10-Year Assessment Preliminary Solutions Customer and Stakeholder Update Meeting

> David Smith July 10, 2009 Pewaukee CR160



Purpose

- Multiple Need Drivers Reminder
- Review Preliminary Solutions
 - Major Projects
 - Collaborative MI, Core
- Next Steps
- Summary

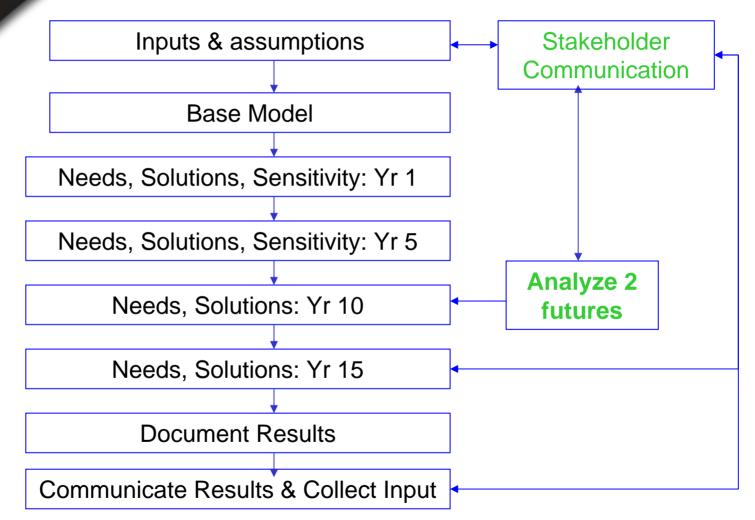


Multiple Need Drivers

- Safety
- Performance / Condition
- Traditional Reliability Analysis
- Multiple Contingency
- Economic Benefits
- Access
- Regional Initiatives
- Mandatory NERC Standards



Enhanced Assessment

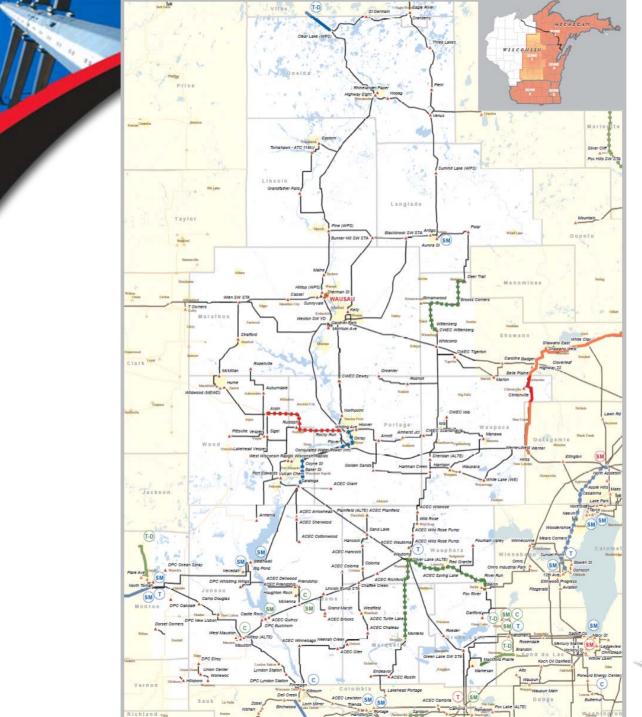




2009 Assessment Process

- Preliminary Needs
 - 4 summer peaks (2010, 2014, 2019, 2024)
 - ID near term impacts
- Additional Needs Sensitivity
 - Load Forecast +5% (2014)
 - West-to-East Bias at 70% load (2010,14)
 - East-to West Bias at 90% load (2010,14)
 - Futures two (2019)
 - Replaced some sensitivities
 - Consider results in project development

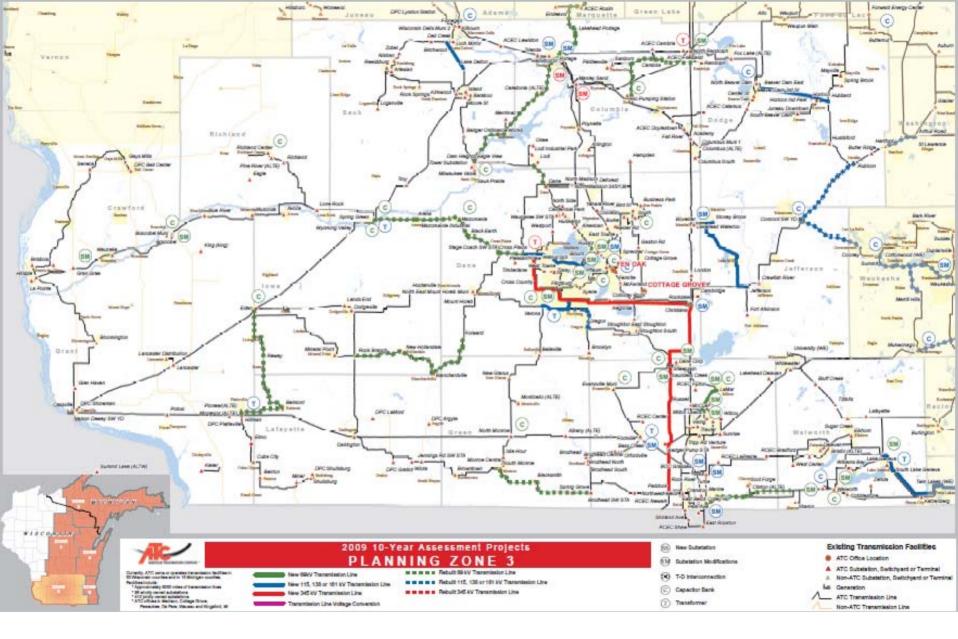






	Zone 1 Larger Projects	In- service year	Need driver
Planne	d projects	_	
1	Rebuild Arpin-Rocky Run 345-kV	2010	Improve condition of existing line
Propos	ed projects		
2	Monroe County-Council Creek 161- kV line	2013	low-voltage in the area, improves import capability, avoids need to reconfigure system
3	Construct 115-kV line Woodmin to the Clear Lake Substations	2012	T-D interconnection
Prelimi	nary Asset Management projects		
4	Wautoma-Berlin 69-kV rebuild	2010	Improve condition of existing line
5	Whitcomb-Deer Trail 69-kV rebuild	2010	Improve condition of existing line
6	Montello-Wautoma 69-kV rebuild	2017	Improve condition of existing line
7	Plover-Whiting 115-kV rebuild	2019	Improve condition of existing line





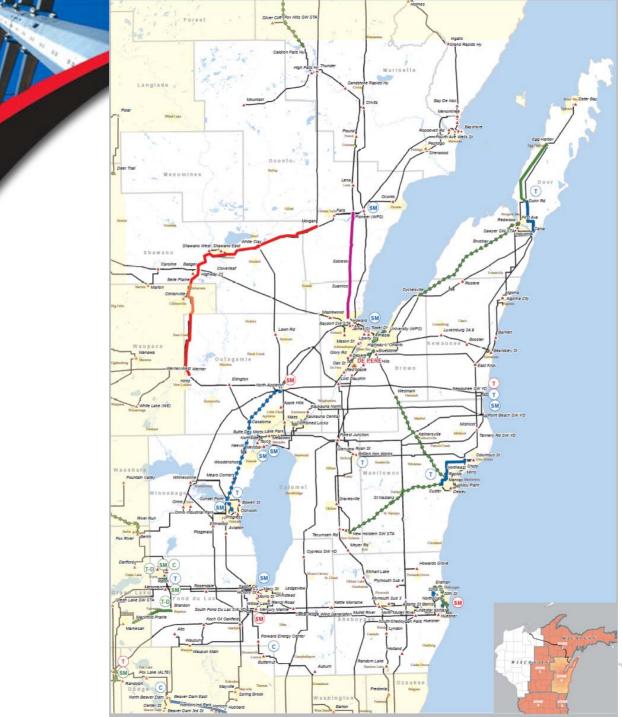


	Zone 3 larger Projects	In- service year	Need driver
Planned	d projects		
1	Jefferson-Stony Brook 138-kV line	2009	low voltages, overloaded facilities, future T-D interconnection
2	Oak Ridge-Verona 138-kV line	2010	area voltages and overloads
3	Paddock-Rockdale 345-kV line	2010	Access initiative
4	Rockdale-West Middleton 345-kV line	2013	overloads and low voltages, transfer capability to Madison area, voltage collapse, losses
Propose	ed projects		
5	Replace overhead Blount-Ruskin 69-kV lines with one underground	2011	ATC proposal with Madison
7	Verona-Oregon 69-kV line rebuild	2011	area voltages and overloads
8	Brodhead-South Monroe 69-kV line	2011	area voltages and overloads
9	Bass Creek 138/69 kV transformer	2013	area voltages and overloads
10	Uprate Fitchburg-Nine Springs and Royster-Pflaum 69-kV lines, AGA	2013	area voltages and overloads
11	Spring Green 2 nd 138/69-kV Tr.	2013	area voltages and overloads
12	Rebuild Colley Road-Brick Church	2013	overloads and low voltages



2.4					
P	Zone 3 - Large Provisional projects				
	13	Horicon-East Beaver Dam 138-kV line	2019	Addresses potential overloads and low voltages	
	14	North Lake Geneva-South Lake Geneva 138-kV line	2016	Addresses potential overloads and low voltages, transmission to distribution interconnection	
	15	Lake Delton-Birchwood 138-kV line	2017	Addresses overloads and low voltage issues in Reedsburg loop	
	16	West Middleton-Blount 138-kV line	2017	Addresses overloads and low voltages	
	17	Spring Valley-Twin Lakes-South Lake Geneva 138-kV line	2018	Addresses overloads and low voltages	
	Prelimin	ary Asset Management projects			
	18	Dam Heights-Portage 69-kV rebuild	2013	Improve condition of existing line	
	19	West Middleton-Stagecoach 69-kV underground replacement	2019	Improve condition of existing line	
	20	Hillman-Eden 69-kV line rebuild	2018	Improve condition of existing line	
	21	Concord-Rubicon 138-kV rebuild	2013	Improve condition of existing line	
	22	Rock River-Forward 69-kV rebuild	2010	Improve condition of existing line	
	23	Spring Green-Stagecoach 69-kV rebuild	2010	Improve condition of existing line	
	24	Sycamore-East Towne 69-kV replace underground cables	2012	Improve condition of existing lines	





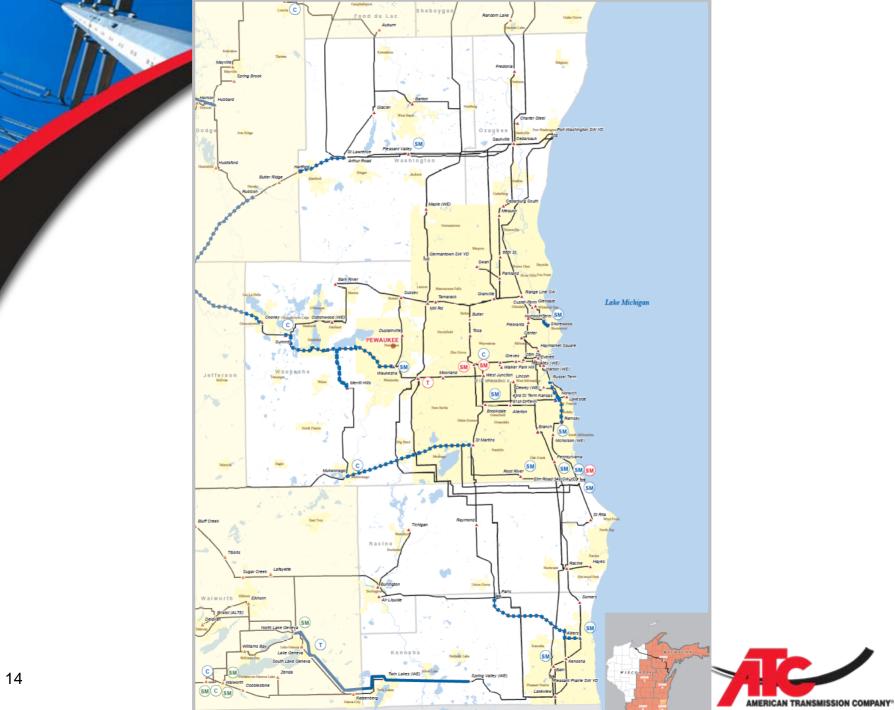


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	Zone 4 Larger Projects	In- service year	Need driver
Planned p	rojects		
1	Werner West-Morgan 345-kV line and Clintonville-Werner West 138-kV line	2009	transmission service limitations in Green Bay area, Wisconsin-UP transfer capability, losses
Proposed	projects		
2	Kewaunee bus reconfiguration and a new second 345/138-kV transformer	2011	offsite power reliability, switchyard maintenance and operation flexibility, generation availability, present day substation standards
3	Canal (Sturgeon Bay)-Dunn Road 138-kV line	2012	low voltages and overloads
Provisiona	l projects		
4	Dunn Road-Egg Harbor 69-kV	2016	low voltages and network service
5	Shoto-Custer 138-kV line	2020	Addresses facility overloads
6	Bayport-Suamico-Sobieski- Pioneer rebuild & 138 kV conversion	2020	overloads, aging facilities in poor condition, network service



Zone 4 Larger Preliminary Asset Management projects				
7	Caldron Falls-Goodman rebuild	2019	Improve condition of existing line	
8	New Holstein-Custer rebuild	2019	Improve condition of existing line	
9	Dyckesville-Sawyer	2013	Improve condition of existing line	
10	Danz-University 69-kV replace underground cable	2017	Improve condition of existing line	
11	Oak Street-Highway V rebuild	2013	Improve condition of existing line	
12	North Appleton-Butte des Morts 138-kV line rebuild	2017	Improve condition of existing line	
13	Lodestar-Erdmann replace underground cable	2019	Improve condition of existing line	
14	Redwood-First Avenue replace submarine cable	2015	Improve condition of existing line	
15	Erdmann-Edgewater replace underground cable	2017	Improve condition of existing line	
16	Finger Road-Danz rebuild	2016	Improve condition of existing line	
17	Neevin-Woodenshoe 138-kV line rebuild	2016	Improve condition of existing line	
18	Mears Corners-Sunset Point 138-kV line rebuild	2012	Improve condition of existing line	
19	Butte des Morts-Neevin 138-kV line rebuild	2015	Improve condition of existing line	





	Zone 5 Larger Projects	In- service year	Need driver
Planned pr	ojects		
1	Expand 345/230/138-kV substation at Oak Creek	2009	new Oak Creek generation
Provisional	projects		
2	Arcadian 345-138 transformer replacement	2013	overloads
3	Spring Valley-Lake Geneva 138-kV line	2018	overloads and low voltages
Preliminary	Asset Management projects		
4	Edgewood-St. Lawrence 138-kV line rebuild	2014	Improve condition of existing line
5	Mukwonago-Edgewood 138-kV line rebuild	2014	Improve condition of existing line
6	Concord-Cooney 138-kV line rebuild	2014	Improve condition of existing line
7	Paris-Albers 138-kV line rebuild	2014	Improve condition of existing line
8	Merrill Hills-Summit 138-kV line rebuild	2017	Improve condition of existing line
9	Waukesha-Summit 138-kV line rebuild	2015	Improve condition of existing line
10	St. Lawrence-Hartford 138-kV line rebuild	2014	Improve condition of existing line





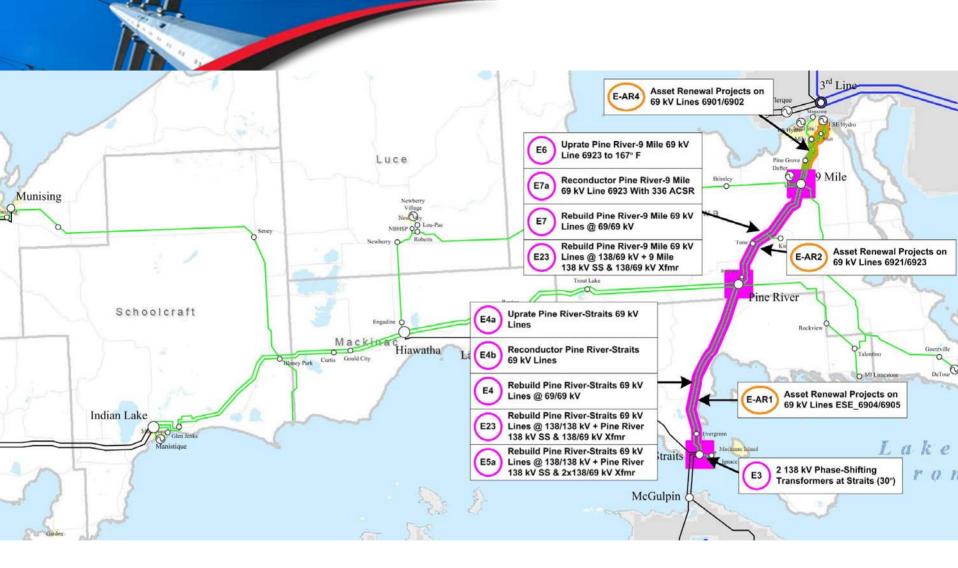


	Zone 2 Larger Projects	In-service year	Need driver
Planne	d projects		
1	Cranberry-Conover 115-kV line (completed in 2008) and Conover- Iron River-Plains 138 kV	2008- 2010	voltage profile in the area, aging facilities with condition issues
Provisi	onal projects		
2	Straits-Pine River 138-kV line rebuild/conversion	2012	UP Collaborative
3	Frontier-Pine River/Nine Mile 69-kV line	2012	T-D interconnection, UP Collaborative
4	Pine River-Nine Mile 69-kV rebuild to double-circuit 138/69-kV line	2012	UP Collaborative
5	Increase ground clearance of M38- Atlantic 69-kV line from 120 to 167 degrees F	2013	UP Collaborative



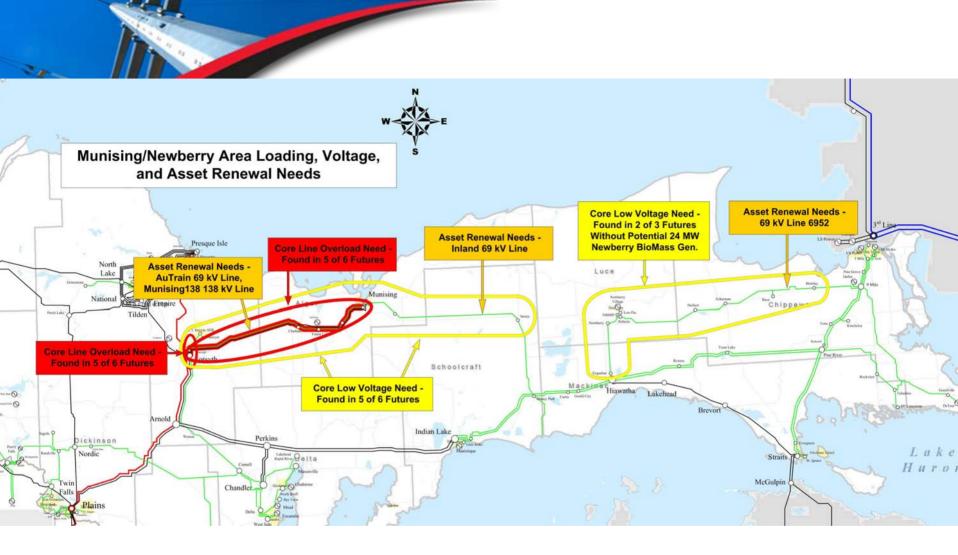
Zone 2 Preliminary Asset Management projects				
6	Straits-McGulpin 138-kV submarine cable replacements	2020	Improve condition of existing line	
7	Nine Mile-Roberts 69-kV rebuild	2013	Improve condition of existing line	
8	Gwinn-Munising (Autrain) 69-kV rebuild	2015	Improve condition of existing line	
9	Munising-Blaney Park (Inland line) 69-kV line re-insulate	2014	Improve condition of existing line	
10	Forsyth-Munising 138-kV line re- insulate	2015	Improve condition of existing line	





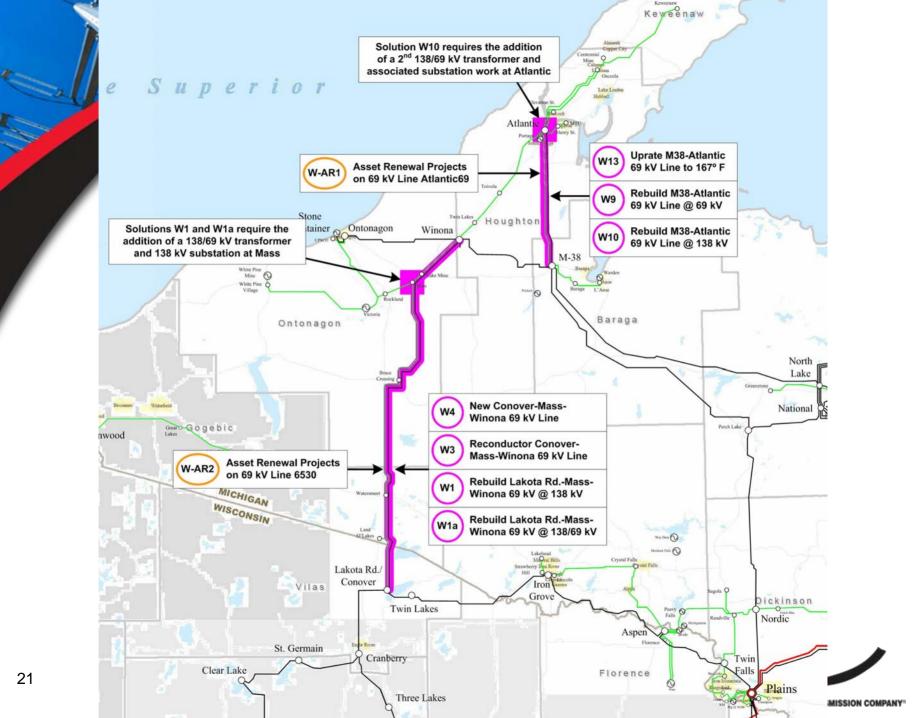
Collaborative Solution Sets - East Upper Peninsula

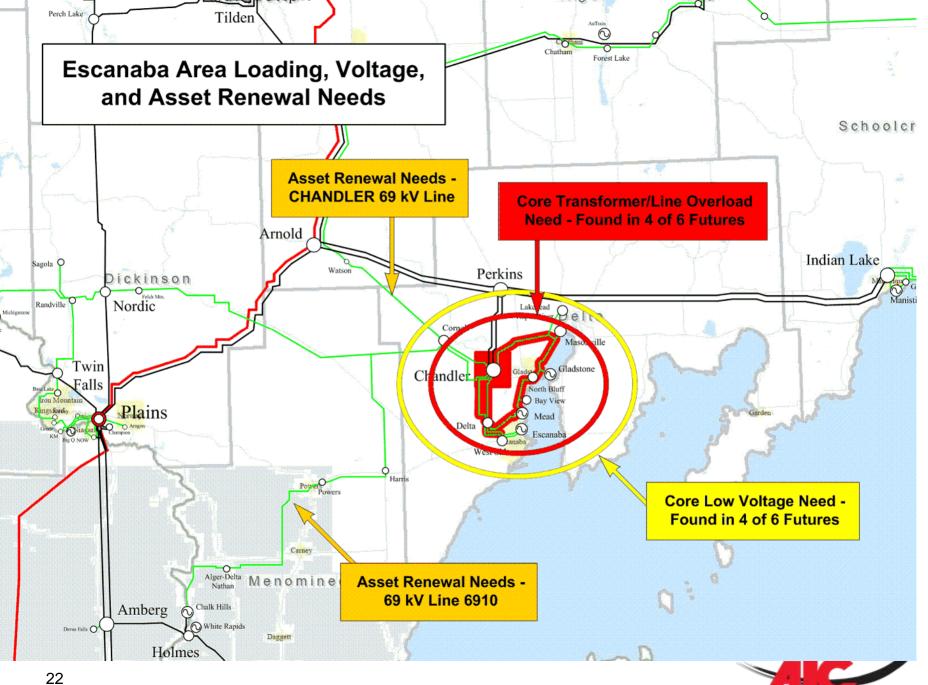




Collaborative Solution Sets – Munising/Newberry Area







MERICAN TRANSMISSION COMPANY

Schedule

- Study Plan Done
- Expected Load Forecast Done
- Stakeholder Mtg October 16, 2008
- Model Development Done
- Stakeholder Needs Mtg March 6, 2009
- Preliminary Results & futures Done
- Stakeholder Solutions Mtg July 10, 2009
- Document and Publish 3rd Qtr 2009



For more information

Contact David Smith at <u>dsmith@atcllc.com</u> Or call at 920-338-6537



Thanks for Participating!

