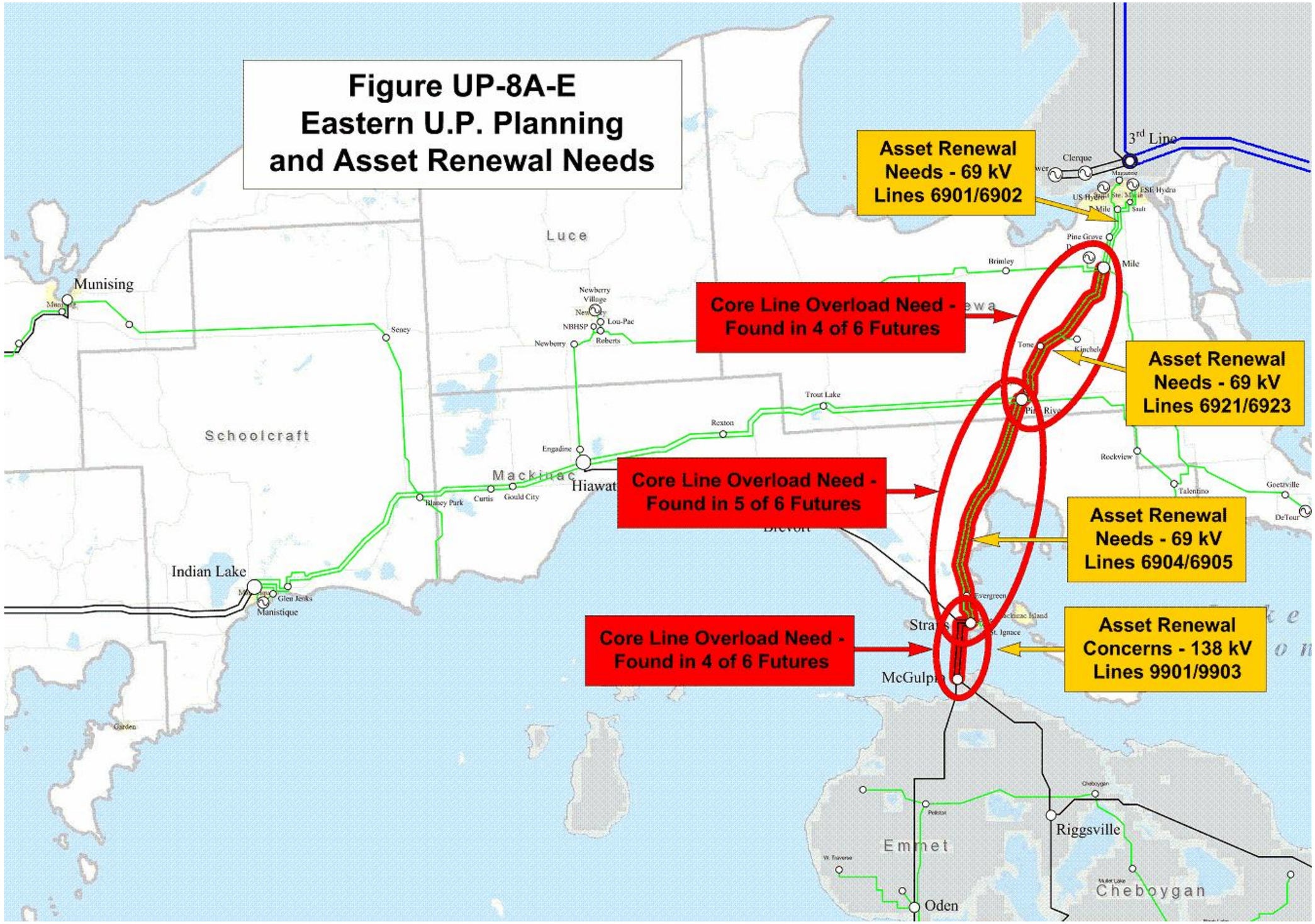
Figure UP-8A-E
Eastern U.P. Planning
and Asset Renewal Needs
Asset Renewal Needs - 69 kV Lines 6901/6902
Core Line Overload Need - Found in 4 of 6 Futures
Asset Renewal Needs - 69 kV Lines 6921/6923
Core Line Overload Need - Found in 5 of 6 Futures
Asset Renewal Needs - 69 kV Lines 6904/6905
Core Line Overload Need - Found in 4 of 6 Futures
Asset Renewal Concerns - 138 kV Lines 9901/9903
Munising
Luce
Schoolcraft
Mackinac
Emmet
Cheboygan
Indian Lake
Manistique
Hiawatha
McGulpin
Riggsville
Oden
3rd Line
Clerque
Pine Grove
Mile
Brimley
Tone
Kinchelo
Trout Lake
Rexton
Engadine
Newberry
Seney
Rockview
Talentino
Goetzville
De Tour
Evergreen
St. Ignace
Mackinac Island
Curtis
Gould City
Blaney Park
Glen Jenks
Garden
Pellston
Cheboygan

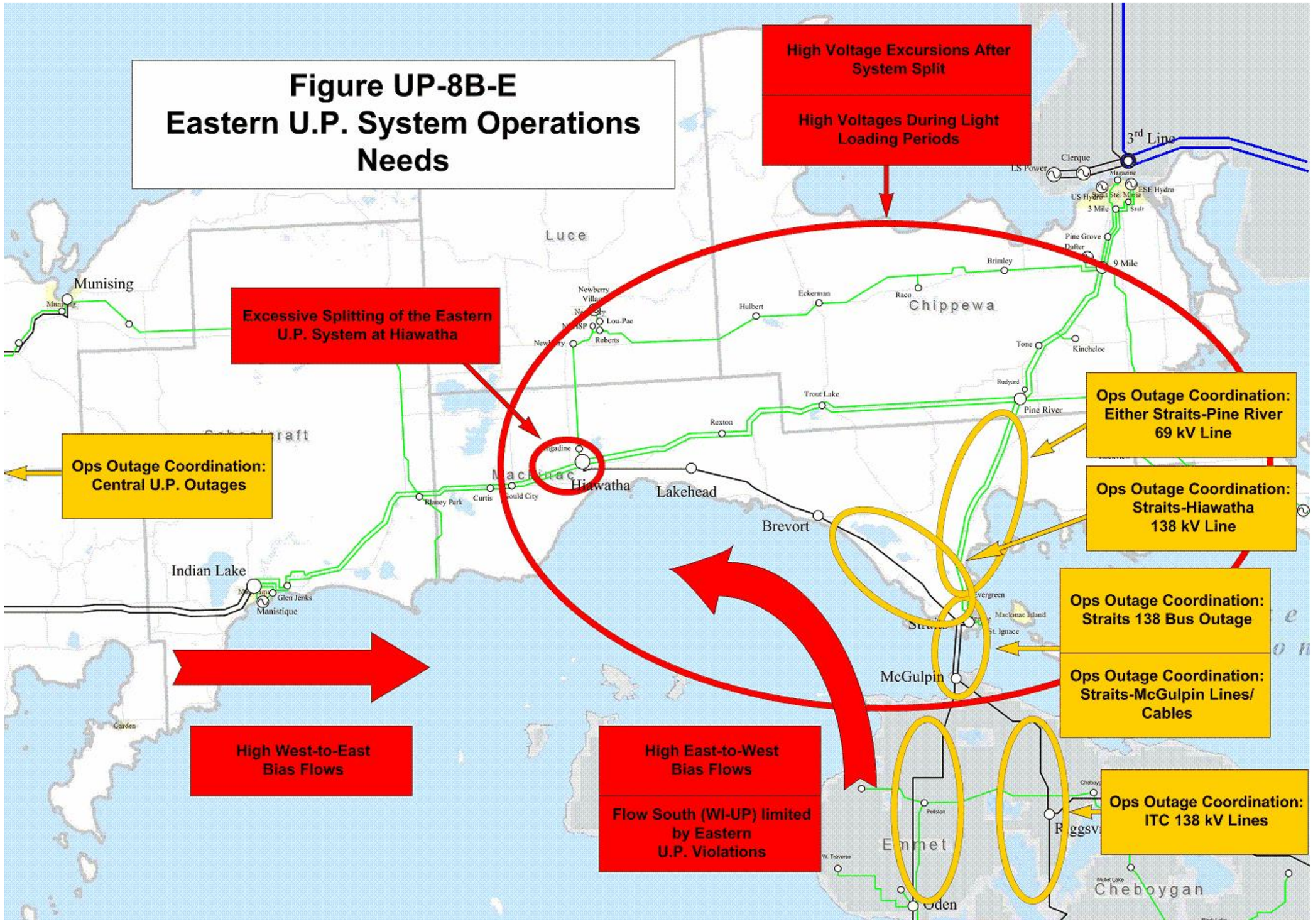
Figure UP-8B-E
Eastern U.P. System Operations Needs
High Voltage Excursions After System Split
High Voltages During Light Loading Periods
Excessive Splitting of the Eastern U.P. System at Hiawatha
Ops Outage Coordination: Central U.P. Outages
Ops Outage Coordination: Either Straits-Pine River 69 kV Line
Ops Outage Coordination: Straits-Hiawatha 138 kV Line
Ops Outage Coordination: Straits 138 Bus Outage
Ops Outage Coordination: Straits-McGulpin Lines/ Cables
Ops Outage Coordination: ITC 138 kV Lines
High West-to-East Bias Flows
High East-to-West Bias Flows
Flow South (WI-UP) limited by Eastern U.P. Violations
Munising
Luce
Chippewa
Hiawatha
Lakehead
Brevort
Indian Lake
Manistique
McGulpin
Pine River
Cheboygan
Emmet
3rd Line
Clerque
Pine Grove
9 Mile
Brimley
Eckerman
Hulbert
Raco
Tone
Kincheloe
Trout Lake
Rexton
Curtis
Blaney Park
Glen Jenks
Garden
Mackinac Island
St. Ignace
Oden