2006 10-Year Assessment

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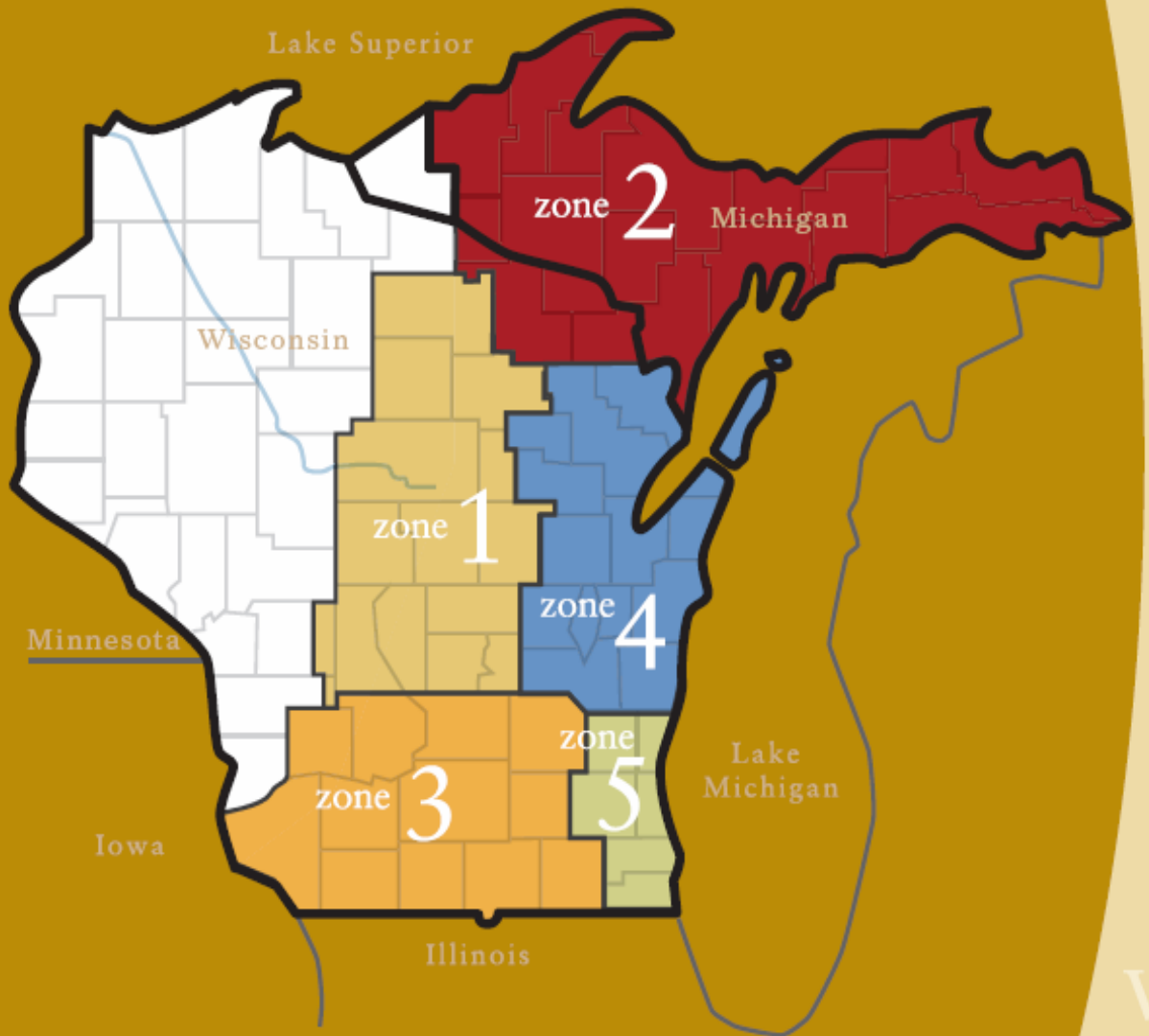
Agenda

- **Overview**
  - **Web Site**
  - **Zones**
  - **Changes**
- **Projects Summary**
- **Future Assessment Schedule**

Overview

- **ATC Planning processes are:**
  - **Continuous**
  - **Iterative**
  - **Transparent**
  - **Effectively performed at “Regional & Local” levels**
- **Annual Report posted in Fall**
  - **Full Report Posted on ATC Website November 8th**
    - **www.atcllc.com**
  - **Summary (see handout)**

Zones



ATC at a glance

- Formed in 2001 as the first multi-state, **transmission-only utility.**
- Owner and operator of approximately **8,900 miles of transmission line** and **460 substations.**
- Meeting electric needs of approximately **five million people.**
- Transmission facilities in **66 counties** in Wisconsin, Michigan and Illinois.
- **$1.3 billion** in total assets.
- **Seven offices** in the communities of Cottage Grove, De Pere, Madison, Waukesha and Wausau, Wis.; Kingsford, Mich.; and Washington DC.

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Comparison 2006 TYA with 2005 TYA Update

Table ES-1 *Summary of American Transmission Co.'s*		
2006 Transmission System Assessment		
	2005 Update	**2006 Assessment**
	(March 2006)	(September 2006)
New Transmission Lines Requiring New Right-of-Way		
345 kV	7 lines / 330 miles	6 lines / 216 miles
138 kV	15 lines / 79 miles	15 lines / 78 miles
115 kV	2 lines / 26 miles	2 lines / 26 miles
69 kV	12 lines / 82 miles	7 lines / 40 miles
Transmission Lines to be Constructed, Rebuilt, Reconductored or Uprated on Existing Right-of-Way		
345 kV	4 lines / 91 miles	3 lines / 98 miles
161 kV	1 / 20 miles	1 / 20 miles
138 kV	41 lines / 742 miles	31 lines / 511 miles
115 kV	4 lines / 78 miles	4 lines / 68 miles
69 kV	13 lines / 94 miles	12 lines / 145 miles
New Transformers to be Installed		
(# of transformers / total increase in capacity)	37 transformers / 6,834 MVA	37 transformers / 6,733 MVA
New Capacitor Banks to be Installed		
(# of installations / capacity)	38 installations / 1,329 MVAR	39 installations / 1,311 MVAR

Comparison of Costs – 2005 vs. 2006 Assessments (in billions)

	Sept 2005	Mar 2006	Nov 2006
In 10-Year Assessment	$2.4	$2.1	1.7*
Not in 10-Year Assessment	$1.0	$1.4	$1.4
Total 10-Year ATC Expenditures	$3.4	$3.5	$3.1

Difference between March and November is that Rockdale-Mill Road and Salem Spring Green-West Middleton were removed from the specific plan.

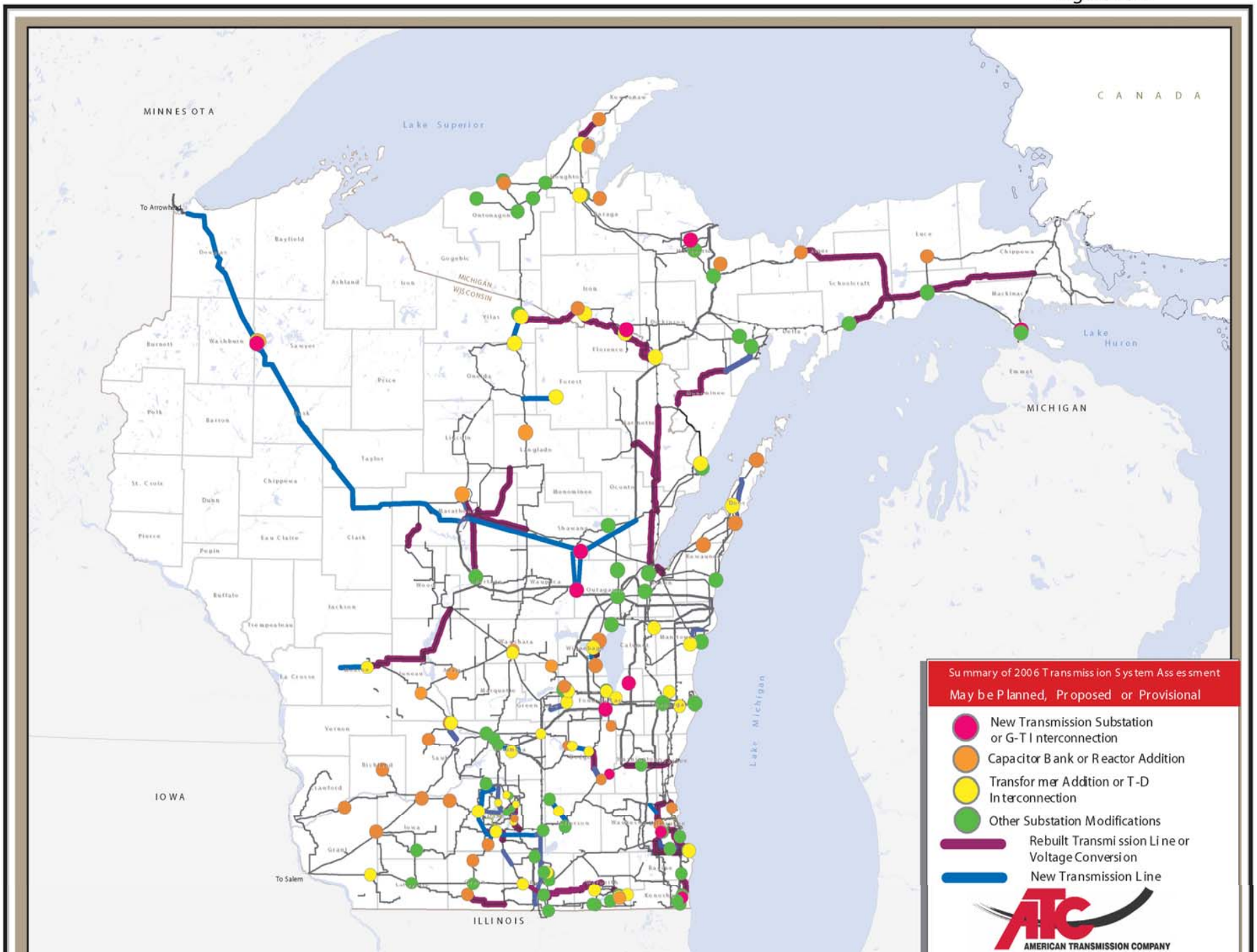
Estimated Capital Costs

	2005 TYA	**2006 TYA**
Asset renewal	$238	$370 million
Generation interc.	$339	$386 million
Distribution interc.	$234	$207 million
Infrastructure relo.	$4	$2 million
Network	$2411	$1907 million
Protection & control	$83	$123 million
Total	**$3.4**	**$3.1 billion**
Total, TYA projects	**$2.4**	**$1.7 billion**

Enhancements/Additions in 2006 TYA

- **Economic Benefits (added)**
  - LMP selected as screening indicator to track constraints
  - Additional benefits/impacts difficult to quantify
  - Developing processes to include in project justification
- **NERC Compliance Section (added)**
  - Fully compliant in 2005 audit
  - Transmission Planner standards
- **Power Flow Model Analysis (enhanced)**
  - Additional steady state studies for “hot summer” (90/10 condition)
  - Better shoulder load model
  - Load Trend
- **Project Delayability (added)**
  - Presents overview of process

Figure ES-1


MINNESOTA
Lake Superior
CANADA
To Arrowhead
MICHIGAN
WISCONSIN
Lake Huron
MICHIGAN
IOWA
Lake Michigan
To Salem
ILLINOIS
Summary of 2006 Transmission System Assessment
May be Planned, Proposed or Provisional
New Transmission Substation or G-T Interconnection
Capacitor Bank or Reactor Addition
Transformer Addition or T-D Interconnection
Other Substation Modifications
Rebuilt Transmission Line or Voltage Conversion
New Transmission Line
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ATC Project Categories

Planned	Proposed	Provisional
Studies complete	Studies not complete	Studies not complete
Application pending or issued	None	None
Project in construction planning phase or under construction	Project identified as preferred alternative	Placeholder project; not necessarily a preferred project alternative

Zone 1 Summary Projects

	Project description	In-service year	Need driver
	Planned projects		
1	Arrowhead-Stone Lake-Gardner Park 345-kV line	2006/2008	Improves reliability, helps increase import capability, reduces reliance on operating guides, lowers system losses
2	Construct Venus-Metonga 115-kV line	2007	Transmission-distribution interconnection
3	Stone Lake 345/161-kV Substation	2008	Improves operation of Arrowhead-Gardner Park line, improves reliability in northwestern Wisconsin
4	Gardner Park-Central Wisconsin 345-kV line	2009	Needed to deliver output of Weston 4 generation
5	Central Wisconsin 345-kV Substation	2009	Needed to deliver output of Weston 4 generation
6	Weston-Sherman St.-Hilltop 115-kV line rebuild to include a new Gardner Park-Hilltop 115-kV line	2007	Addresses potential overloads of existing line, needed to accommodate output of Weston 4 generation
7	Cranberry-Conover 115-kV line	2008	Along with Conover-Plains 138-kV line upgrade (Zone 2), addresses low voltages/voltage collapse in Rhinelander Loop area, improves Wisconsin-Michigan UP transfer capability, improves voltages in western UP
	Provisional projects		
8	Monroe County-Council Creek 161-kV line	2010	Addresses low-voltage situation in the area, improves import capability, avoids need to reconfigure system during emergencies

Zone 2 Summary Projects

	Project description	In-service year	Need driver
	Planned projects		
1	Stiles-Amberg double-circuit 138-kV line rebuild	2006	Improves reliability, helps increase import capability, reduces reliance on operating guides, lowers system losses
2	Cranberry-Conover 115-kV line and Conover-Iron River-Plains rebuild & conversion to 138 kV	2008	Part of Cranberry-Conover project (Zone 1) for Rhinelander Loop, improves voltage profile in the area, addresses aging facilities with condition issues
	Proposed projects		
3	Relocate Cedar Substation (North Lake)	2008	Improves reliability in the area, addresses aging facilities in poor condition
4	Hiawatha-Pine River 69-kV line rebuild & conversion to 138 kV	2009	Addresses potential overloads of existing lines in the area, addresses aging facilities in poor condition, improves voltage profile in the area, accommodates future expansion in the area
	Provisional projects		
5	Convert Hiawatha-Indian Lake double-circuit 69-kV line to 138-kV operation	TBD	Addresses chronic transmission service limitation, improves voltage profiles in the area, enhances value of another provisional project
6	Replace the existing Straits Substation (Mackinac)	TBD	Improves reliability in eastern UP, addresses substation facilities in poor condition, provides for future expansion
7	Blaney Park-Munising 69-kV line rebuild & conversion to 138 kV	2012	Addresses low voltages in the area, improves stability of Presque Isle generation, addresses aging facilities in poor condition

Zone 3 Summary Projects

	Project description	In-service year	Need driver
	Planned projects		
1	Columbia-Wyocena-Rio 69-kV line	2007	Transmission-distribution interconnection
2	Kegonsa-Sycamore 138-kV line	2007	Addresses low voltages, accommodates transmission service request
3	Southwest Delavan-Bristol 138-kV line (operate at 69 kV)	2007	Transmission-distribution interconnection
4	Jefferson-Lake Mills-Stony Brook 138-kV line	2008	Addresses low voltages and overloaded facilities, accommodates T-D interconnection
	Proposed projects		
5	Rubicon-Hustisford-Horicon 138-kV line	2008	Addresses low voltages
6	North Madison-Huiskamp138-kV line	2008	Addresses low voltages, averts voltage collapse
7	Oak Ridge-Verona 138-kV line	2009	Improve area voltages and addresses overloads
8	Paddock-Rockdale 345-kV line	2010	Access Initiative
9	Rockdale-West Middleton 345-kV line	2011	Addresses overloads and low voltages, improves transfer capability to Madison area, averts voltage collapse, lowers system losses
10	Huiskamp-Blount 138-kV line	2012	Addresses low voltages, averts voltage collapse
11	North Madison-West Middleton 345-kV line	2016	Averts voltage collapse, addresses low voltages in the Madison area, lowers system losses, improves stability at Columbia Power Plant, improves transfer capability to Madison area
12	Rock River-Bristol-Elkhorn 69-kV to 138-kV conversion	2009	Addresses overloads and low voltages

Zone 3 Summary Projects continued

	Provisional projects		
13	Lake Delton-Birchwood 138-kV line	2013	Addresses overloads and low voltage issues in Reedsburg loop
14	Horicon-East Beaver Dam 138-kV line (North Beaver Dam-East Beaver Dam 138-kV line scheduled in service in 2006)	2014	Addresses potential overloads and low voltages
15	North Lake Geneva-White River 138-kV line (South Lake Geneva-White River 138-kV line in-service date to be determined)	2012	Addresses potential overloads and low voltages, transmission to distribution interconnection

Zone 4 Summary Projects

	Project description	In-service year	Need driver
	Planned projects		
1	Loop Butternut-South Fond du Lac 138-kV into Forward Energy Center	2006	Interconnection of new Forward Energy Center Power Plant
2	Loop Forest Junction-Arcadian 345-kV into Cypress Substation	2006	Interconnection of new wind farm generation
3	Werner West (New London) 345/138-kV Substation	2006	Addresses chronic transmission service limitation and facility overloads, improves system voltages in the area
4	Stiles-Amberg double circuit 138-kV line rebuild	2006	Addresses chronic transmission service limitation, improves voltage stability limit in the UP, addresses aging facilities in poor condition
5	Werner West-Morgan 345-kV line and Clintonville-Werner West 138-kV line	2009	Addresses chronic transmission service limitations in Green Bay, improves Wisconsin-UP transfer capability, lowers system losses
	Proposed projects		
6	Crivitz-High Falls 69-kV double-circuit line rebuild	2008	Addresses low voltages and facility overloads
7	Canal (Sturgeon Bay)-Dunn Road 138-kV line	2012	Addresses low voltages and facility overloads
8	Dunn Road-Egg Harbor 69-kV line	2016	Addresses low voltages and provides network service
	Provisional projects		
9	Shoto-Custer 138-kV line	2012	Addresses facility overloads
10	Bayport-Suamico-Sobieski-Pioneer 69-kV line rebuild & conversion to 138 kV	2016	Addresses facility overloads, addresses aging facilities in poor condition and provides network service
11	Northside-City Limits (Menasha) 138-kV line	2016	Addresses facility overloads

Zone 5 Summary Projects

	Project description	In-service year	Need driver
	Planned projects		
1	St. Lawrence-Pleasant Valley-Saukville 138-kV line reconductor	2008	Accommodates new generation at Port Washington Power Plant
	Proposed projects		
2	Expand 345/230/138-kV Substation at Oak Creek	2009	Accommodates new generation at Oak Creek Power Plant
	Provisional projects		
3	Expand Brookdale Substation (Hale)	2013	Accommodates new generation at Oak Creek Power Plant
4	Oak Creek-Hale-Granville 345-kV line	2013	Accommodates new generation at Oak Creek Power Plant

New TYA Process Milestones

- Load Forecast (receive by 6/1/07)
- Models (start by 9/1/07)
- Analysis and Sensitivities (by 12/31/07)
- Project List/Requests (by 2/15/08)
- Resource Leveling (by 4/1/08)
- Writing (by 4/1/08)
- Financials (by 8/1/08)
- Review (by 9/1/08)
- Publication (by 10/1/08)

Interim TYA Process Milestones

- Project Scope Review (Fall, W 2006/7)
  - Need
  - Delayability
  - Alternatives
  - Sensitivities
  - Prioritization
- Project List/Requests confirmed (Feb 2007)
- Resource Leveling (Spring 2007)
- Financials (Summer 2007)
- Updated Plan (Fall 2007)

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FEEDBACK & QUESTIONS