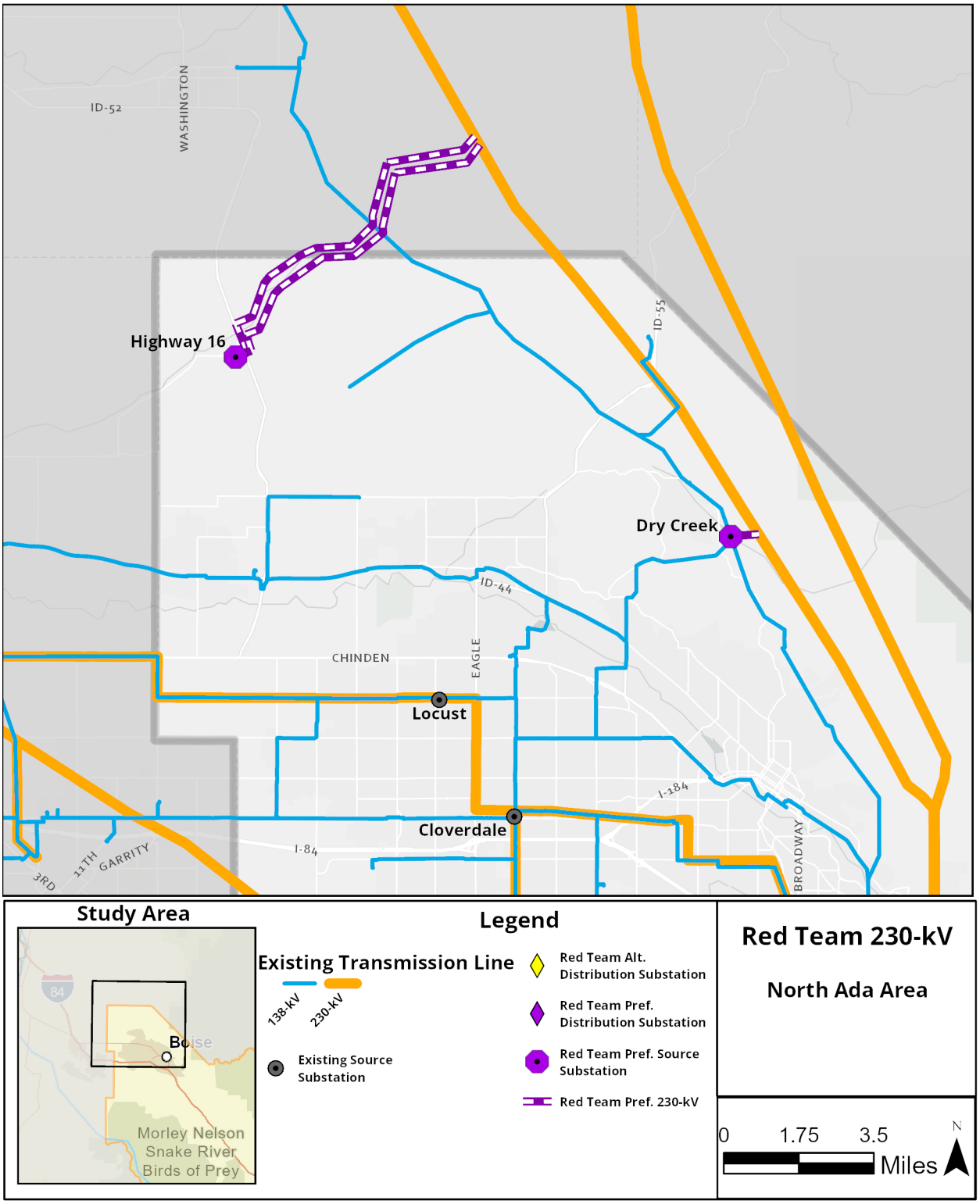

Figure 27
Red Team preferred high voltage transmission lines and source substations—North Ada area

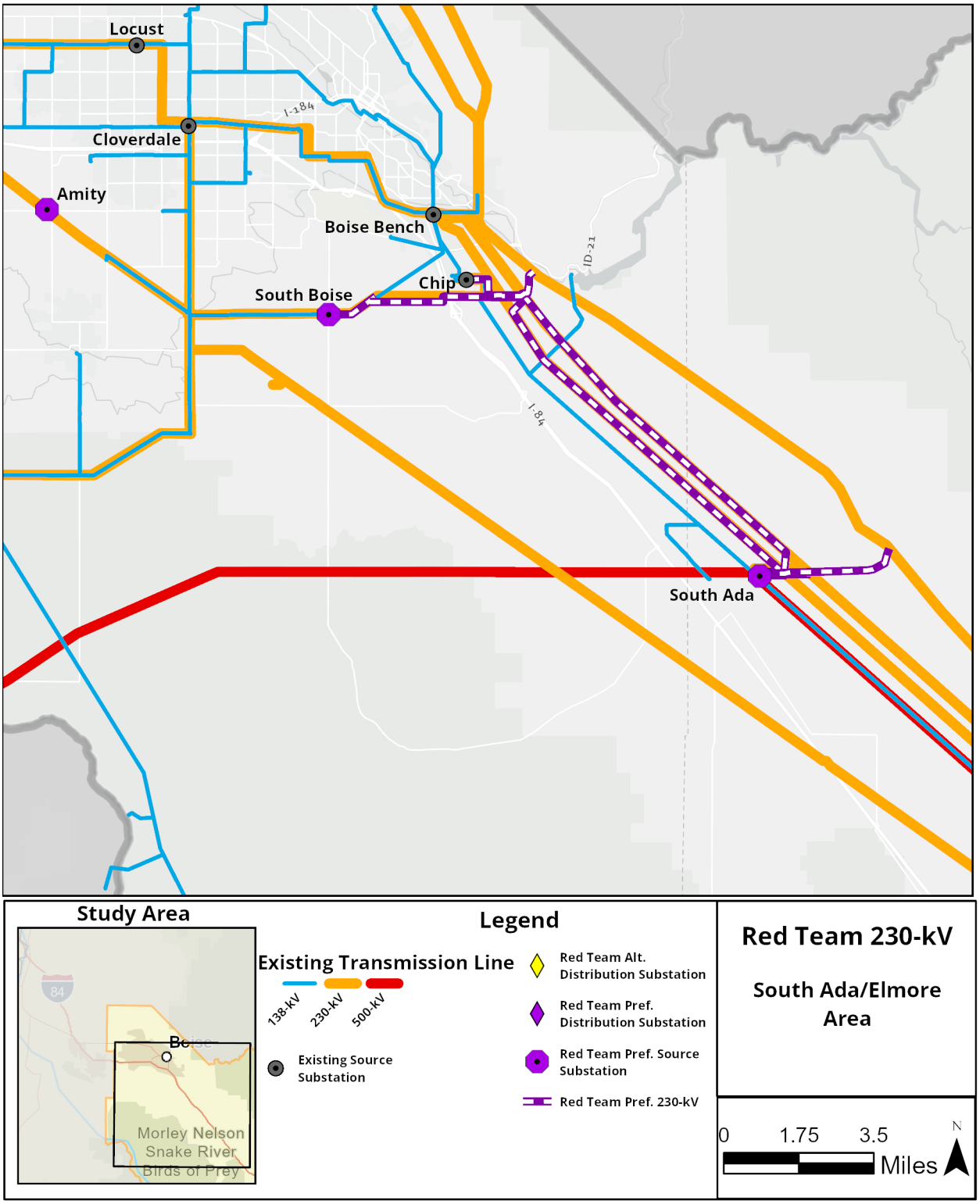

Figure 28
Red Team preferred high voltage transmission lines and source substations—South Ada/Elmore area

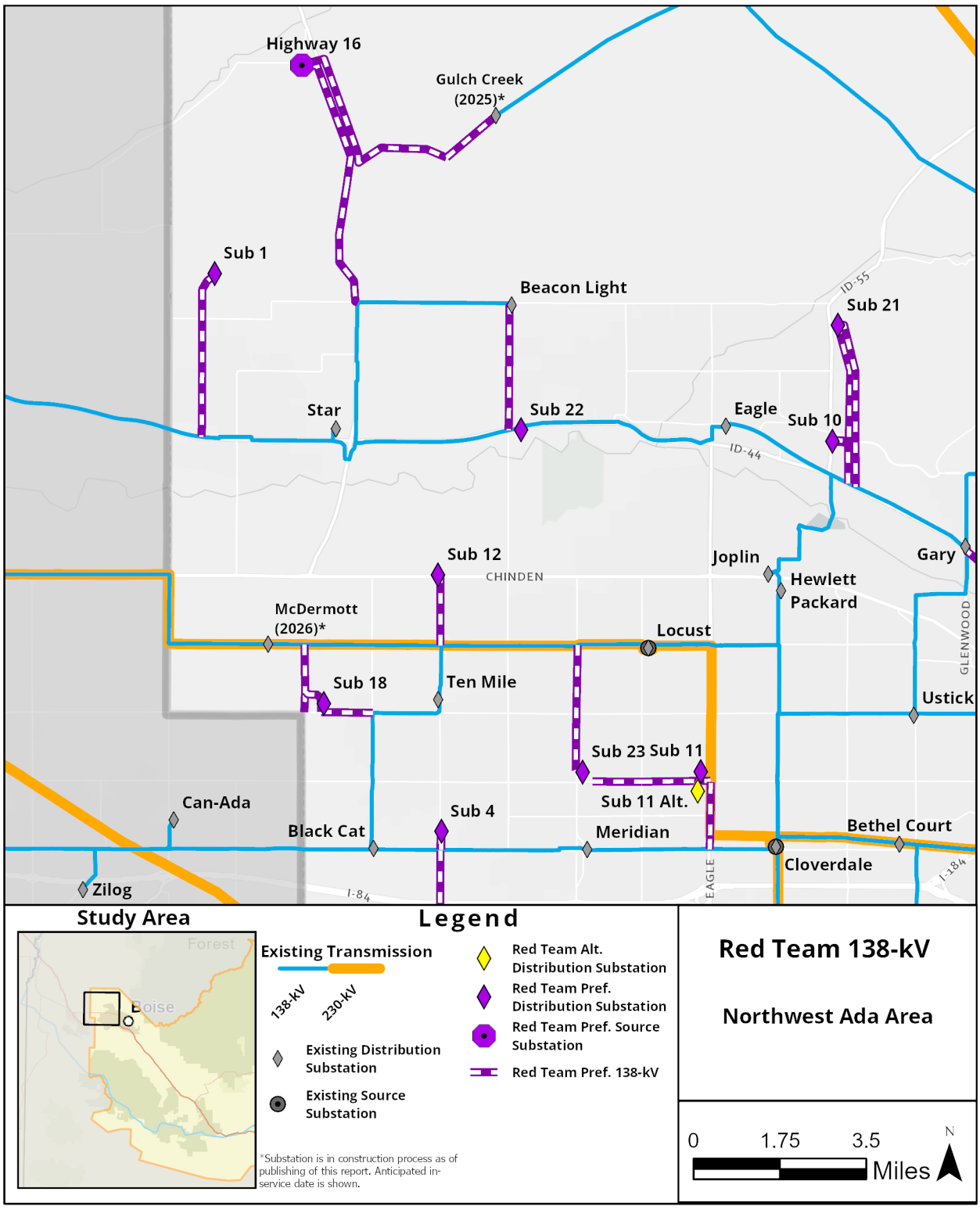

Figure 29
Red Team 138-kV transmission lines and distribution substations—Northwest Ada area

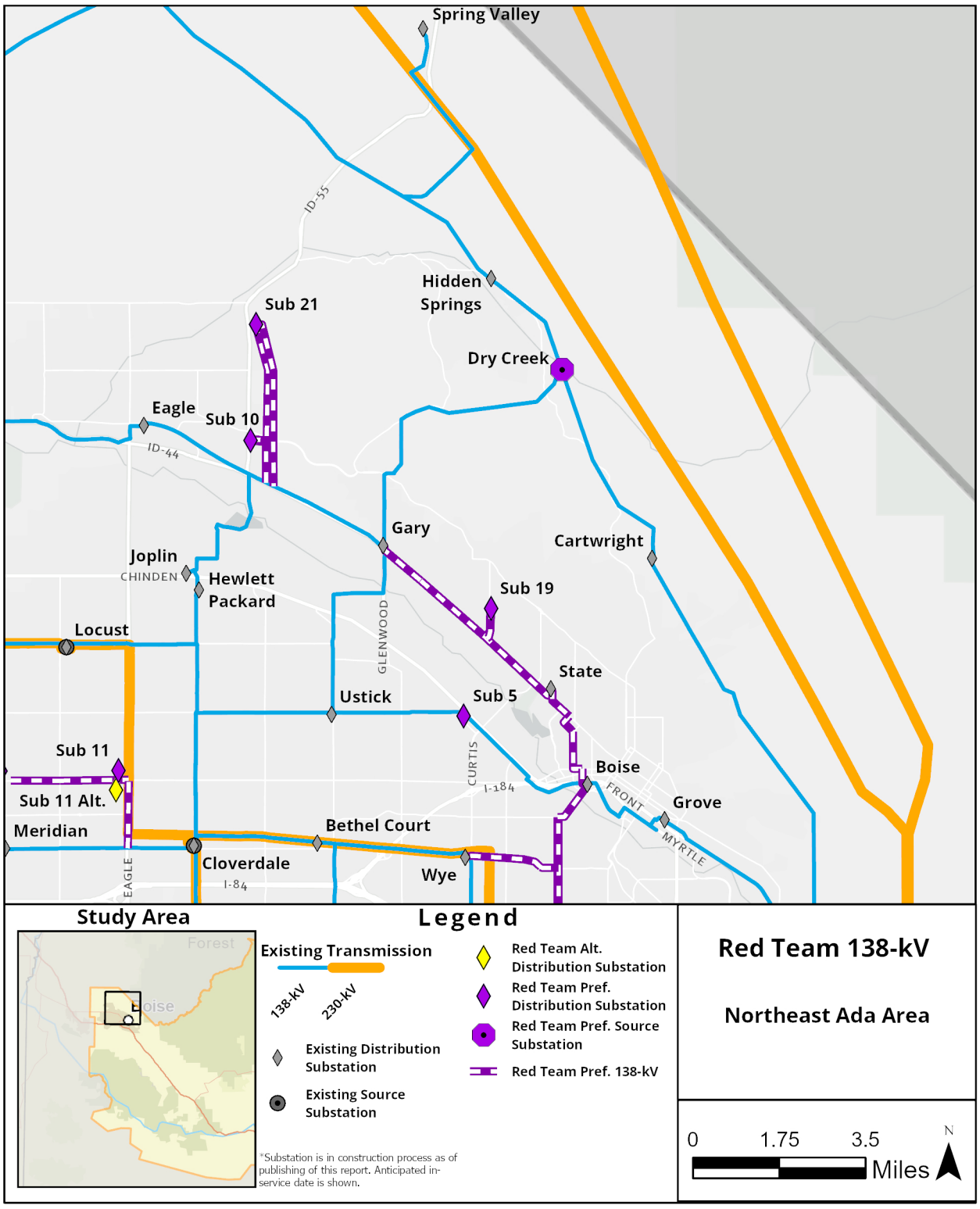

Figure 30
Red Team 138-kV transmission lines and distribution substations—Northeast Ada area

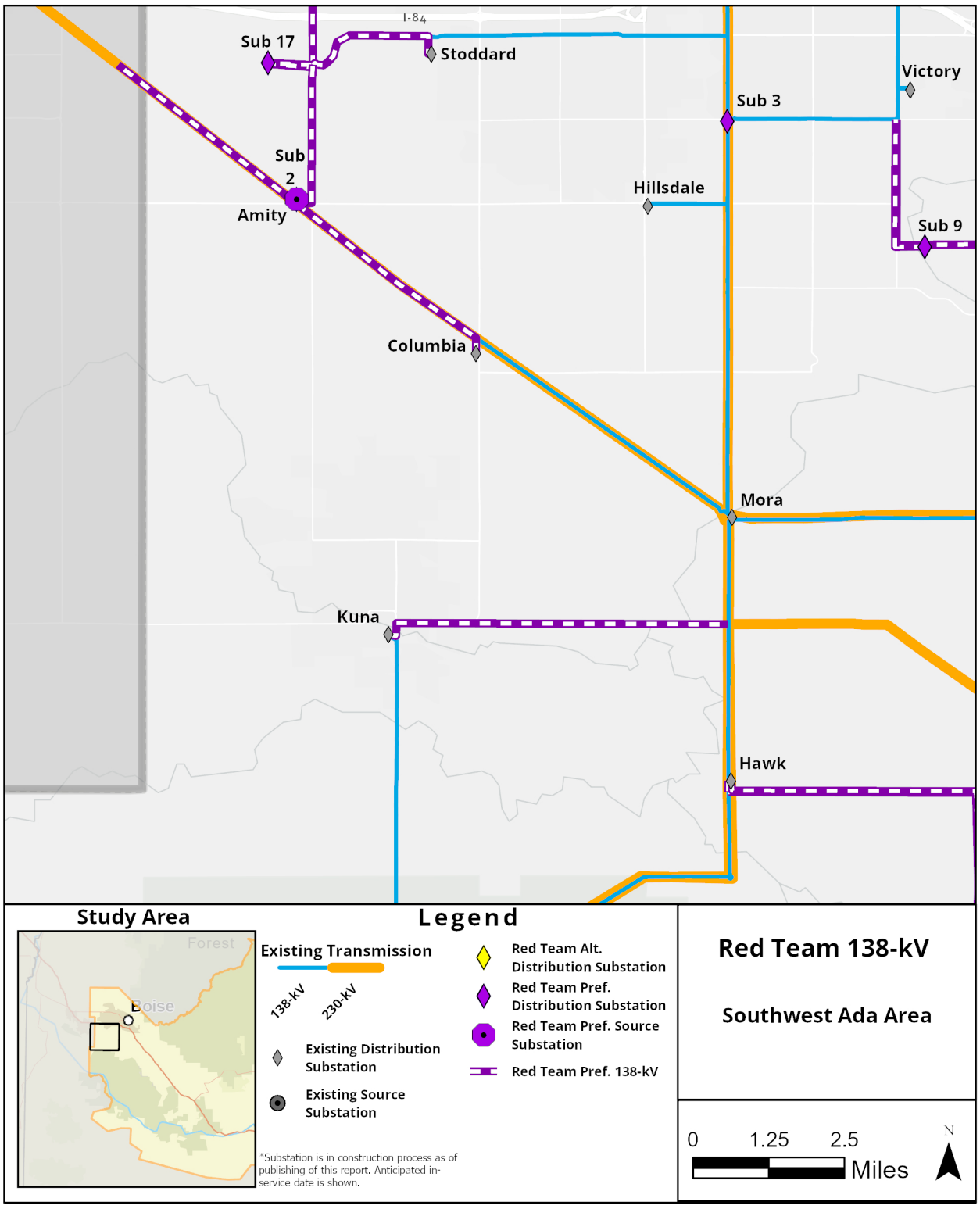

Figure 31
Red Team 138-kV transmission lines and distribution substations—Southwest Ada area

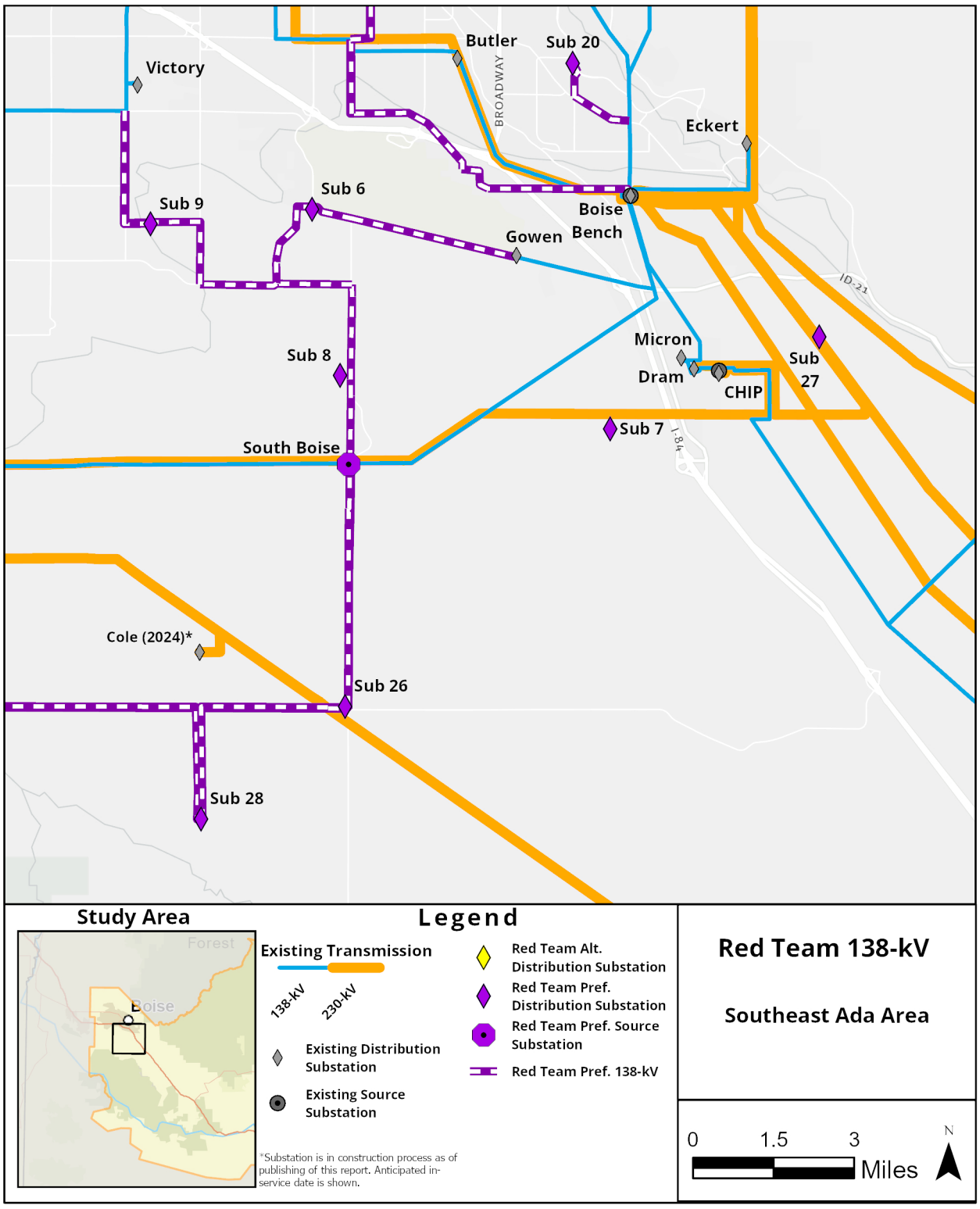

Figure 32
Red Team 138-kV transmission lines and distribution substations—Southeast Ada area

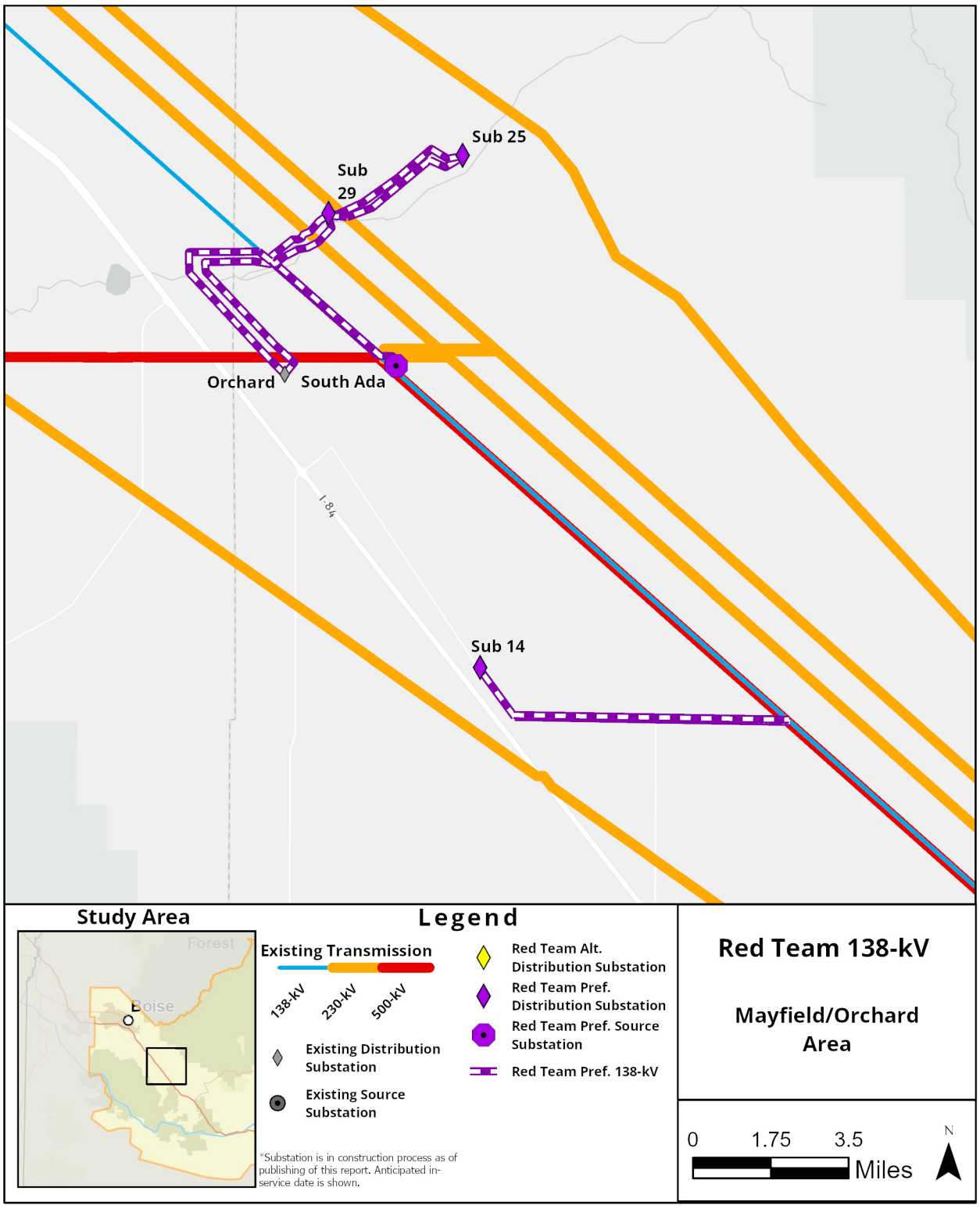

Figure 33
Red Team 138-kV transmission lines and distribution substations—Mayfield/Orchard area

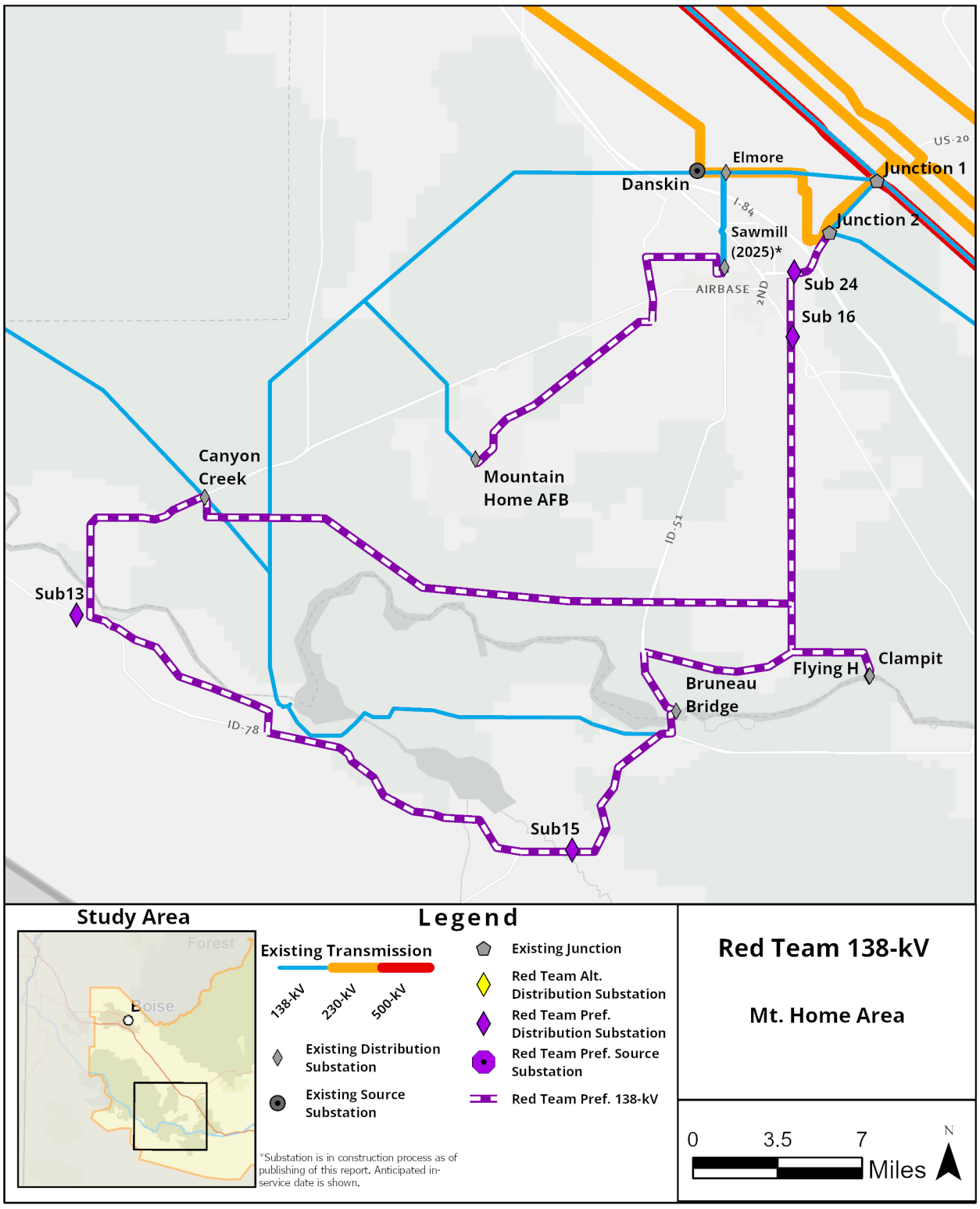

Figure 34
Red Team 138-kV transmission lines and distribution substations—Mountain Home area

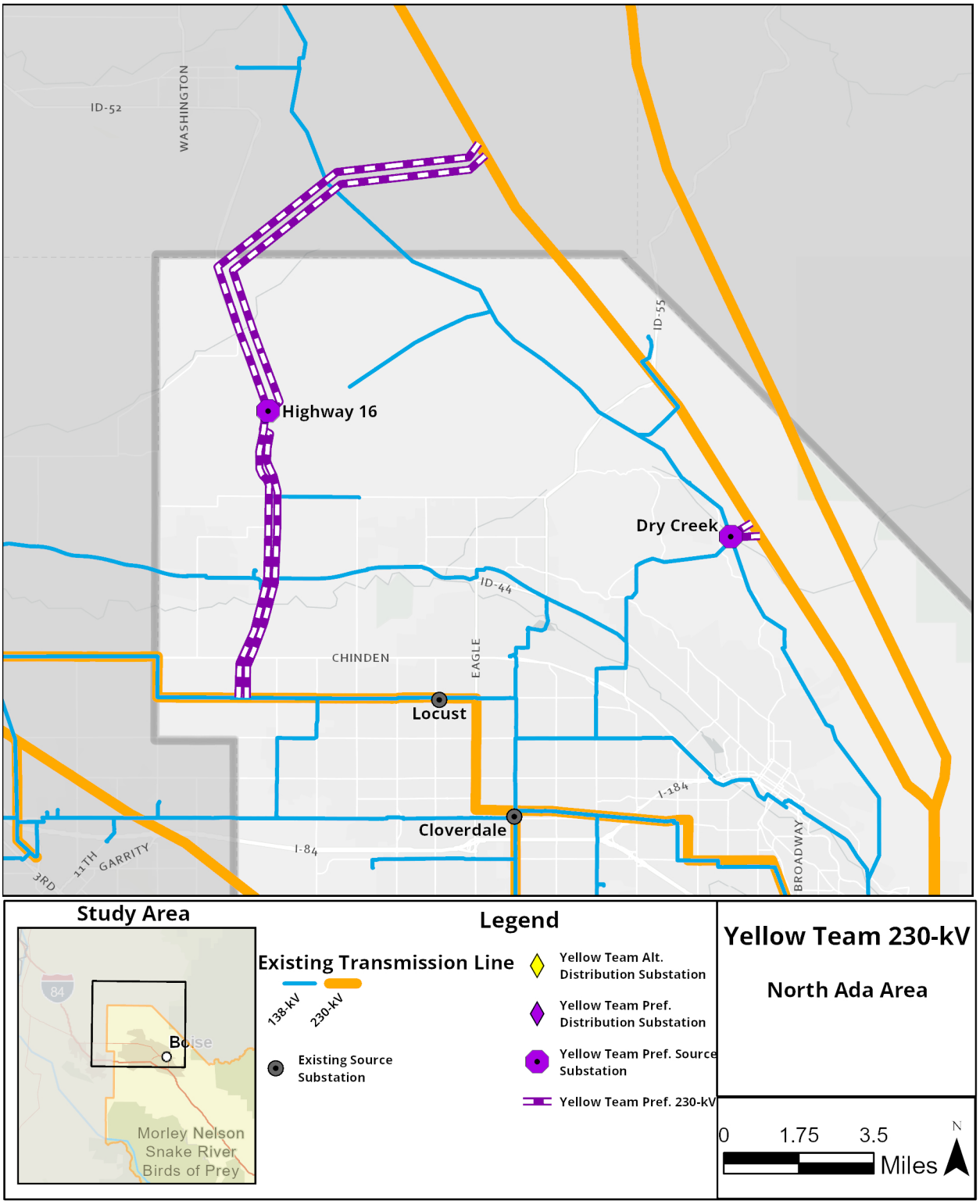

Figure 35
Yellow Team preferred high voltage transmission lines and source substations—North Ada area

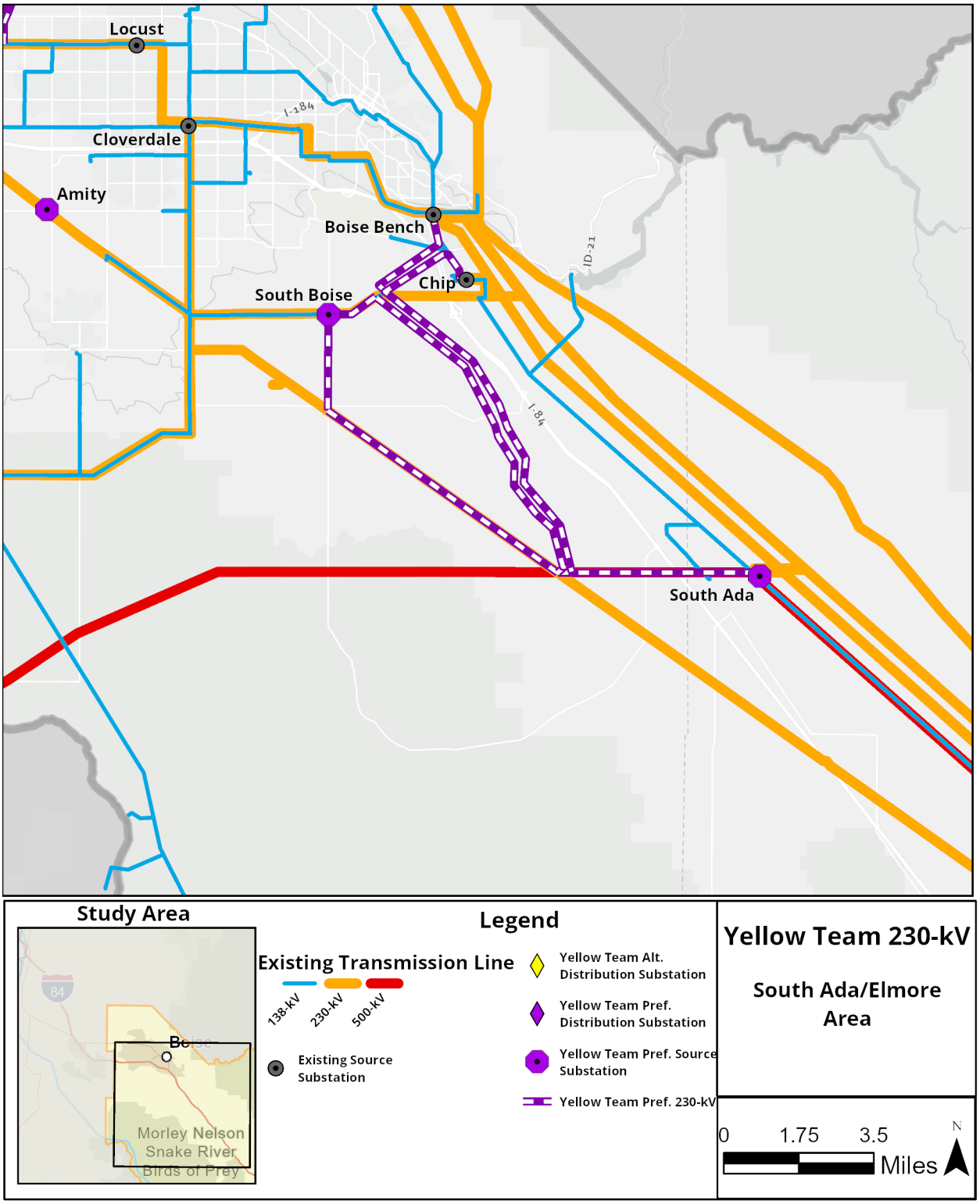

Figure 36
Yellow Team preferred high voltage transmission lines and source substations—South Ada/Elmore area

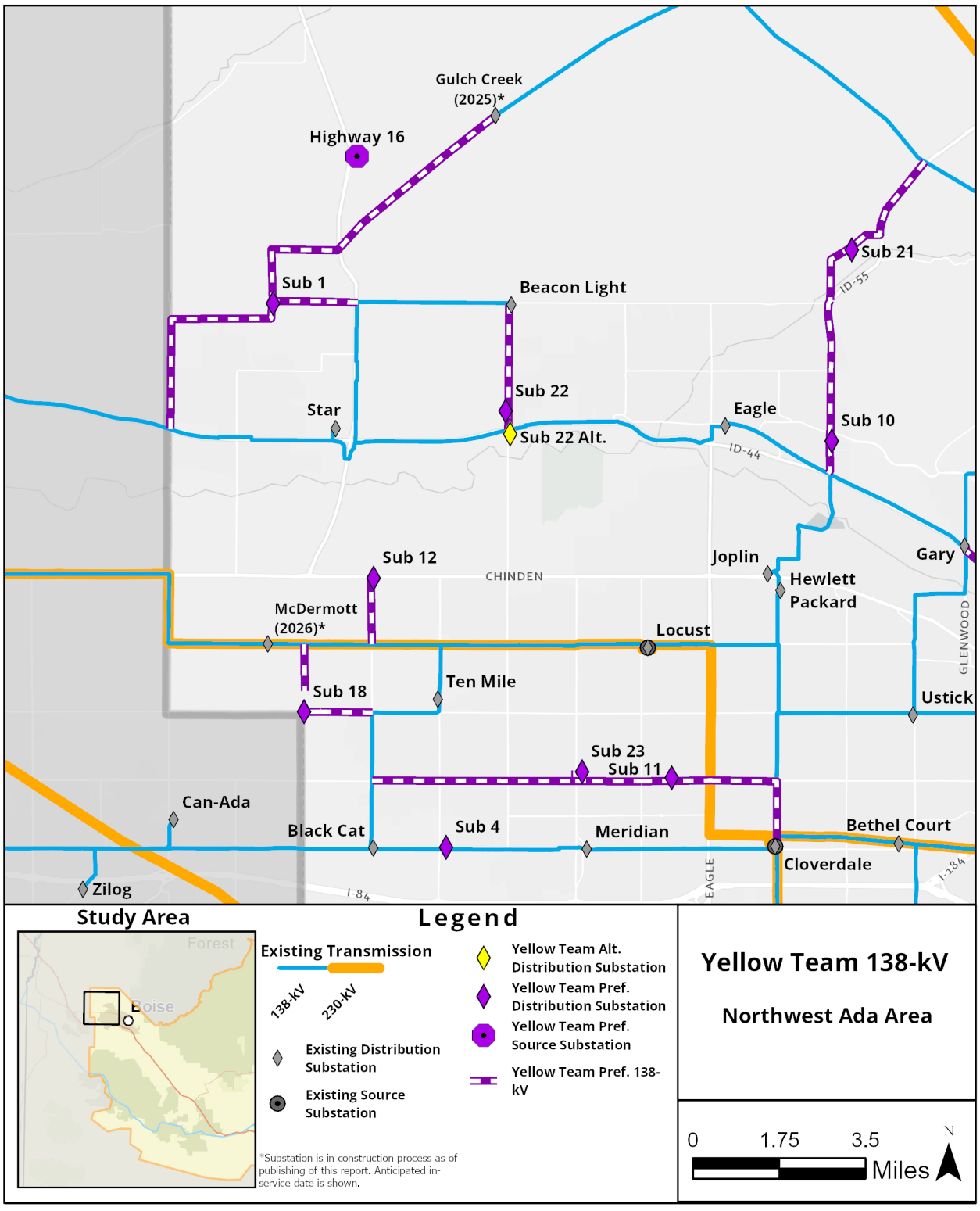

Figure 37
Yellow Team 138-kV transmission lines and distribution substations—Northwest Ada area

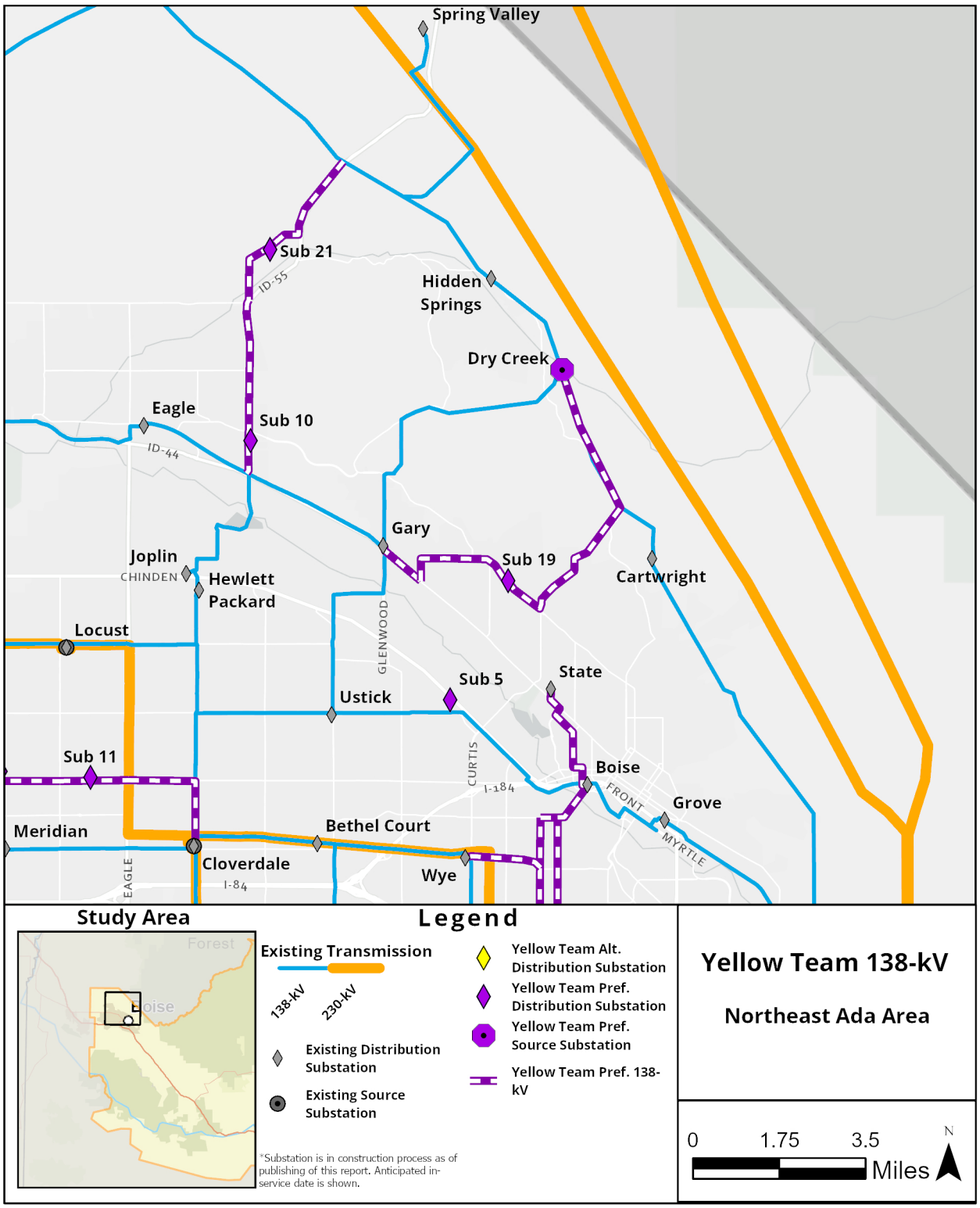

Figure 38
Yellow Team 138-kV transmission lines and distribution substations—Northeast Ada area

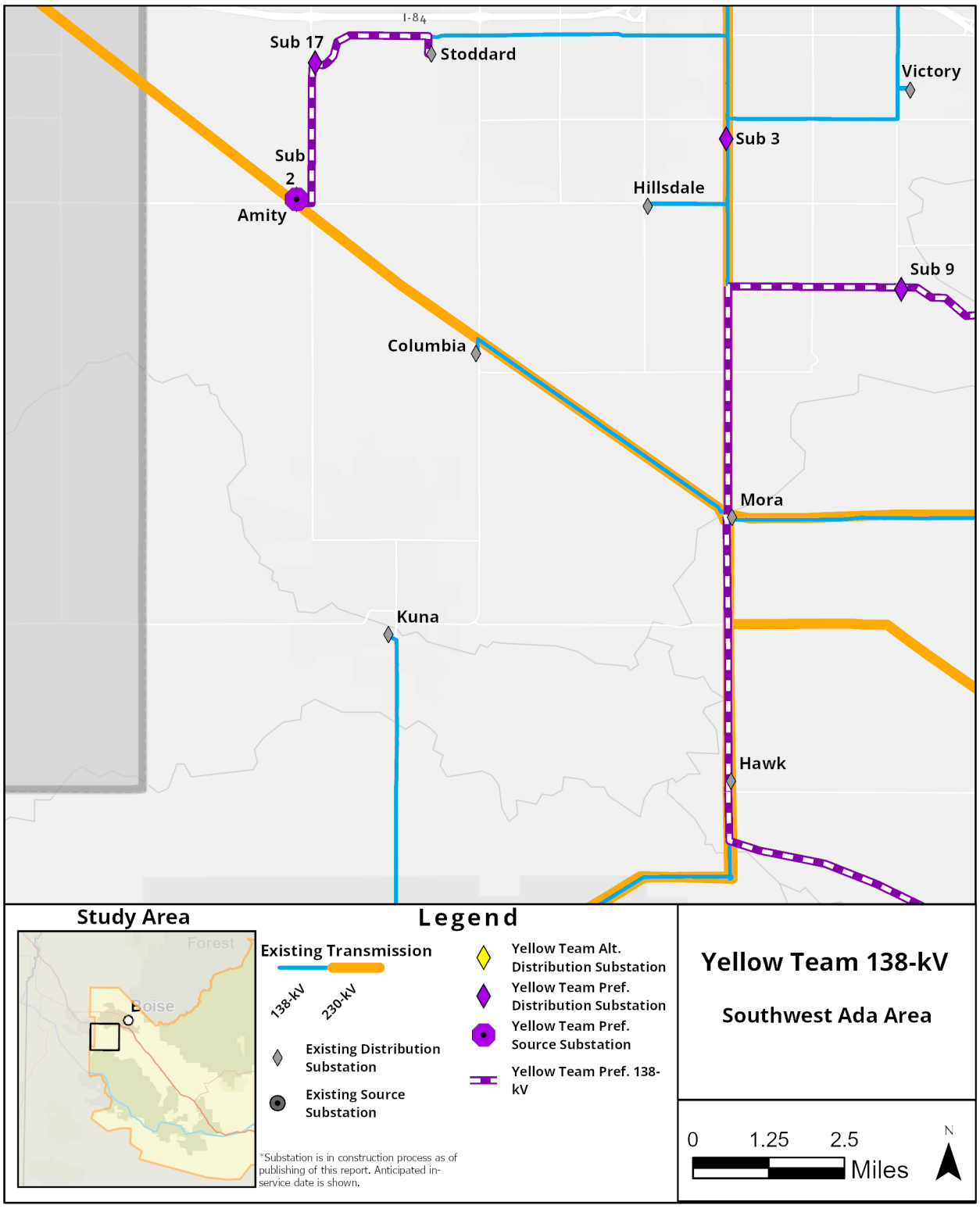

Figure 39
Yellow Team 138-kV transmission lines and distribution substations—Southwest Ada area

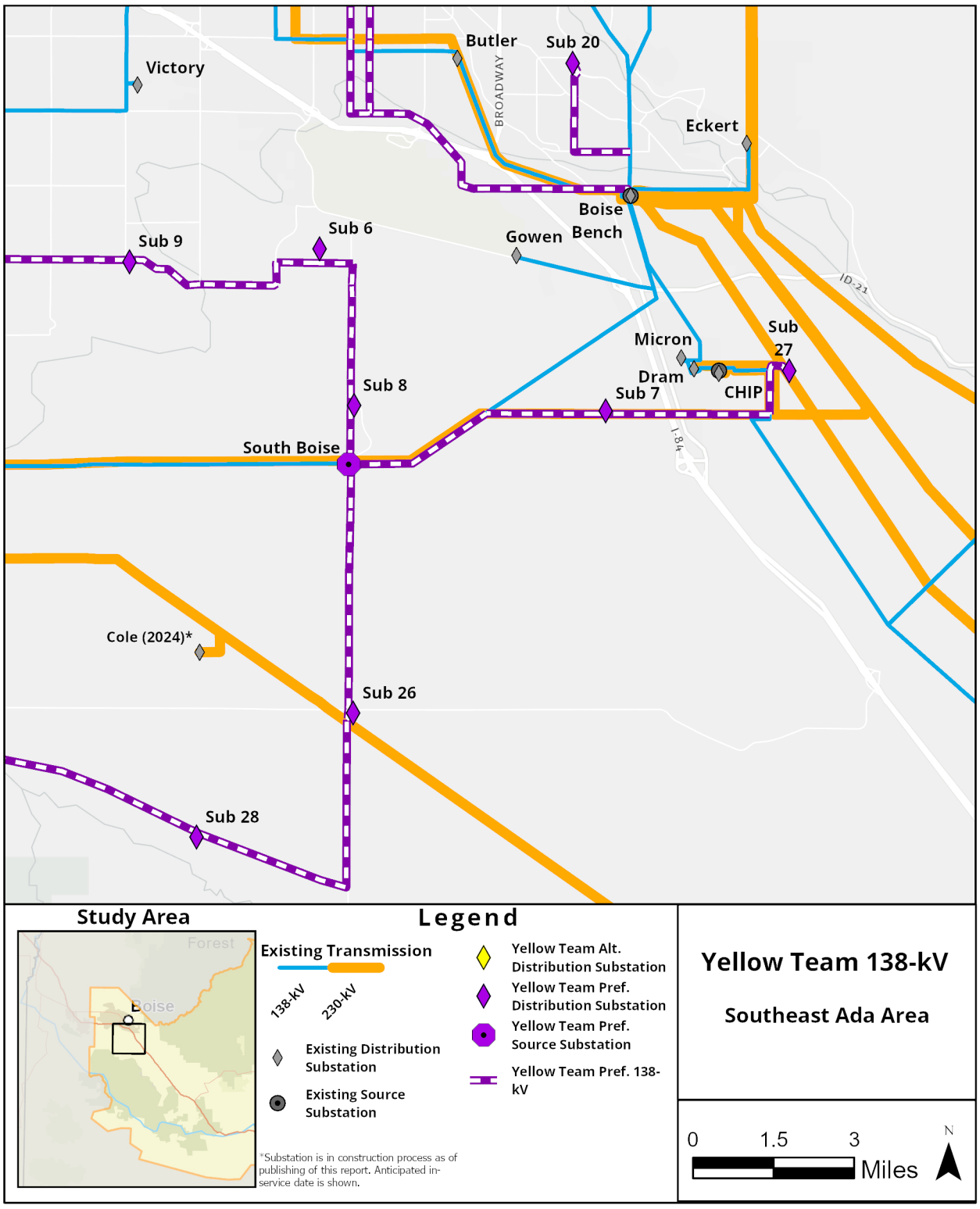

Figure 40
Yellow Team 138-kV transmission lines and distribution substations—Southeast Ada area

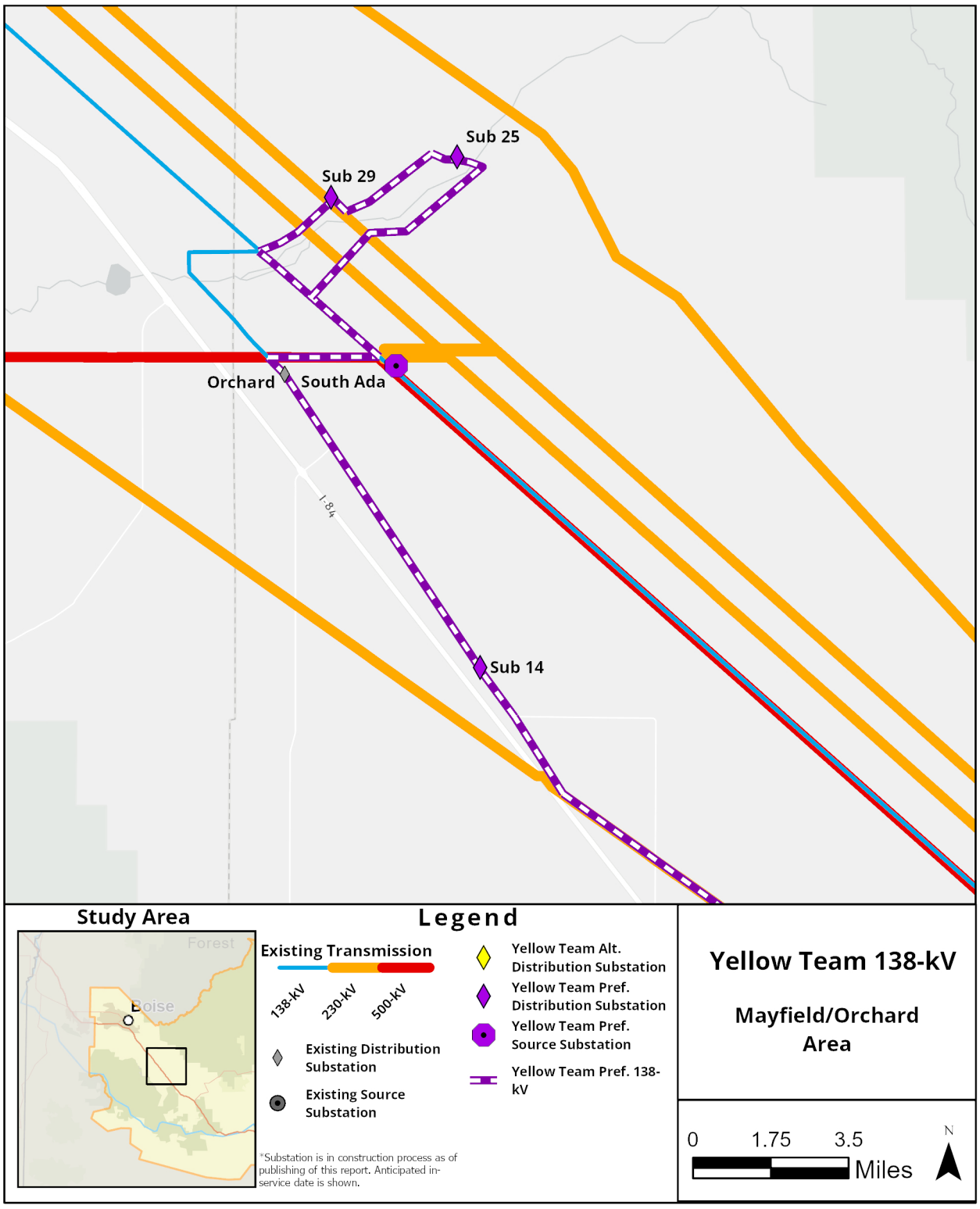

Figure 41
Yellow Team 138-kV transmission lines and distribution substations—Mayfield/Orchard area

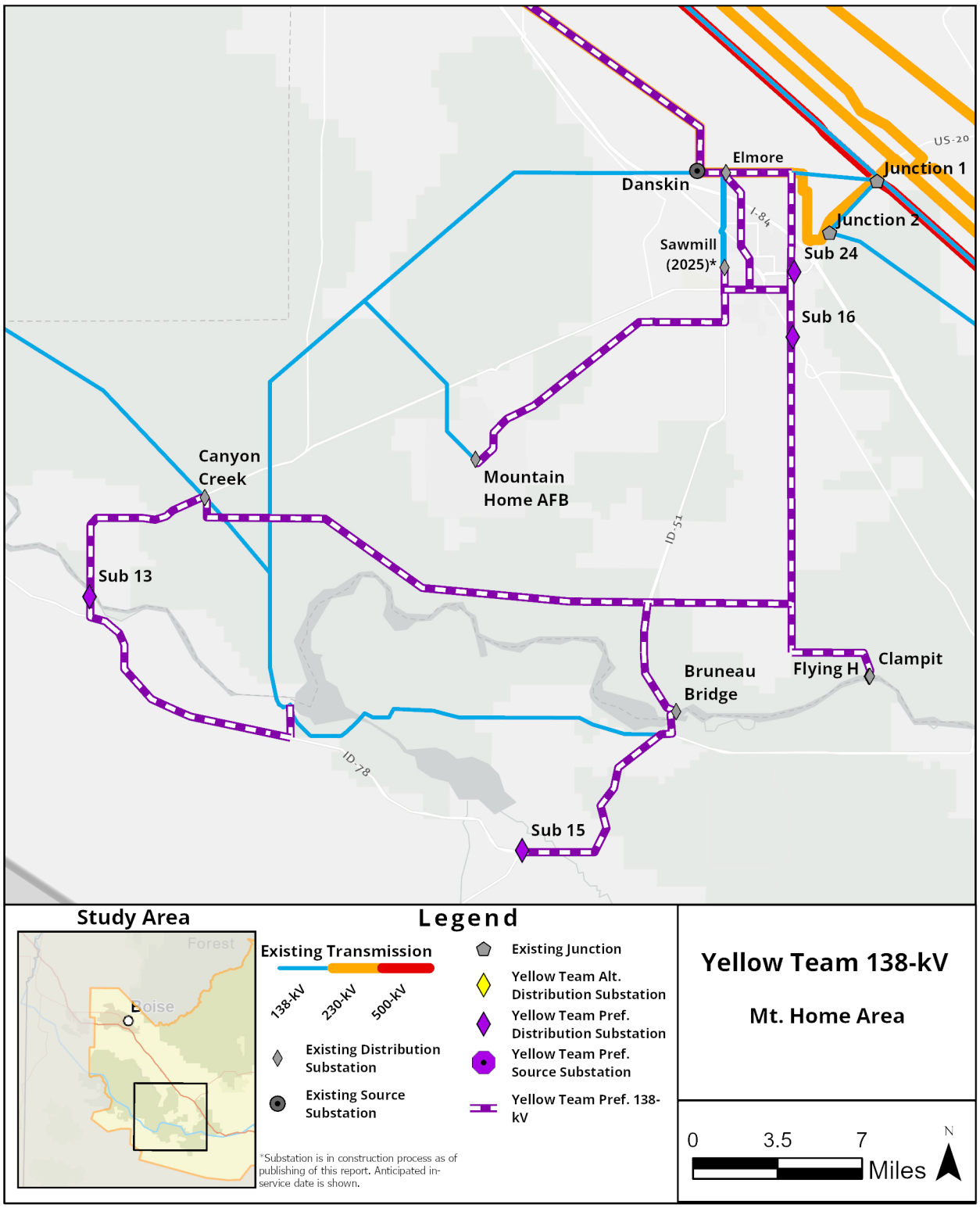

Figure 42
Yellow Team 138-kV transmission lines and distribution substations—Mountain Home area

Appendix C

138-kV Transmission Single Circuit and Double Circuit Buildout Maps.

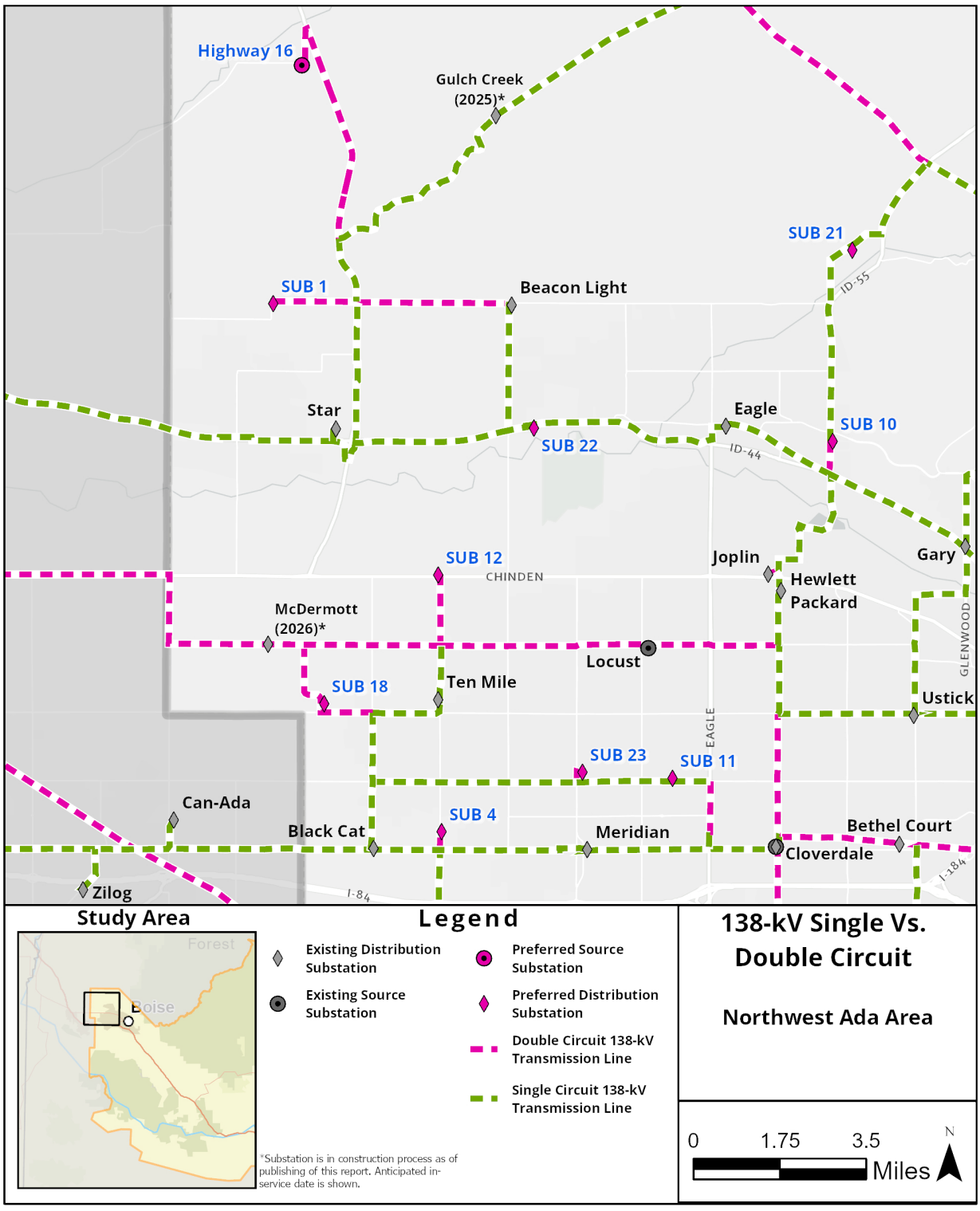

Figure 43
138-kV buildout single circuit vs. double circuit transmission—Northwest Ada area

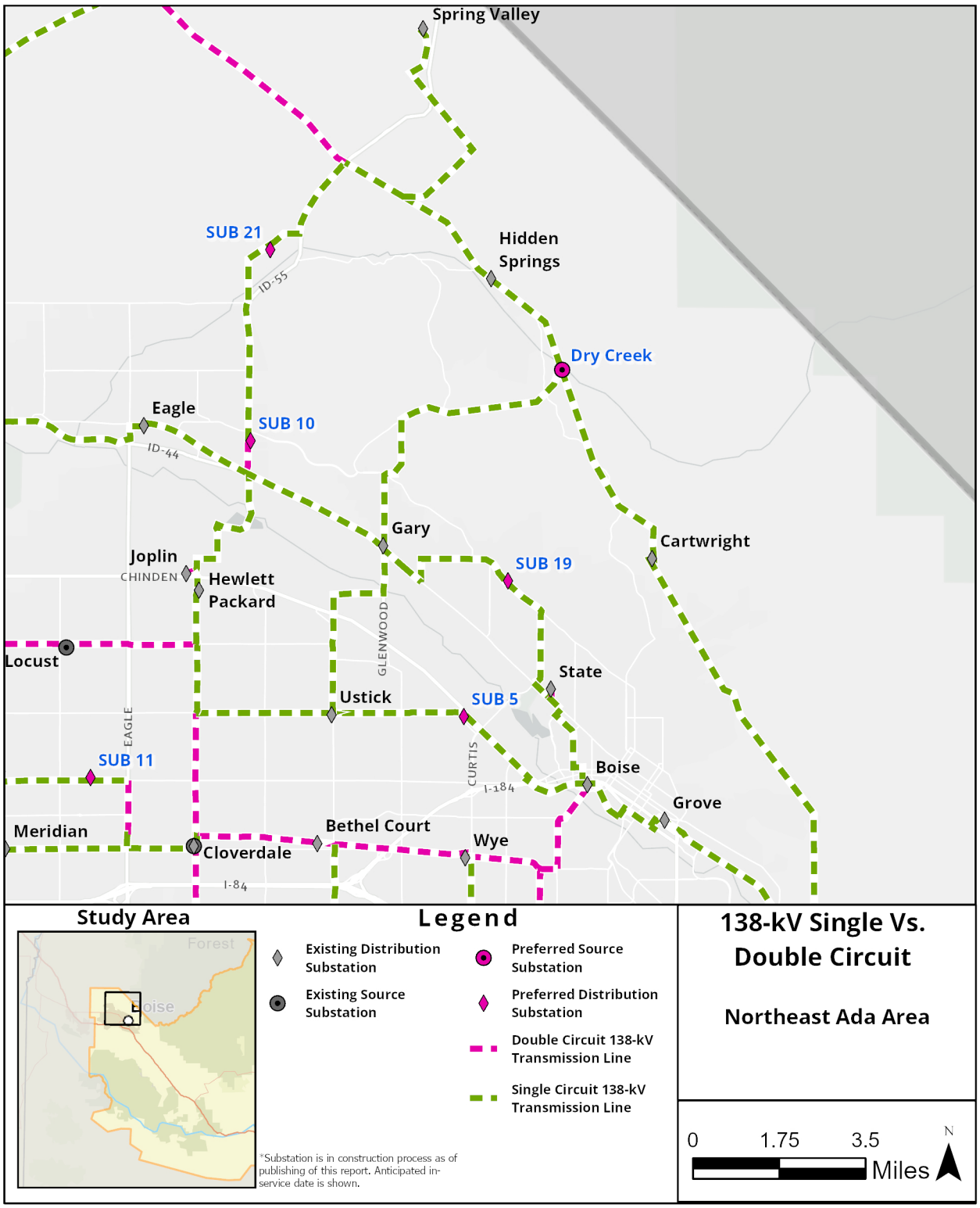

Figure 44
138-kV buildout single circuit vs. double circuit transmission—Northeast Ada area

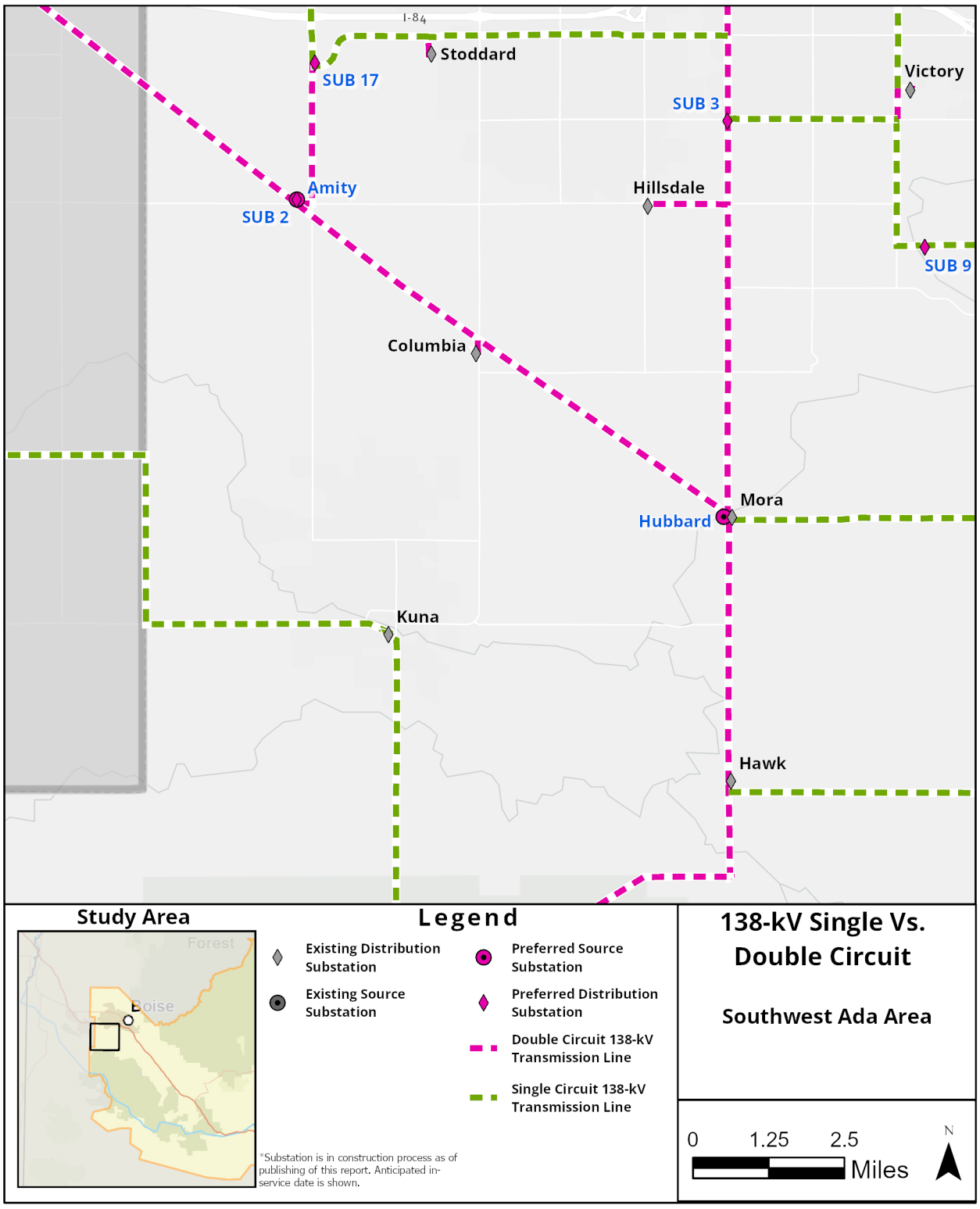

Figure 45
138-kV buildout single circuit vs. double circuit transmission—Southwest Ada area

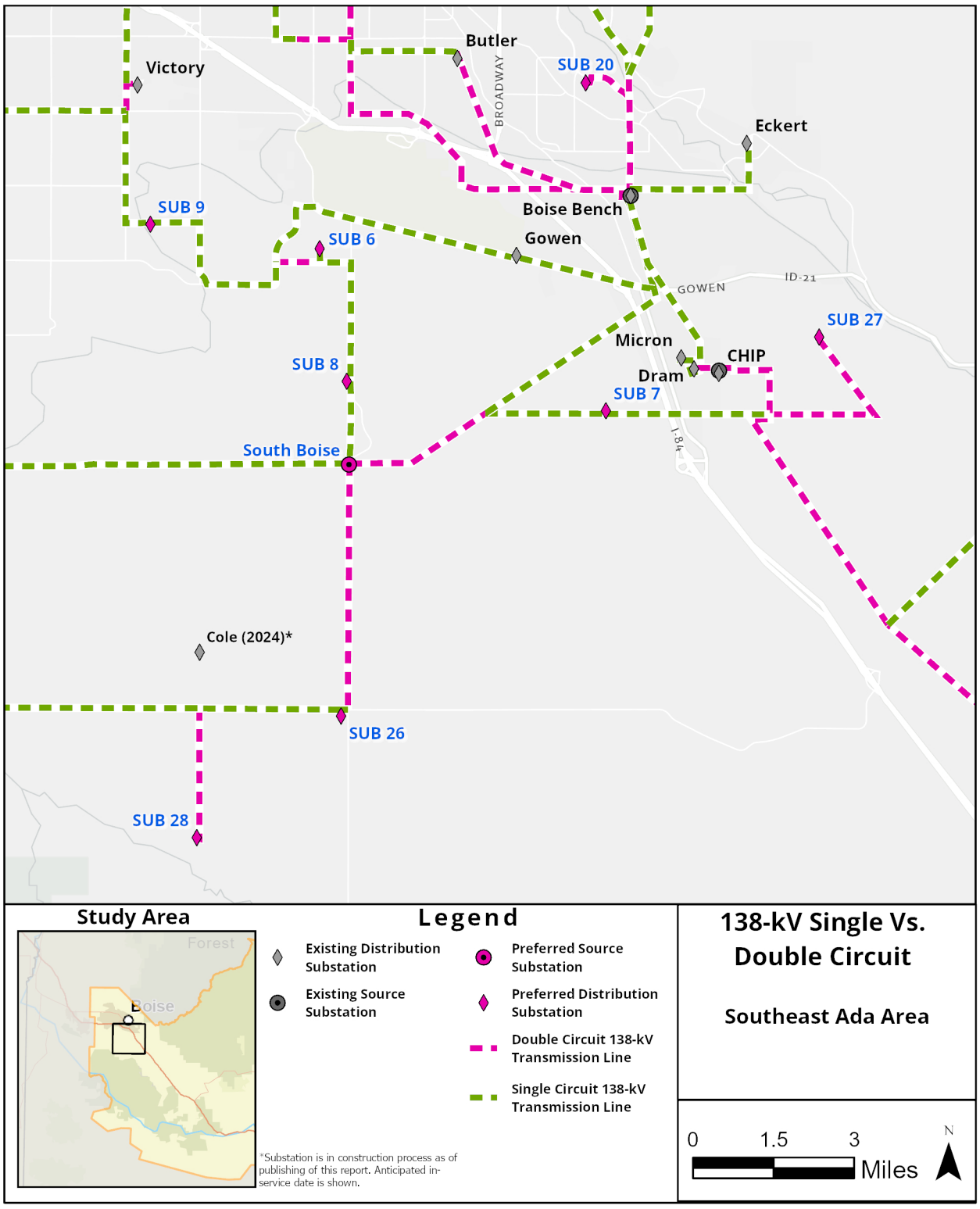

Figure 46
138-kV buildout single circuit vs. double circuit transmission—Southeast Ada area

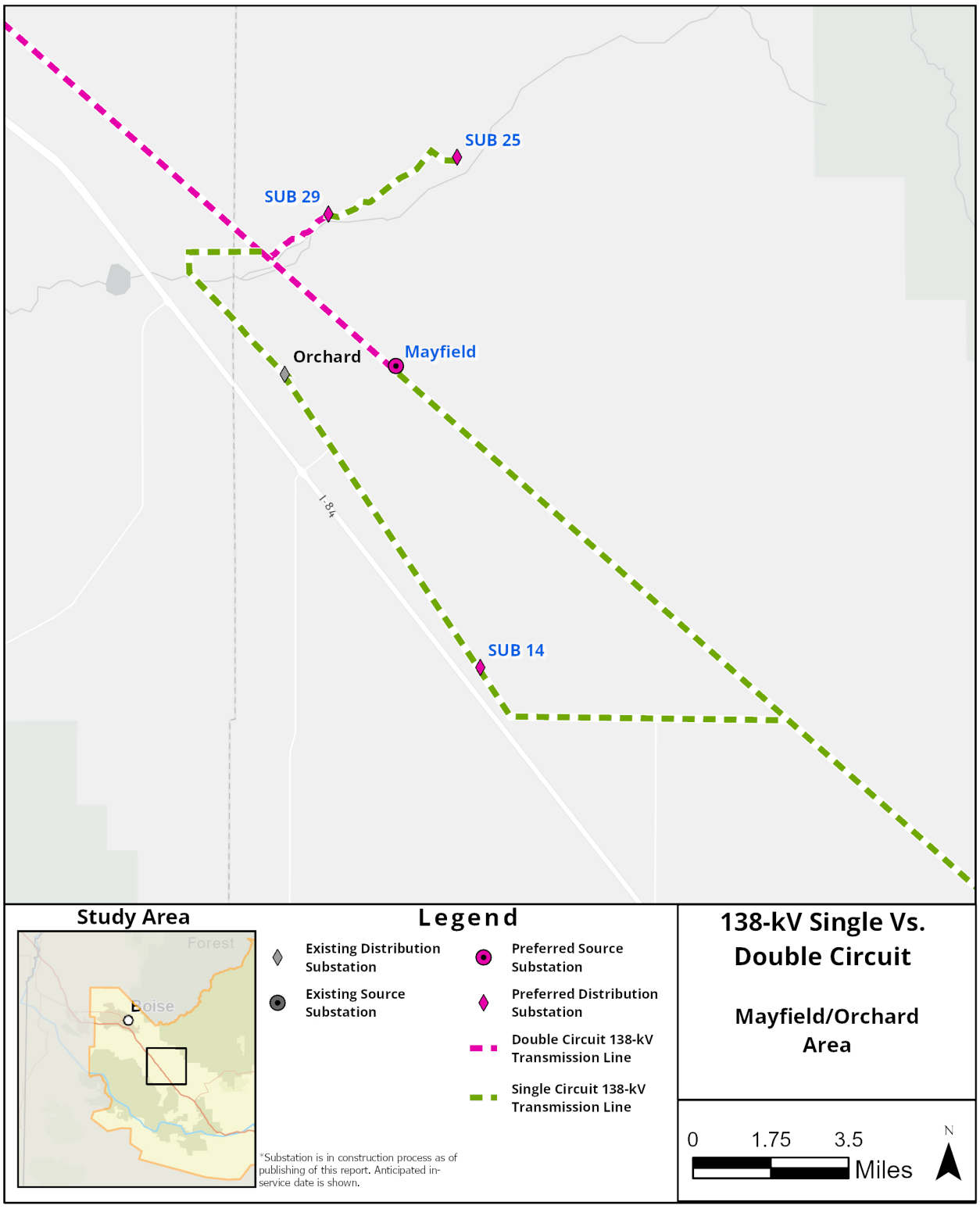

Figure 47
138-kV buildout single circuit vs. double circuit transmission—Mayfield/Orchard area

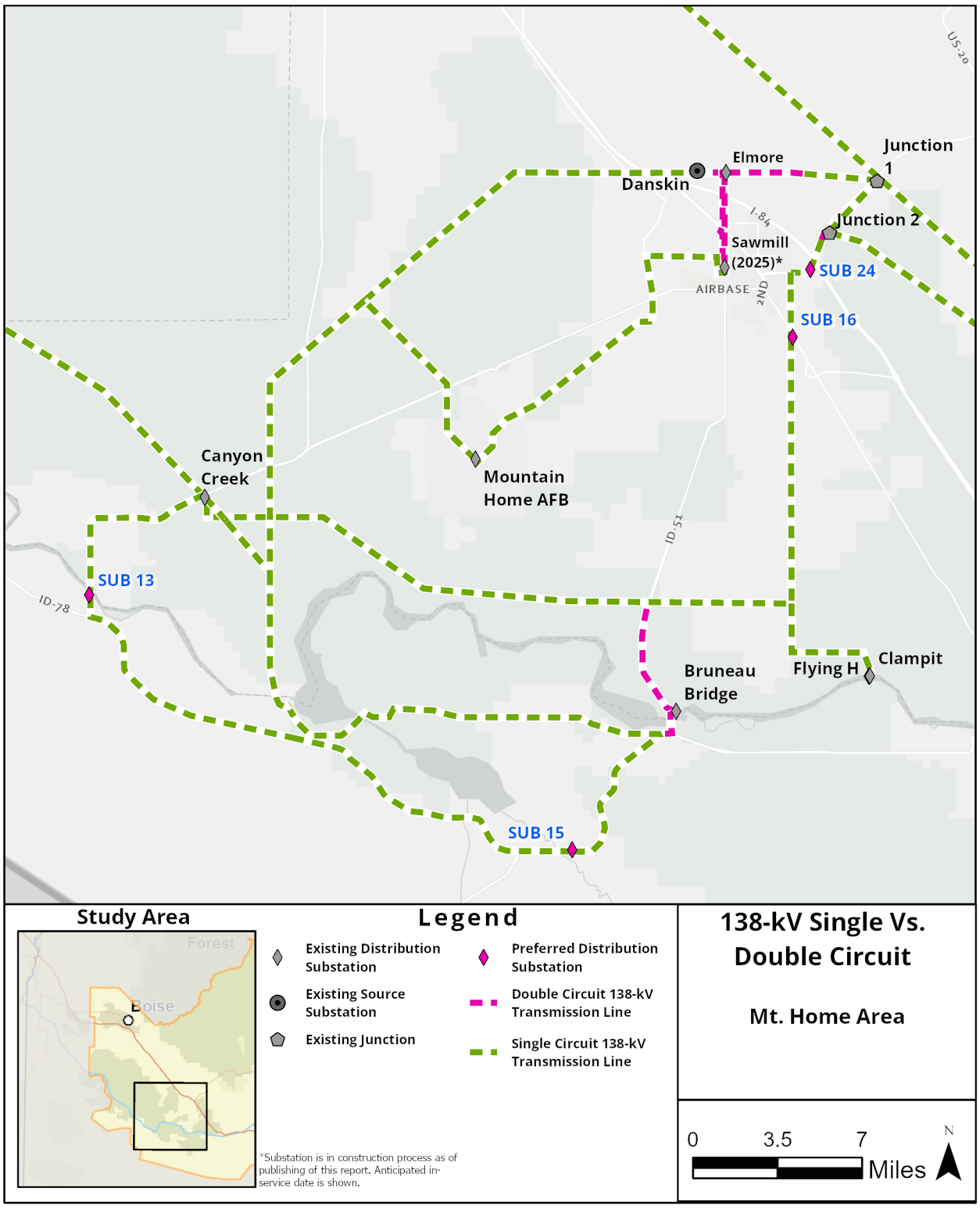

Figure 48
138-kV buildout single circuit vs. double circuit transmission—Mountain Home area

Appendix D

138-kV Existing, Upgraded, and New Transmission Buildout Maps.

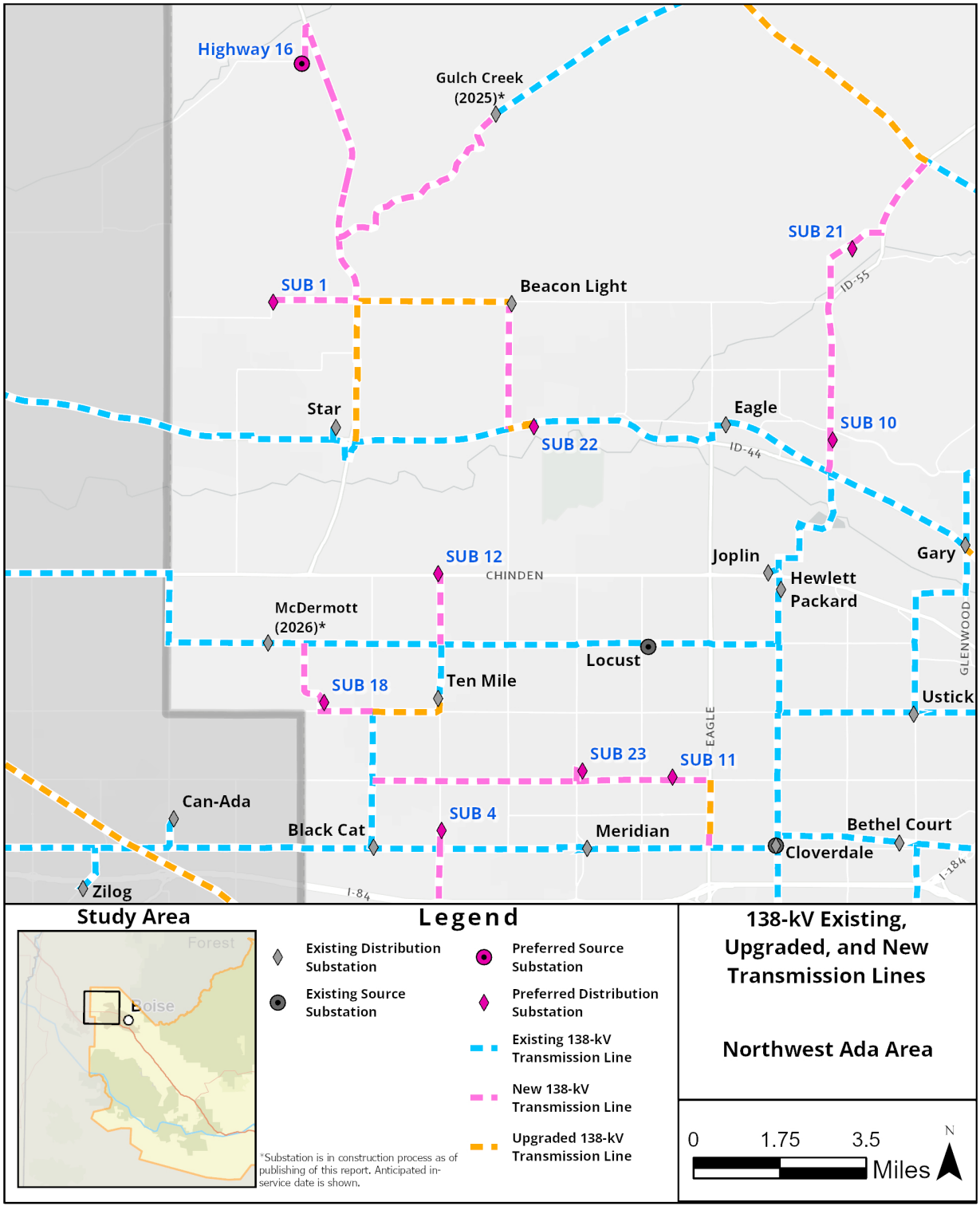

Figure 49
138-kV existing, upgraded, and new transmission—Northwest Ada area

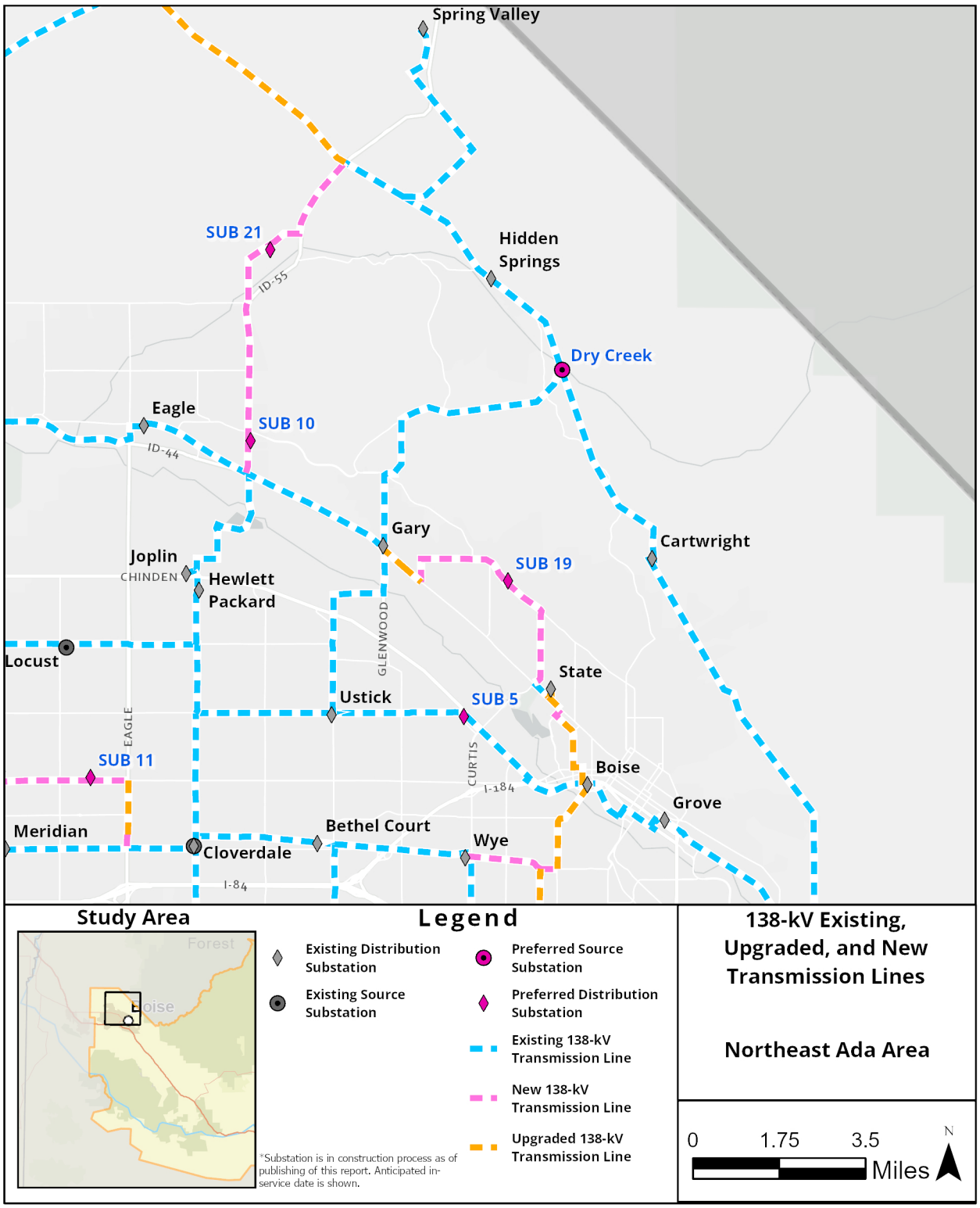

Figure 50
138-kV existing, upgraded, and new transmission—Northeast Ada area

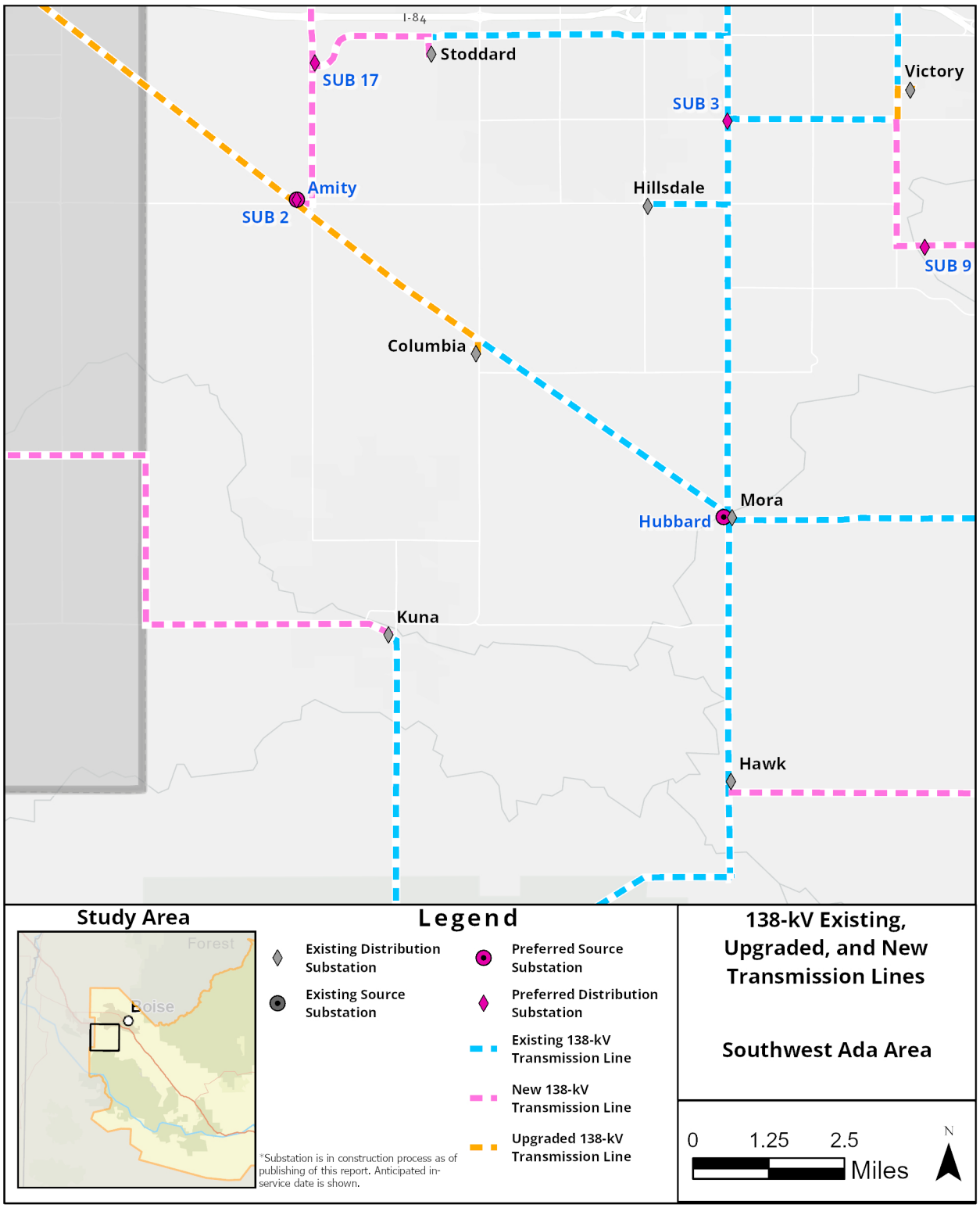

Figure 51
138-kV existing, upgraded, and new transmission—Southwest Ada area

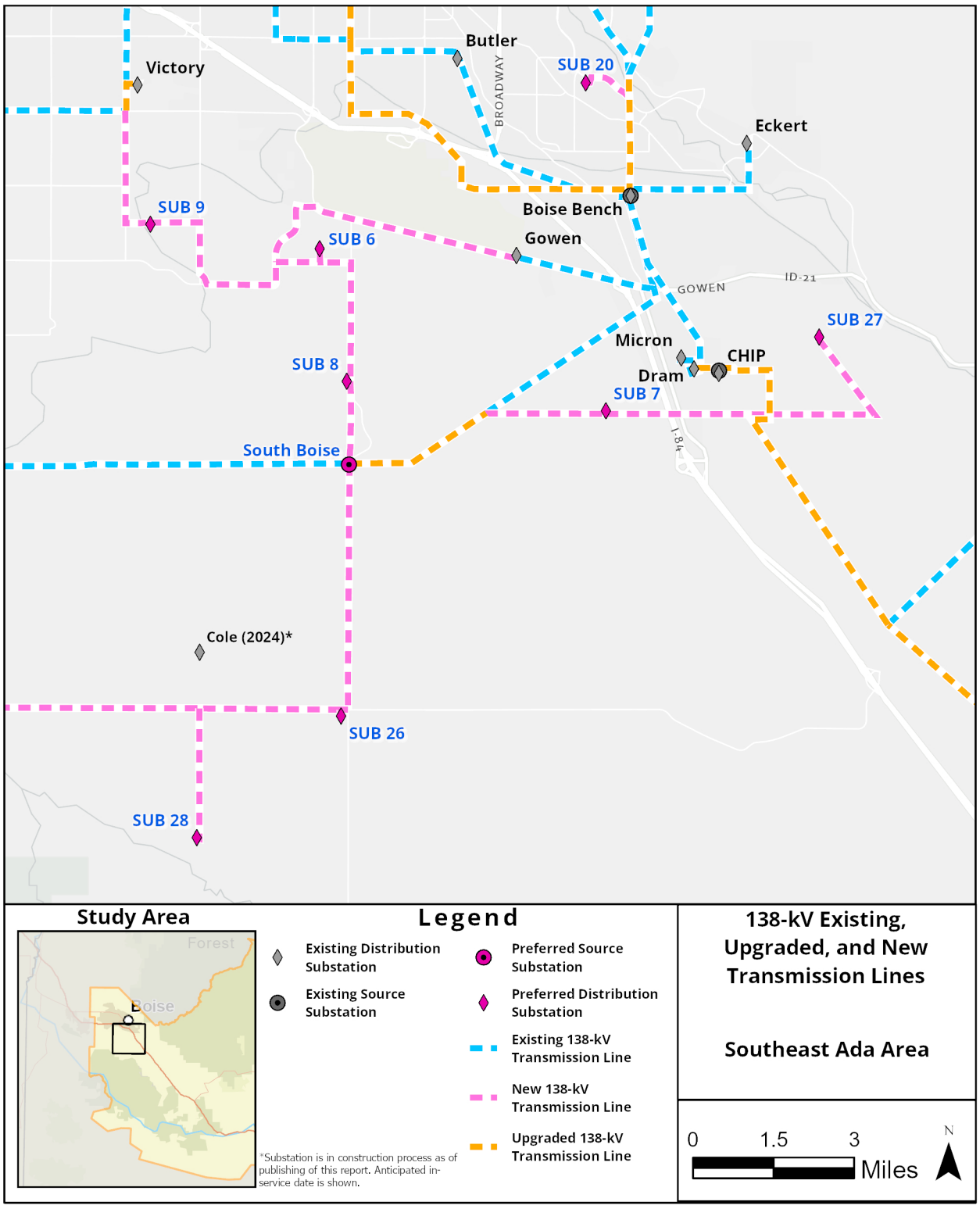

Figure 52
138-kV existing, upgraded, and new transmission—Southeast Ada area

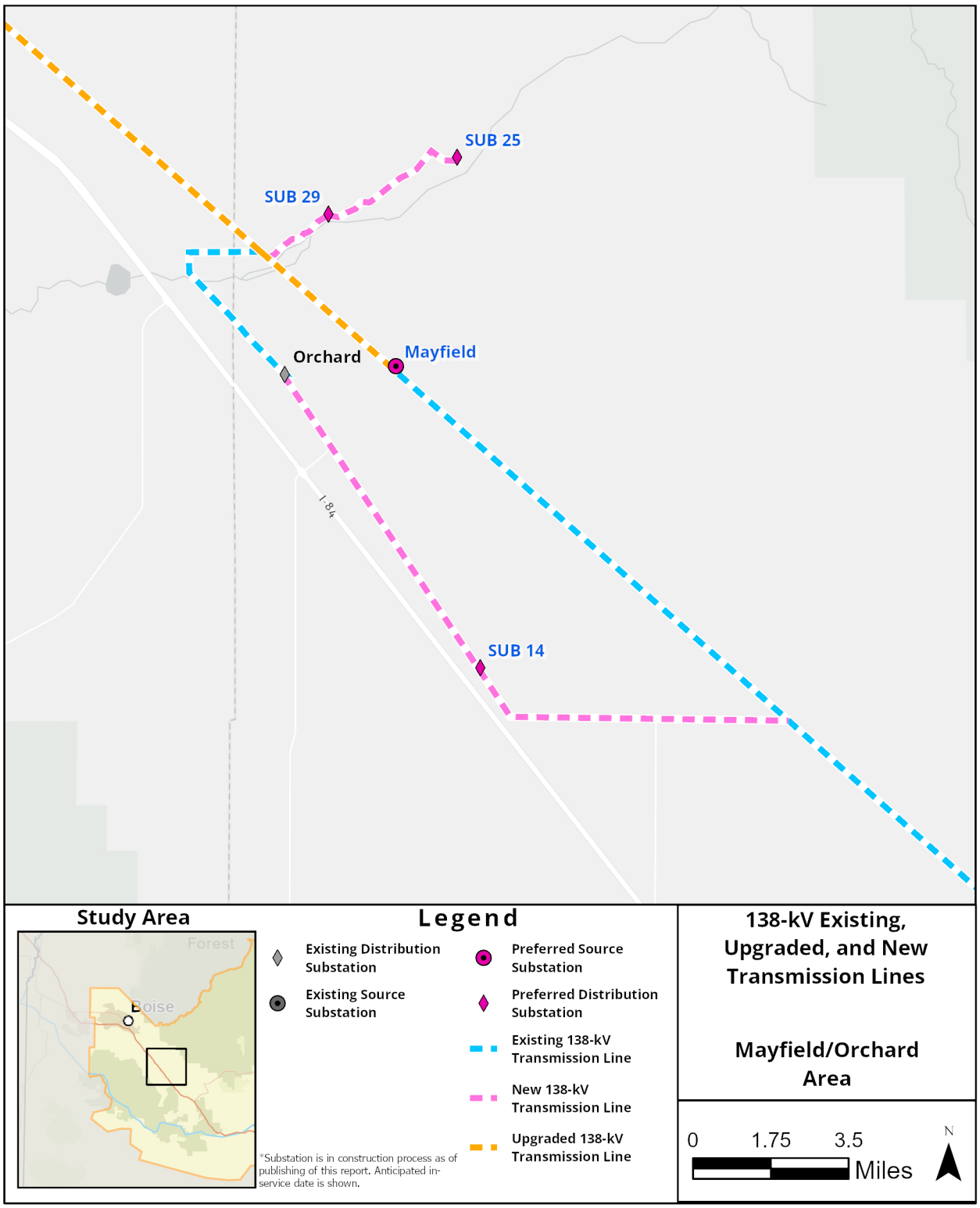

Figure 53
138-kV existing, upgraded, and new transmission—Mayfield/Orchard Ada area

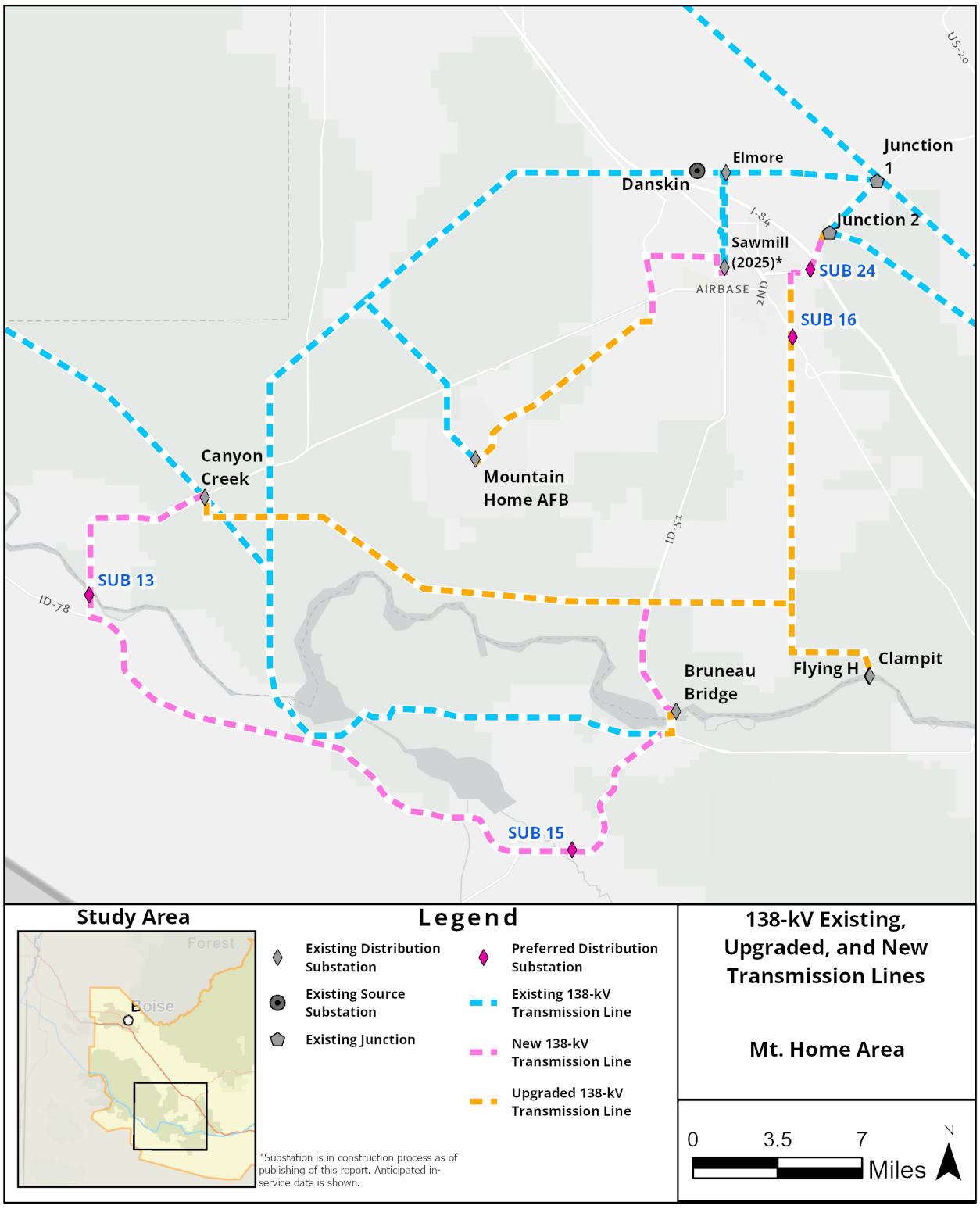

Figure 54
138-kV existing, upgraded, and new transmission—Mountain Home area