

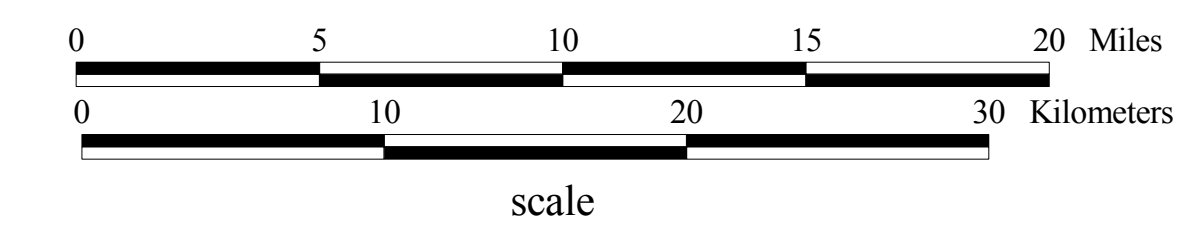
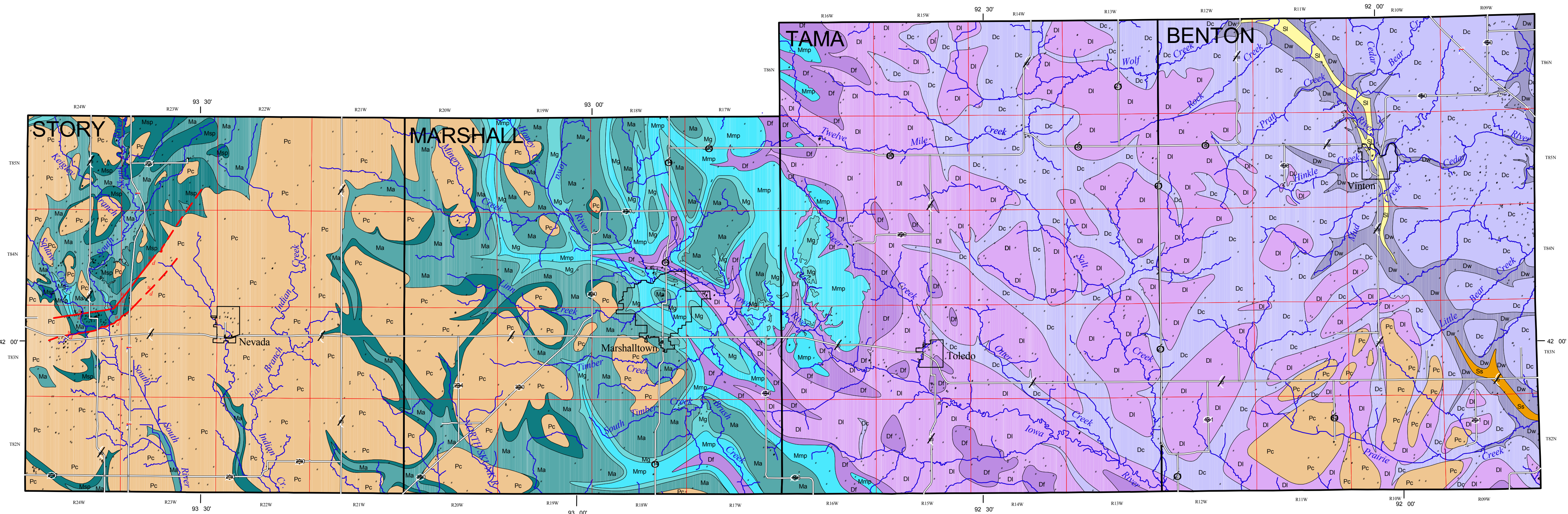
BEDROCK GEOLOGY OF EAST-CENTRAL IOWA

DIGITAL GEOLOGIC MAP OF IOWA PHASE 6: EAST-CENTRAL IOWA

prepared by

Brian J. Witzke, Raymond R. Anderson,
Bill J. Bunker, and Greg A. Ludvigson

Iowa Geological Survey
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LEGEND

Description of Rock Units

PENNSYLVANIAN

Pc **Cherokee Group**, undifferentiated; Middle Pennsylvanian (Atokan-Desmoinesian). Maximum thickness 300 ft (91 m) in Story Co., 270 ft (82 m) in Benton Co. Primary lithologies: shale and mudstone, gray to black, part silty to sandy. Secondary lithologies: sandstone, siltstone. Minor: coal, limestone, pyrite, siderite.

MISSISSIPPIAN

Msp **"St. Louis" and Pella formations**, Middle Mississippian (Meramecian). Maximum thickness 80 ft (24 m) in Story Co.; beveled and truncated beneath Pc; Pella Fm mostly absent from map area. Primary lithologies: dolomite, part sandy; sandstone; limestone, part sandy to subthigraphic. Secondary lithologies: limestone/dolomite breccia; siltstone; shale, green-gray, calcareous. Minor: chert, chalcadony.

Ma **Angata Group**, includes Burlington, Kosak, Warsaw formations; Middle Mississippian (Osagean). Maximum thickness 155 ft (47 m) in Story Co. Primary lithologies: dolomite, part argillaceous to shaly; dolomitic limestone, fossiliferous. Secondary lithologies: shale, gray, dolomitic; glauconitic dolomite; chert, nodular to bedded. Minor: chalcadony, quartz nodules; minor: quartz druse; dolomite/chert breccia.

Mg **Gilmore City Fm and "Eagle City" beds**; Mississippian (upper Kinderhookian, lower Osagean); informal stratigraphic grouping, regional stratigraphic relationships uncertain. Maximum thickness 70 ft (21 m) in northern Story Co. Primary lithologies: limestone, fossiliferous, oolitic, coated grain. Secondary lithologies: dolomite; dolomitic limestone; limestone, dense to peloidal. Minor: glauconitic, chert.

Mmp **Maynes Creek, Chapin, Prospect Hill formations**; Mississippian (Kinderhookian). Maximum thickness 100 ft (30 m); Maynes Creek Fm 35 to 70 ft (11-21 m); Chapin Fm 5 to 20 ft (1-6 m); Prospect Hill Fm 0 to 20 ft (6 m). Primary lithologies: dolomite, cherty to very cherty (Maynes Creek); limestone, oolitic (Chapin); siltstone (Prospect Hill). Secondary lithologies: dolomite, fossiliferous limestone. Minor: calcareous shale, green-gray.

DEVONIAN

Df **Famennian interval**, primarily undifferentiated shale unit across map area ("Saverton Shale"); subdivisible into "Maple Mill," Aplington, and Sheffield formations in northwest Tama Co.; Upper Devonian (Famennian). Maximum thickness 150 ft (46 m). Primary lithologies: shale, green-gray to gray, part dolomitic to calcareous. Secondary: argillaceous dolomite; siltstone, part argillaceous. Minor: brown shale; red shale; chert; oolitic ironstone (hematite/limonite).

Di **Lime Creek Formation**, includes Juniper Hill, Cerro Gordo, Owen members; Upper Devonian (upper Frasnian). Maximum thickness 200 ft (61 m) in western Tama Co. Primary lithologies: gray to green-gray shale, dolomitic to calcareous; dolomite, part argillaceous. Secondary lithologies: fossiliferous limestone; dolomitic limestone, part argillaceous.

Dc **Cedar Valley Group**, includes Little Cedar, Coralville, Lithograph City formations; Middle and Upper Devonian (upper Givetian, lowermost Frasnian). Maximum thickness 310 ft (95 m) in northwest Tama Co.; thins southeastward to full thickness of 110 ft (34 m) in southeast Benton Co. Primary lithologies: limestone, fossiliferous, part argillaceous; dolomite to dolomitic limestone. Secondary lithologies: unfossiliferous limestone, argillaceous to subthigraphic; chert. Minor to secondary: gypsum/anhydrite (Tama Co.).

Dw **Wapsipicon Group**, includes Pinicon Ridge Fm (Kenwood, Spring Grove, Davenport members), Otis Fm, Bertram Fm; Middle Devonian (upper Eifelian-middle Givetian). Full thickness 65 to 130 ft (20-40 m) in Benton Co. Primary lithologies: dolomite; subthigraphic limestone; limestone breccia. Secondary lithologies: silty to sandy dolomite; shale, gray to green-gray, part sandy. Minor: chert, chalcadony, sandstone. Note: includes gypsum/anhydrite in Tama Co.

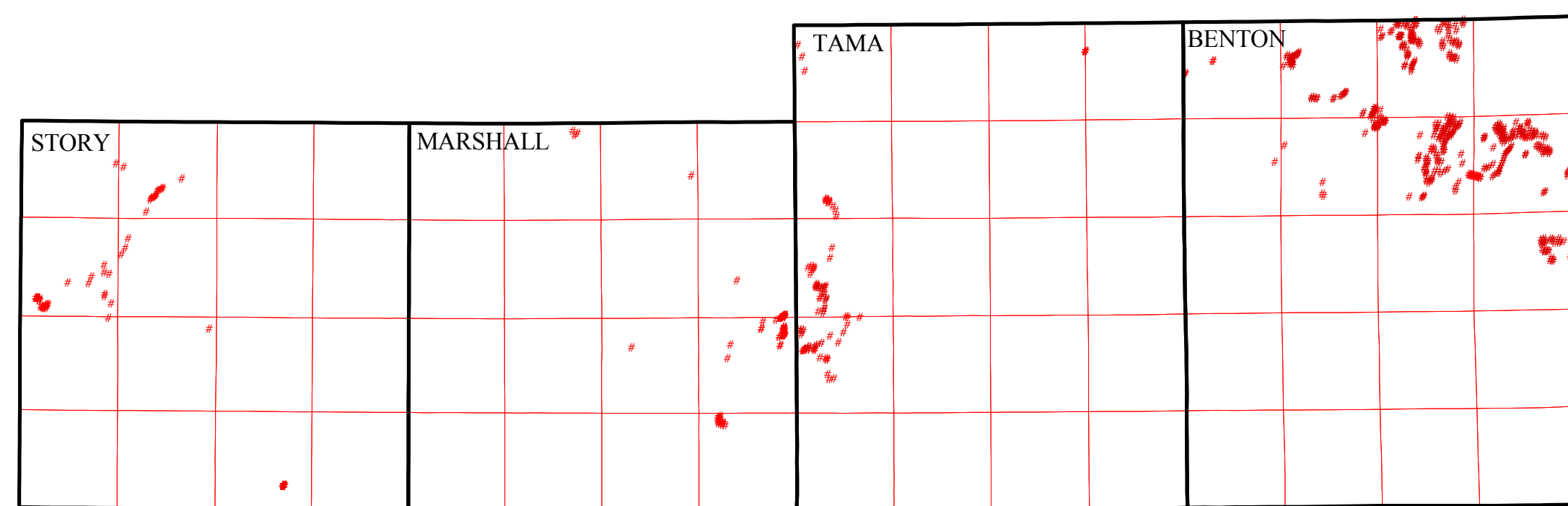
SILURIAN

Si **LaPorte City Formation**; Lower Silurian (upper Llandovery-lower Wenlock). Maximum thickness 140 ft (43 m). Primary lithology: limestone, dense to fossiliferous. Secondary lithologies: chert (includes chert breccias at top); dolomite. Minor: shale, green-gray calcareous shale; clay residuum (at top).

Ss **Scotch Grove Formation**; Lower Silurian (upper Llandovery-middle Wenlock). Maximum thickness 220 ft (67 m). Primary lithology: dolomite, dense to porous. Secondary: chert (absent to abundant). Minor: quartz druse; dolomite/chert breccia.

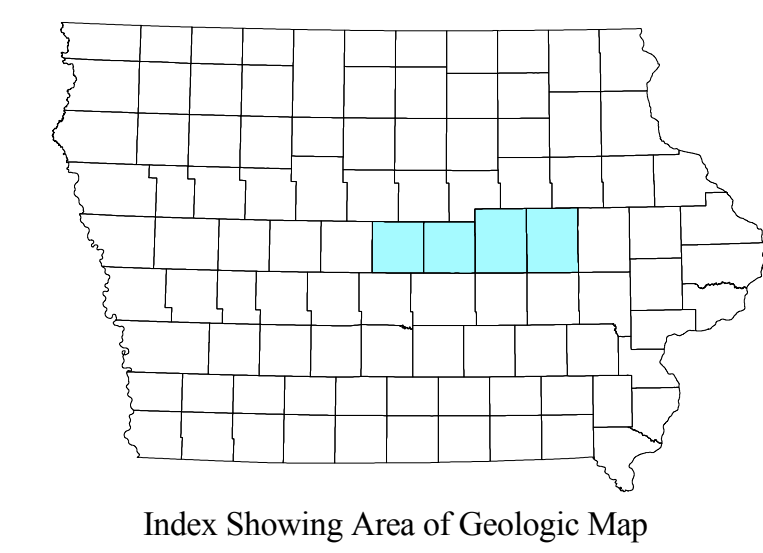
Rock Exposures in the Study Area

•• Areas of bedrock exposure or bedrock surface within the soil horizon



Description of Map Symbols

- GEOLOGIC UNIT CONTACTS
- BEDROCK WELL DATA POINTS
- COUNTY OR TOWN BOUNDARY
- MAJOR HIGHWAYS**
 - Interstate Route
 - U.S. Route
 - State Route
- TOWNSHIP BOUNDARY
- RIVER OR STREAM
- FAULT ZONE**
(dashed where inferred)
 - u - identifies up-thrown block
 - d - identifies down-thrown block



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