

Planning for Resilient Cities Workshop

Learn with your peers from metro cities and counties!



Spring 2018 Planning for Resilient Cities

WEDNESDAY, APRIL 11 11:30 a.m. – 1:30 p.m.

League of MN Cities 145 University Ave W, St Paul

Workshop: [RSVP](#) **Webinar:** Noon. [Zoom RSVP](#)

Resources and presentations available at

www.allianceforsustainability.com/resilientcities



Alliance for Sustainability

Ecologically sound, economically viable, socially just and humane

AGENDA

11 a.m. Welcome & context – Sean Gosiewski, Executive Director, Alliance for Sustainability

- **Introductions** - how cities are exploring energy/resilience goals in comp plans & action steps

11:30 a.m. Panel Presentations and Q & A

- **Minneapolis 2040** – Jack Byers, Ph.D., AICP Long Range Planning www.minneapolis2040.com
- **Resilience & Energy themes from a range of cities** – Mahtomedi, St. Anthony, Blaine, Savage - Breanne Rothstein, AICP City Planner, WSB & Associates
- **Washington County – Resilience & Economic Competitiveness** - Stephanie Souter, AICP – Senior Planner, Public Health and Environment; & Christopher Eng, Economic Development Director www.co.washington.mn.us/404/Comprehensive-Plan

12:35 p.m. Energy and Resilience Planning and Implementation Resources

Energy - Brian Ross, Great Plains Institute www.regionalindicatorsmn.com/energy-planning

- **Energy Planning Resources & sample goals** (LoGoPep) Partners in Energy (Xcel Energy/CEE) Example climate action plan (St. Louis Park) Large Sites (Ever-Green Energy) Consumer Protection (MN CUB)
- **Comprehensive Plan solar requirement** (Met Council) Sample Solar ordinances/ solar-ready communities (GPI), Solar Possible (CERTS) Solar Feasibility Studies (Blue Dot)
- **Building Energy Efficiency** - Home Energy Squad (CEE) Business Energy Benchmarking (CEE/ Hennepin) Sustainable Building Policy (St. Paul) Stretch Building Codes (Fresh Energy)
- **Energy Implementation Partners** – Sean Gosiewski, Alliance for Sustainability
 - **Roof Top PV Solar & storage** - All Energy Solar, Innovative Power Systems, Novel Energy, MREA
 - **Reflective Roof Options** – Four Season Energy Efficient Roofing
 - **Commercial Solar Garden subscription** opportunities - Rene Sola

Transportation - Phil Muessig, MN GreenStep best practices, **Drive Electric MN/Planning for EVs** (GPI)

Adaptation, Water, Resilient Infrastructure - **Eric Wojchik**, Resilience Coordinator, Met Council, Climate Vulnerability Assessment (Met Council) Climate Adaptation & Community Resilience Plans (GCS Best Practice #29, Laura Millberg, MPCA) Resilient Infrastructure Planning (Janna Kieffer, P.E. Barr)

We Seek Your Feedback as cities prepare to launch a **Resilient Cities Coalition** to advance their work

1:00 p. m. Small group conversations – **Energy, Buildings, Transportation, Resilient Infrastructure**

- **Cities share current questions & resources they are seeking** for setting goals, projects & local policies
- **Share current planning and implementation resources** for local projects and sample local policies
- **Explore ways that deeper collaboration among cities could advance their energy & resilience work**



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Event Convener & Facilitator

Sean Gosiewski, Executive Director,
Alliance for Sustainability
612-250-0389 | Sean@afors.org

Our Spring 2018 Resilient Cities Series Workshops are Co-Sponsored by:



EVER-GREEN ENERGY™

Partner Sponsor

- **MPCA/ MN GreenStep Cities/ LMC** - Phil Muessig, MN Greenstep Cities 651-757-2594, Philipp.muessig@state.mn.us

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- **Center for Energy & Environment** - Elena Foshay, Partners in Energy, 612.244.2457 efoshay@mncee.org www.mncee.org
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- **Novel Energy Solutions**, Keith Pieper, 612 940-5633 keith.pieper@novelenergy.biz www.novelenergysolutions.com
- **Pale Blue Dot**, Ted Redmond co-founder, 612.669.7056 tredmond@paleblue-dot.org www.BLUEdotregister.org
- **Midwest Renewable Energy Association** Jane Cowan Solar Program jane@midwestrenew.org www.midwestrenew.org

Basic Sponsors

- **Ever-Green Energy** - Nina Axelson, Community Relations (612) 695-1288 Nina.Axelson@ever-greenenergy.com
- **Fresh Energy** - Ben Rabe, Buildings & Energy Performance, 651-726-7574 rabe@fresh-energy.org

How can the Resilient Cities Coalition assist your work?

Let us know on April 11 or take [our survey!](http://www.allianceforsustainability.com/resilientcities) www.allianceforsustainability.com/resilientcities

The MN Resilient Cities Coalition is a group of ambitious cities working together to advance their community-wide energy, climate and resilience goals through:

Public Policy

Cities working together to ensure their interests are heard on state policy opportunities and challenges

- Renewable energy standard
- Opposing local pre-emption

Projects

Cities collaborating to help high-impact projects go to scale metro wide

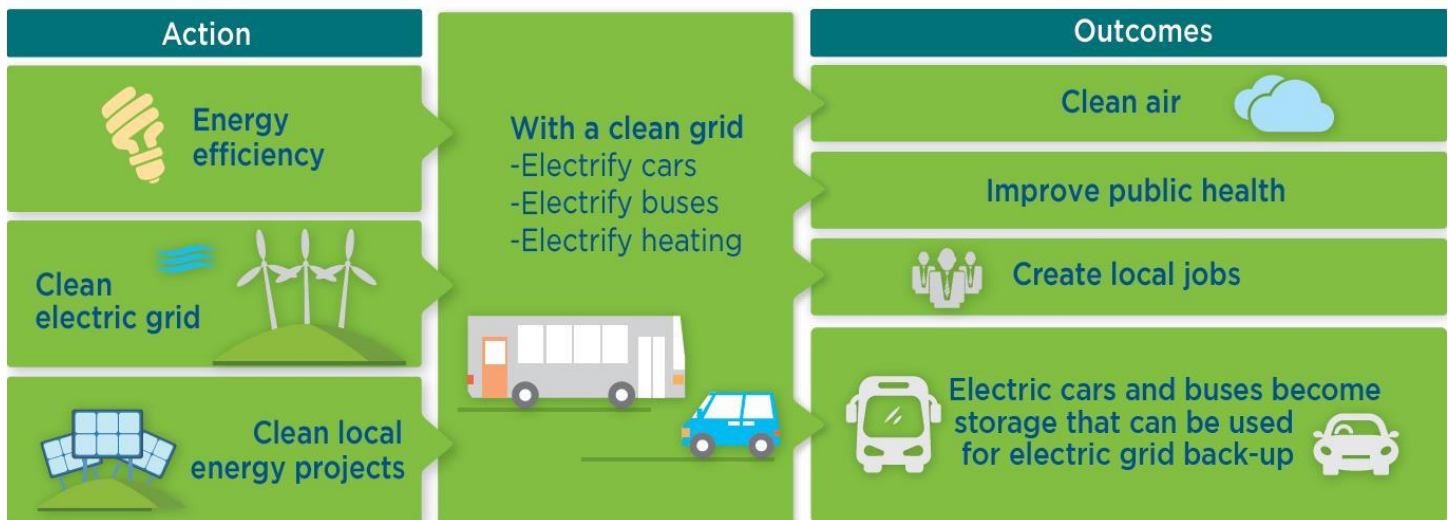
- EV infrastructure planning
- PV solar for public buildings
- Business Benchmarking

Peer-learning

Education on current and future energy/resilience topics

- Sharing draft comp plan strategies
- Cities contributing to utility integrated resource planning
- Infrastructure funding strategies

What could 2050 and 80% greenhouse gas reduction look like?



Topic Resource People

April 11, 2018 Planning for Resilient Cities Workshop www.allianceforsustainability.com/resilientcities

Energy

- **Brian Ross**, Senior Program Manager, **Great Plains Institute**, 612- 501-1531 bross@gpisd.net www.betterenergy.org LoGoPep www.regionalindicatorismn.com/energy-planning
- **Ted Redmond** co-founder, Pale Blue Dot 612.669.7056 tredmond@paleblue-dot.org www.BLUEdotregister.org Solar Feasibility Studies, Community Wide Carbon baselines and Climate Action Planning, Climate Vulnerability
- **Ross Hammond**, PE, Alliance for Sustainability, Energy Advisor, 612 385-8436 ralphdthomas@comcast.net
- **Elena Foshay**, Partners in Energy, Center for Energy and Environment 612.244.2457 efoshay@mncee.org
- **Stacy Boots Camp**, Recruitment and Outreach, MN CEE 612.244.2429 sbootscamp@mncee.org www.mncee.org
- **Cameran Bailey**, Met Council SolSmart Solar Advisor .602.1212 Cameran.Bailey@metc.state.mn.us
- **Ben Rabe**, Senior Policy Associate. Buildings & Energy Performance, Fresh Energy 651-726-7574 rabe@fresh-energy.org www.fresh-energy.org/
- **Leah Hiniker**, Hennepin Co. Energy Manager 612 543-1219 leah.hiniker@co.hennepin.mn.us
- **All Energy Solar** Ryan Buege, Director of Sales & Marketing, (612) 499-4188 ryan.buege@allenergysolar.com
- **Four Seasons Energy Efficient Roofing** - Darrell Schaapveld 651-433-2443 darrell@fseer.com www.fseer.com
- **Innovative Power Systems** - Lynn Hinkle, 612 310-4742 lynnh@ips-solar.com ; www.ips-solar.com
- **Ever-Green Energy** - Nina Axelson, Community Relations (612) 695-1288 Nina.Axelson@ever-greenenergy.com www.ever-greenenergy.com
- **Fresh Energy** - Ben Rabe, Buildings & Energy Performance, 651-726-7574 rabe@fresh-energy.org
- **Novel Energy Solutions**, Keith Pieper Director of Sales 612 940-5633 keith.pieper@novelenergy.biz
- **ReneSola Power** - Aric Sorenson, Minneapolis, 612 280 1605 aric.sorenson@renesolapower.com
- **MN Citizen's Utility Board** Carmen Carruthers, 651-300-4701 carmenc@cubminnesota.org www.cubminnesota.org

Tools for Local Government Leadership on Energy and Resilience

State of Minnesota Energy Goals

Many communities adopt the Minnesota energy or greenhouse gas (GHG) reduction goals. Minnesota has set a mandatory 80% GHG emission reduction target by 2050, from a 2005 emission baseline.

- The 2025 GHG reduction target is a 30% reduction from 2005 baseline.
- For renewable energy, MN has set an aspirational solar energy target of 10% of electric retail sales by 2030.

MN climate action plan – Climate Solutions & Economic Opportunities www.egb.state.mn.us/content/climate-change

MN Green Step Cities www.mngreensteps.org

Metro CERTS www.cleanenergyresourceteams.org/regions/metro **Great Plains Institute** www.betterenergy.org

LoGoPEP Energy Planning Resources www.regionalindicatorsmn.com/energy-planning

Met Council Local Planning Handbook - Resilience www.metrocouncil.org/Handbook.aspx

Met Council workshops and Webinars www.metrocouncil.org/Handbook/Training/Workshops.aspx

Partners in Energy - Xcel Energy with the Center for Energy & Environment – free energy action planning assistance
www.xcelenergy.com/working_with_us/municipalities/partners_in_energy

City of St. Paul Sustainable Building Policy Kurt Schultz St. Paul PED 651-266-6590 kurt.schultz@ci.stpaul.mn.us
www.stpaul.gov/departments/planning-economic-development/economic-development/sustainable-building-policy

Alliance for Sustainability

Planning for Resilient Cities Workshops www.afors.org/sustainablecommunities

Consulting Services available for Cities


Sean Gosiewski, Executive Director Alliance for Sustainability, 612-250-0389 sean@afors.org

www.allianceforsustainability.com/consulting

Ted Redmond, co-founder, Pale Blue Dot 612.669.7056 trdmond@paleblue-dot.org

www.bluedotregister.org/community-services/#Resilient-Cities

- Community Wide Carbon Base Line Analysis, Climate Action Planning and Solar Feasibility Studies
- Community Climate Vulnerability Assessments
- Sustainability and the Natural Step Framework Workshops
- Community engagement and meeting facilitation using the Technology of Participation
- Community Energy, Resilience and Sustainability Planning with a team of experienced consultants.
- In-house sustainability trainings for inter-departmental work teams and citizen commissions.
- Support for cities launching new Environment & Sustainability Commissions
- Community Engagement Tools for Energy Conservation, Water Quality, Recycling, Composting

	<p>Brian Ross, Great Plains Institute, 612- 501-1531 bross@gpsid.net www.betterenergy.org</p> <p>Abby Finis Great Plains Institute, 612 767-7295 afinis@gpsid.net</p> <p>Maureen Colburn, Project Manager, LHB, Corp. 612.752.6954 or maureen.colburn@lhbcorp.com.</p>
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LoGoPEP Energy Planning Resources www.regionalindicatorsmn.com/energy-planning

Energy Planning Guide: a basic framework for addressing energy use, energy resources, and energy development in the comprehensive plan process

www.regionalindicatorsmn.com/customer_media/pdf_documents/energyplanningguide_april2017.pdf

- **Energy Planning Workbook:** a step-by-step guide for energy planning from defining existing conditions to setting achievable aspirational goals with proven strategies

http://regionalindicatorsmn.com/customer_media/pdf_documents/energyplanningworkbook_may2017.pdf

- **Solar Calculator:** a tool to help you understand your available solar resources and set your own solar electricity goals

www.regionalindicatorsmn.com/customer_media/pdf_documents/SolarEnergyCalculator_May2017.xlsx

Sample RFP A brief guide on how to incorporate energy and/or climate resilience in a city's request for proposal.

http://www.regionalindicatorsmn.com/customer_media/EnergyRFP2.pdf

Example Local Government Energy Goals

www.regionalindicatorsmn.com/customer_media/pdf_documents/energygoalexamples_september2017.pdf

Wedge Tool www.regionalindicatorsmn.com/wedge/city/2/

4 APRIL 11, 2018 Planning for Resilient Cities presentations available www.allianceforsustainability.com/resilientcities

Energy Planning Guide: Selecting Strategy Priorities – a framework for understanding and prioritizing local energy strategies:		
Tool Category	Tool Description	Energy Strategy Examples
Encouragement	Public engagement and educational efforts to encourage private sector residents and businesses to take action consistent with the desired goals.	<ul style="list-style-type: none"> • Co-promotion of utility efficiency or renewable energy incentives • Creation and dissemination of energy efficiency educational materials • Engage community in energy goal setting exercise, such as Partners in Energy
Incentives	Financial or regulatory inducements to encourage private sector actions consistent with the desired goals.	<ul style="list-style-type: none"> • Enabling PACE financing • Regulatory incentives within zoning • Expedited permitting • Technical assistance for private sector developments to incorporate net-zero or solar-ready designs
Regulation	Zoning, ordinances, licensing, permitting standards that are designed to require actions consistent with the desired goals.	<ul style="list-style-type: none"> • Requiring energy efficiency or renewable energy within PUD ordinances • Energy benchmarking ordinance • Removing zoning barriers to renewable energy • Adopting an energy stretch code (SB 2030)
Public Demonstration, Leadership	Public investment in and demonstration projects using local energy resources	<ul style="list-style-type: none"> • Participation in GESP • Installing solar on public buildings • Adopting net-zero energy standards for public facilities • Sponsoring a community solar garden for community residents and businesses

Example Energy/ Climate/ Resilience Action Plans

- St. Louis Park www.stlouispark.org/our-city/climate-action-plan
- Golden Valley www.goldenvalleymn.gov/planning/comprehensiveplanupdate/pdf/Vulnerability-Assessment-Great-Plains-Institute-PC-050817.pdf
- Minneapolis www.minneapolismn.gov/sustainability/climate-action-goals/climate-action-plan

Commercial Energy Benchmarking Pilot Project with Hennepin County

www.hennepin.us/your-government/projects-initiatives/energy-benchmarking

- Leah Hiniker, Hennepin Co. Energy Management 612 543-1219 leah.hiniker@co.hennepin.mn.us

City of Minneapolis Commercial building benchmarking ordinance

- Commercial Building Benchmarking and Transparency www.ci.minneapolis.mn.us/environment/energy

Climate change – Challenges and Opportunities for the Built Environment

CLIMATE CONNECTIONS -- Continental breakfast discussion www.changinglandscapes.umn.edu/news

Thursday April 19, 2018 8:30 - 10:00am

McKnight Foundation Board Room 710 S 2nd St #400, Minneapolis, MN 55401

Buildings can contribute substantially to climate change through energy usage and CO2 emissions. The commercial and residential building sector in the U.S. accounts for 39% of national CO2 emissions per year -- more than any other single sector. Please join us at the April Climate Connections seminar as we hear from local leaders and discuss opportunities and challenges for the built environment related to climate change, including building design innovations and the expansion of policy strategies such as energy benchmarking and code updating.

Speakers: Ben Rabe, Senior Policy Associate at Fresh Energy. Leah Hiniker, Energy Manager, Hennepin County and Patrick Smith, Research Fellow, Center for Sustainable Building Research, University of Minnesota.

Partners in Energy - an Xcel Energy Community Partnership - a two-year community support program involving more than electric and/or gas services to your municipalities, residents and businesses. It's not a program, service or product that you need to buy. We team up with your community energy visionaries to develop custom action plans and provide implementation support services to help you meet your energy objectives - that will engage and inform your community. **Tami Gunderzik, Xcel Energy Partners in Energy Manager, 612-330-6686**
tamara.gunderzik@xcelenergy.com https://www.xcelenergy.com/working_with_us/municipalities/partners_in_energy

Local Energy Efficiency Self Scoring Tool

American Council for an Energy-Efficient Economy (ACEEE)

- This is the same tool that ACEEE uses to score cities for their annual *City Scorecard* and they will walk you through the process to see how it works and to use in your own communities. They'll also touch on ways that NGOs can and have used the scoring tool to nudge their cities into action.
- Creating your own city scorecard is a great way to analyze how your city is doing and how it could improve, but some of these questions and measurements can seem daunting. Join us next Tuesday to learn more about how to score your city and use that information to make the case for more energy efficient efforts!
- More info at :<http://aceee.org/blog/2015/12/score-your-community-s-efficiency>



Darrell Schaapveld Owner,
Four Seasons Energy Efficient Roofing
 Marine on St Croix, MN
 651-433-2443 darrell@fseer.com
www.fseer.com ,



DURO-LAST®

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Environmentally Friendly Commercial Roofing at its Finest

<http://fseer.com/products/duro-last/>

Duro-Last® boasts over 30 years of reliability and durability in the commercial roofing industry. Their proprietary roofing systems are expected to last as long as 35 – 40 years, decades longer than the majority of other roofing systems. The Duro-Last® formula has remained unchanged since 1978,

Duro-Last® Roofing System is a strong, reinforced thermoplastic single-ply membrane, PVC or CPA, perfect for commercial and industrial buildings with flat or low-sloped roofs. It can be the base roof for Solar photovoltaic (PV) panels or green roofs.

Capture All the Advantages of Environmentally Friendly Roofing

Offering long-lasting and recyclable materials, Four Seasons has been recognized for our environmentally excellent practices. Beyond using responsible methods and materials, our team is here to help with additional energy-saving measures. Learn more about how to gain energy savings through solar panels, incentives programs, utility benefits, and more. <http://fseer.com/products/energy-efficiency/>

Lower Your Utilities Cost - Roofs like Duro-Last® provide excellent energy benefits that reduce necessary use of utilities like air conditioning. The Duro-Last® Cool Zone roofing system® is a “cool roof” – one with high solar reflectance and high thermal emittance. These qualities minimize the heat that comes into your building from the roof and keep your building cooler. Our cool roofs exceed California’s Title 24 requirements with 88% solar reflectance and 87% thermal emittance. By beating this stringent standard, we prove again that Duro-Last® is the world’s best roof.

Maintenance and Material End-of-Life Four Seasons Energy Efficient Roofing recycles all possible materials – pallets, paper, Styrofoam insulation, plastic, stones from ballasted roofs, etc. from roofing projects?


- Installation of an energy efficient Duro-Last® Roofing System can reduce landfill waste because over 90% of the existing roof doesn't have to be torn off — the new roof can be overlaid?
- Energy-efficient roofs are more environmentally friendly, offer significant tax rebates and utility discounts and, in many cases, pay for themselves

ROOF TOP SOLAR


Sol Smart – guidelines for streamlining zoning and permitting for solar in your community

<https://www.cleanenergyresourceteams.org/solar/solsmart>

Third Party Solar Ownership <http://finance-commerce.com/2017/11/sustainable-third-party-solar-ownership-takes-off/>

	<p>All Energy Solar Ryan Buege, Director of Sales & Marketing, 612) 499-4188 ryan.buege@allenergysolar.com Solar is affordable</p> <ul style="list-style-type: none"> • Great incentives & rebates • Direct financing available • Accurate ROI forecasting
<ul style="list-style-type: none"> • Residential - PV solar and storage - www.allenergysolar.com/for-homes/ • Commercial and Government - for large industrial and government agencies to local businesses and farmers, All Energy Solar installs solar energy systems for all businesses. www.allenergysolar.com/for-businesses/ 	

	<p>Innovative Power Systems www.ips-solar.com Lynn Hinkle, 612 310-4742 lynnh@ips-solar.com ; Eric Pasi Chief Development Officer 651-789-5305 ericp@ips-solar.com</p> <ul style="list-style-type: none"> • Development - From start to finish, we'll walk you through every stage of your project.
<ul style="list-style-type: none"> • Financing - Rate of return, energy savings, we've got options to fit your objectives. • Installation - Our project, our crews. We've been building energy for over 25 years. • Operations - You will produce a lot of energy for a very long time, we'll see to that. 	

 <p>www.novelenergysolutions.com</p> <ul style="list-style-type: none"> - Residential - Commercial - Nonprofit - Community Solar Gardens 	<p>Keith Pieper Director of Sales 612 940-5633 keith.pieper@novelenergy.biz www.novelenergy.biz Rebecca Peichel 507-276-7795 rebecca.peichel@novelenergy.biz</p> <ul style="list-style-type: none"> - Roof Top Solar Projects - Energy Efficiency - Financing - Project Design - Project Management and Installation <p>Founded in 2012 by Cliff Kaehler, Ralph Kaehler, and Bill Holzer, Novel Energy Solutions works to make inexpensive clean energy available to farms, companies, non-profit organizations, and individuals alike.</p>
<p>We understand that changing government policies and rapid technological developments can make even a small clean energy project appear overwhelming. Our experienced team is here to help you make sense of available clean energy technologies, utility incentives, government programs, and financing options. We will assist you in devising and implementing a clean energy plan that will both reduce your carbon footprint and save you money.</p>	



Solar Possible:

New joint purchasing effort for agencies, local governments & schools

Peter Lindstrom MN CERTs, Local Government Liaison

(612) 625-9634 plindstr@umn.edu

a cooperative purchasing effort to facilitate more state agencies, local governments, and schools using solar on their facilities.

www.cleanenergyresourceteams.org/blog/solar-possible-new-joint-purchasing-effort-agencies-local-governments-schools

Collaborative procurement is an effective approach to reduce barriers, learn together, and drive projects to successful completion. This initial effort will be geared toward jurisdictions in Xcel Energy territory

Community Solar Gardens www.cleanenergyresourceteams.org/solargardens

Metro Council leading collaboration to spur community solar – with 31 local jurisdictions

Local governments in the Twin Cities metro subscribed to solar energy generated at several proposed community solar gardens procured through a collaboration of the Met Council, Hennepin & Ramsey co, the City of Mpls, CERTs & GPI

www.metrocouncil.org/News-Events/Communities/Newsletters/Metro-Council-leading-collaboration-to-spur-commun.aspx

Consumer Friendly Community Solar Pledge <http://fresh-energy.org/communitysolarpledge/>

Pollinator Pledge | Fresh Energy www.fresh-energy.org/tag/pollinator-pledge Urge solar developers to create habitats for bees and other pollinators in Minnesota when you take the Pollinator Pledge.



ReneSola Power

Aric Sorenson, Minneapolis, 612 280 1605

aric.sorenson@renesolapower.com

Competitive Commercial Community Solar Garden subscriptions are currently available

- ReneSola is a twelve-year old reputable NYSE-listed global solar company with over \$1 Billion annual revenue. We are working with local property owners, subscribers, development services, engineering, surveyors, legal counsels, sales, marketing, manufacturers, construction, landscapers, consultants, and other partners to benefit the communities of Minnesota.
- ReneSola currently has 70 MW under development for community solar projects throughout the US. Here in Minnesota, we have 13.3 MW of community solar scheduled for construction this year and an additional 40 MW of projects in our development pipeline. As of today, we have over 25,000,000 kWh of participating subscribers within our Minnesota Gardens including both public municipalities and private entities.

Reference participating subscribers



City of Jordan, MN – Participating Subscriber - Located in Scott County along the Minnesota River, the City of Jordan has a population of over 5,000 residents. A short drive from the Twin Cities, Jordan maintains a number of city parks, has well established police and fire departments, and a historic downtown district. The City of Jordan has committed subscription to our Dundas Solar Rice County 5 MW garden.



Met Council – Participating Subscriber - The Council's mission is to foster efficient and economic growth for a prosperous region. The Met Council is a participating subscriber to our Dundas Solar Rice County 5 MW gardens as well as other gardens.



Mankato Clinic – Participating Subscriber - one of Minnesota's largest physician owned, multispecialty regional group practices, with 135 providers located across ten sites in five communities, employing over 750 people, and rank among the top 15 employers in the region. The Mankato Clinic has committed subscription to our Le Sueur County 5 MW garden.



Energy Analysis and Upgrades for Nonprofits, Congregations and Schools – Enerchange Michael T’Kach, 952-562–8697 mtkach@enerchange.org
Energy Efficiency Manager, www.EnerChange.org

Business Engagement



Save Money & Energy with your Business

Business Programs & Rebates – partner with Xcel Energy to reduce your energy costs.
www.xcelenergy.com/programs_and_rebates/business_programs_and_rebates

Lighting Retrofits - One-Stop Efficiency Shop for small businesses (400 kilowatts/mo. or less)
www.mncee.org/services/commercial-programs/one-stop-efficiency-shop%C2%AE-lighting-retrofits

Minnesota Energy Smart | Energy Audit Rebates, Efficiency & Energy


www.mnenergysmart.com

Energy Smart helps Minnesota businesses become more energy efficient.

Federal Tax Credits for Businesses

Business Energy Investment Tax Credit (ITC) | Department of Energy - The federal Business Energy Investment Tax Credit (ITC) has been amended a number of times, most recently in February 2018. The table below shows the value of the investment tax credit for each technology by year. ... The credit is equal to 30% of expenditures, with no maximum credit. www.energy.gov/savings/business-energy-investment-tax-credit-itc

Business Energy Investment Tax Credit (ITC) – DSIRE Mar 1, 2018 - The federal Business Energy Investment Tax Credit (ITC) has been amended a number of times, most recently in February 2018. The table below shows the value of the investment tax credit for each technology by year. The expiration dates are based on when construction begins. www.programs.dsireusa.org/system/program/detail/658

	<p><u>Energy Financing Overview - Saint Paul Port Authority</u> https://www.sppa.com/energy-financing/overview Commercial PACE – Property Assessed Clean Energy The Saint Paul Authority manages two energy saving finance programs that help businesses state-wide – MinnPACE and Trillion BTU. Both programs help commercial business owners make investments that significantly lower their energy usage with a finance option that in most cases is more than covered by the amount of the loan payment. www.sppa.com/energy-financing/minnpace</p> <p>MinnPACE, is the largest provider of PACE financing in the State www.minnpace.com</p>
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MN ENERGY STAR Challenge! <http://mnenergystarchallenge.com>

Abby Finis Great Plains Institute w. 612-767-7295 C: 612-245-4070 afinis@gpisd.net

- A statewide program that offers incentives directly to building owner who seek certification. There is also the community partner piece where will work closely with one community to come up with a plan to reach out to businesses in their community to become ENERGY STAR certified.
- Article from Finance & Commerce explaining the Challenge: <http://finance-commerce.com/2015/08/new-effort-pushes-energy-star-rating-for-buildings>

Adaptation



Adaptation, Water, Infrastructure Resilience

- **Eric Wojchik**, Resilience Coordinator, Local Planning Assistance, Metropolitan Council 651 602-1330
Eric.Wojchik@metc.state.mn.us <https://metro council.org/Handbook/Plan-Elements/Resilience.aspx>
- **Metro Climate Vulnerability Assessment** Regional Risks and Opportunities - Localized flooding, Extreme Heat
www.metro council.org/Communities/Planning/Local-Planning-Assistance/CVA.aspx
- **Janna Kieffer**, P.E. Senior Water Resources Engineer, 952-832-2785 jkieffer@barr.com www.barr.com
- **Brett Emmons**, PE, ENV SP, LEED AP EOR: 651.203.6003 651.770.8448 Bemmons@eorinc.com www.eorinc.com

Climate Change | MN Environmental Quality Board www.eqb.state.mn.us/content/climate-change

- **Citations for Minnesota and Climate Change: Our Tomorrow Starts Today** (189 KB PDF)
- **Climate Change One Pagers** (6 MB PDF) Use these to print individual topics.

Adapting to Climate Change in MN -- 4-p summary, including 6 projected climate trends with confidence levels:
<https://www.pca.state.mn.us/air/adapting-changing-climate>

Adapting to a changing climate <https://www.pca.state.mn.us/air/adapting-changing-climate>

Climate adaptation is developing and implementing strategies, initiatives and measures to help human and natural systems cope with and become more resilient to climate change impacts.

Climate change mitigation emphasizes reducing greenhouse gas emissions with the goal of limiting the magnitude or progression of climate change. While it is important to continue to mitigate climate change by reducing emissions to avoid calamitous change, we also need to adapt to changes that are already occurring.

Climate change will affect ecosystems, infrastructure, and sectors of our economy. The impacts on these systems will depend on their sensitivity to climate change and their ability to adapt. The goal of adaptation is to increase natural and societal resilience to climate change.

For more information about climate adaptation, contact Paul Moss, MPCA Climate Adaptation Coordinator, at paul.moss@state.mn.us or 651-757-2586.

MN Annual Climate Adaptation Conference: www.wrc.umn.edu/news-events/climateadaptationconference

Flash Flood Vulnerability and Adaptation Assessment Pilot www.dot.state.mn.us/climate/pilotproject.html

Met Council Resilience Resources <https://metro council.org/Handbook/Resources.aspx>

Healthy Communities:

- Stormwater Management: City of Maplewood
- Stormwater Management: USEPA: Heat island effects
- Stormwater Management: GreenStep Cities Best Practices
- GreenStep City Best practice #24, Benchmarks and Community Engagement
- FEMA's fact sheet for Integrating Hazard Mitigation into the Comprehensive Plan
- GreenStep Cities best practices #25 Green Business Development, #27 Local Food, and #28 Business Synergies

Rice Creek - local Water Planning www.ricecreek.org/index.asp?SEC=D30898C7-CA8E-40E7-9AE4-CB4968296C43&Type=B_BASIC [Local Water Plan Checklist](#)

- [HEI Report: RCWD Future Conditions Modeling Report](#) Includes Figures Outlining Future Condition Model

TOOL KITS

- **Adapting to Climate Change in MN** www.pca.state.mn.us/index.php/view-document.html?gid=15414
- **U.S. Climate Resilience Toolkit** <http://toolkit.climate.gov/get-started/step-1-identify-problem>

Best Practice 29: Climate Adaptation and Community Resilience

<http://greenstep.pca.state.mn.us/bestPractices.cfm> **Laura Milberg** MPCA (651) 757-2568 laura.milberg@state.mn.us

Overview: Plan and prepare for extreme weather, adapt to changing climatic conditions, and foster stronger community connectedness and social and economic vitality.

Leadership & Strategy: Integrate climate resilience into planning and budgetary processes. | Hazard mitigation planning | Comprehensive planning and safe growth | Capital budget planning

Health & Wellbeing: Prepare to maintain public health and safety, while also taking a preventive approach. | Identify vulnerable populations | Designate community safe shelter | Provide outreach and incentives to reduce risk on private properties

Economy & Society: Help vulnerable residents improve their prosperity. Build social connectedness. | Training and job placement services | Affordable shared community spaces | Engagement and culturally-specific services/mentoring

Infrastructure & Environment: Protect facilities and infrastructure. Reduce urban heat island effect. | Protect buildings and infrastructure from flash flooding/extreme weather damage | Install green/cool roofs and pavements, trees and other vegetation | Improve local grid with distributed renewable power and microgrids

Sustainable Best Practices: Make long-term investments using sustainable best practice actions. | Energy savings, air quality, active living | Green and gray infrastructure, water conservation | Green building and complete streets

Climate Vulnerability & Adaptation Planning - Ted Redmond 612.669.7056 tredmond@paleblue-dot.org
www.bluedotregister.org/community-services/#Climate-Vulnerability-and-Adaptation

BLUEdot provides services to communities to help them identify and plan for climate vulnerabilities in their community. A Climate Vulnerability Assessment begins with an identification of the current and projected climate changes specific to the community. The assessment then identifies the climate vulnerabilities in a community's region as well as specific vulnerabilities within the community itself. Vulnerabilities reviewed include risks associated with natural systems, the built environment, as well as an identification of vulnerable populations. Vulnerabilities are then mapped within the community. A Climate Adaptation plan can then be developed to identify a range of policies and strategies to help the community improve their resilience.

COMMUNITY RESILIENCE PLANNING WORKSHOPS Building Resilience for a Changing Climate www.freshwater.org

Leslie Yetka (651-313-5813; lyetka@freshwater.org) or Jen Kader (651-313-5807; jkader@freshwater.org)

What is this? Current science indicates our precipitation and temperature patterns are changing in Minnesota, and will continue to do so in the future. These changes will have significant impacts on our natural resources, our built infrastructure, human health, and our societies. Community Resilience Planning Workshops are a way to engage communities and watersheds in planning for climate change and resilience, a valuable component of municipal comprehensive plans and local water management plans.

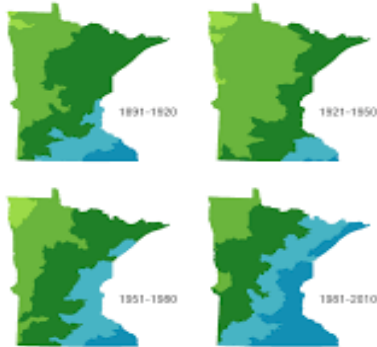
Matthew R. Metzger, ENV SP, PE Senior Civil Engineer 952.832.2830 mmetzger@barr.com

Nathan Campeau, PE (952) 832-2854 ncampeau@barr.com

Fred Rozumalski 952-832-2733 FRozumalski@barr.com

Precipitation change in Minnesota

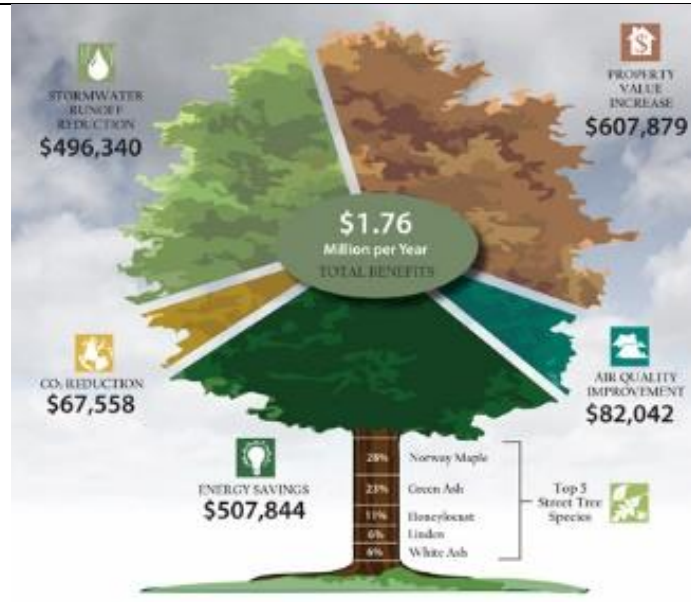
Average Annual Rainfall
 Less than 28 inches
 21-25 inches
 26-28 inches
 29-30 inches
 Greater than 30 inches



Source: Adapted from Gatto, S.C., A.C. Kasten, and M.E. Moran, 2014. Data from Minnesota Department of Natural Resources, state climatology office.

Technical resource partner with the Nine Mile and Riley Purgatory Bluff Creek MPCA Pilot Project supporting 5 west metro cities to start doing climate vulnerability assessment and mitigation planning with

- Bloomington
- Edina
- Hopkins
- Eden Prairie
- Chanhassen



Urban Canopy & Comp Plans -- Met Council expert guidance for embedding effective green infrastructure goals, policies & actions:

HOW TO ENHANCE URBAN CANOPY THROUGH ORDINANCE & COLLABORATION FOR COMPREHENSIVE PLANS

Michael Orange, Principal ORANGE Environmental, LLC

While it is easy to appreciate the beauty of trees and landscaping, the quantifiable environmental, economic, and health benefits are not as easy to grasp. When the values of trees are weighed against their purchase and maintenance, the benefits outweigh the costs by a margin of about three to one. Comprehensive plans should embed effective green infrastructure goals, policies, and implementation tools into practice in the following ways:

<https://metro council.org/Handbook/PlanIt/Files/Expert-Article-Urban-Forest.aspx>



Transportation

- **Phil Muessig**, MN Greenstep Cities Coordinator, 651-757-2594, Philipp.muessig@state.mn.us
Land Use & Transportation MN GreenStep best practices, <https://greenstep.pca.state.mn.us/bestPractices.cfm>

Making your City EV Ready www.betterenergy.org/blog/making-your-city-ev-ready

Brian Ross, GPI, 612- 501-1531 brross@gpisd.net

Cities have tremendous influence over how and where infrastructure is built and serve as a critical and necessary partner in the market transformation effort to make EVs a significant part of the nation’s passenger car fleet. Therefore, cities need to be “EV-ready” in policy, regulation, capital improvements, and in planning for public & private infrastructure. The Great Plains Institute (GPI) has identified 5 principles for what constitutes an EV-ready city:

1. **Policy:** Acknowledge EV benefits and support development of charging infrastructure
2. **Regulation:** Implement development standards and regulations that enable EV use
3. **Administration:** Create transparent and predictable EV permitting processes
4. **Programs:** Develop public programs to overcome market barriers
5. **Leadership:** Demonstrate EV viability in public fleets and facilities

Cities Charging Ahead - EV Learning Co-Hort Led by Great Plains Institute and CERTS

Diana McKeown Metro CERT Coordinator 612-227-8023 dmckeown@gpisd.net

Goals

- Include EVs in city purchasing plans
- Install electric charging infrastructure in public parking areas
- Provide guidance on EVready development in the private sector

Outcomes

- 3-6 cities doing fleet analysis to incorporate EVs into their fleet
- 8-15 cities exploring adding EVs into purchasing plans
- Installation of charging infrastructure at strategic community locations (Level 2 or DCFC)
- GPI/CERTs will be creating tools/resources/guides to help you achieve these outcomes

- Drive Electric Minnesota www.driveelectricmn.org
- PlugIn Connect www.pluginconnect.com
- Electric Vehicle Ride Sharing Service – Hour Car and Xcel Energy <http://www.startribune.com/hourcar-and-xcel-look-at-electric-vehicle-ride-sharing-service/478578143/>
- Time line for cities to be able apply for EV infrastructure funding - MPCA/ VW settlement (summer or Fall 2018) <https://www.pca.state.mn.us/air/volkswagen-settlement>

Preparing for Autonomous Vehicles

- Gov. Dayton’s new task force on autonomous vehicles <https://mn.gov/governor/newsroom/#/detail/appld/1/id/328500>
- LMC Position on pre-emption bill (Uber & Lyft) www.lmc.org/page/1/TNCregulationUpdate.jsp?ssl=true
- **Planning for Autonomous Electric Vehicles** implications for comprehensive plans <http://allianceforsustainability.com/wp-content/uploads/2016/09/SAVehicle-brochure-June-2017.docx>
Minnesota Design Center (MDC) Tom Fisher - The uses design thinking to addresses systemic issues in the Twin Cities region www.designcenter.umn.edu
- **Planning for self-driving vehicles** Frank Douma, U of MN Humphry School 612-626-9946 douma002@umn.edu
Helpful 4 minute video <https://civios.umn.edu/video/self-driving-vehicles/>
Specifically regarding self-driving vehicles, the time is ripe for planners and policymakers to consider the impacts of these technologies on not only the way we think about transportation, but the way we relate to the built environment and organize the way we live: can we eliminate distracted driving, traffic congestion, and expensive parking? Can we make mobility available to all people? Will we be able to maintain an independent lifestyle later into life? Will we feel the need to own our own car? Can we adapt our land use to allow these changes to happen?


Shared-Use Mobility Center www.sharedusemobilitycenter.org

Aaron Westling (312) 448-8083 aaron@sharedusemobilitycenter.org

- Twin Cities Leaders Release Shared Mobility Action Plan to Increase Transportation Options & Take 50,000 Cars off the Road in 10 Years <http://sharedusemobilitycenter.org/news/twin-cities-leaders-release-shared-mobility-action-plan-to-increase-transportation-options-take-50000-cars-off-the-road-in-10-years/>
- PDF - Twin Cities Shared Mobility Action Plan http://sharedusemobilitycenter.org/wp-content/uploads/2017/10/SUMC_TWINCITIES_Web_Final.pdf
- Twin Cities Shared mobility action plan and possible pilot projects for increasing accessible transportation (Uber and Lyft) www.startribune.com/a-public-uber-service-in-southwest-metro-officials-say-it-works/410688675

MINNESOTA GO 50-YEAR VISION AND PLAN FOR TRANSPORTATION

- Philip Schaffner, Policy Planning, MN DOT 651-366-3743 Philip.Schaffner@state.mn.us www.mndot.gov/climate
- MN DOT www.minnesotago.org/final-plans/smtf-final-plan

	<p>League of MN Cities - 2018 Legislative Policies</p> <p>The LMC 2018 City Policies publication was created with member input and approved by the LMC Board on Nov. 9, 2017. www.lmc.org/page/1/legislative-policies.jsp</p> <p>SD-63. State Support for Municipal Energy Policy Goals</p> <p>The LMC calls on our legislators and state executive agencies charged with accomplishing the state’s energy policy goals to assist cities, townships and counties with tailored efforts to identify appropriate energy efficiency and renewable energy projects for undertaking at the local level.</p>
<p>Relevant Dockets at the Public Utilities Commission (PUC): Leigh Currie, (651) 287-4873 lcurrie@mncenter.org</p> <p>Integrated Resource Plans 17-286 Great River Energy Upcoming IRPs: Xcel Energy’s IRP due Feb1, 2019</p> <p>2017 - 2019 Conservation Improvement Program (CIP) Triennial Plan 16-115 Xcel Energy CIP Triennial Plan</p>	

Saint Paul For All 2040 Comprehensive Plan

Focus: Resiliency



RESILIENCY focuses on sustainability strategies aimed at protecting Saint Paul families from the effects of climate change. This includes creating green building standards, developing robust transit, designing multimodal streets, and reducing our carbon footprint through energy and resource efficiencies.

Draft Policy	Chapter	Policy #
Ensure that zoning and infrastructure support environmentally and economically efficient, resilient land use development.	Land Use	LU-8
Reduce vehicle miles traveled (VMT) by improving transportation options beyond single-occupant vehicles.	Transportation	T-20
Seek opportunities to improve the environmental sustainability of rights-of-way in the city, such as through shared, stacked-function green infrastructure and planting trees to reduce the urban heat island effect.	Transportation	T-36
Encourage the use of energy efficient mechanical systems and building products in rehabilitation and new construction to decrease building operation costs and impacts on the environment.	Housing	H-10
Encourage the use of low-impact landscaping, such as no-mow yards, native landscaping, and rain gardens, to reduce the consumption of natural resources in yard maintenance.	Housing	H-14
Improve the environmental sustainability and resiliency of parks through strategies such as shared, stacked-function green infrastructure; best management practices in stormwater management; increased tree canopy; increased plant diversity and pollinator-friendly plantings.	Parks and Recreation	PR-17
Continue education and conservation measures identified in the 2016 Water Supply Plan to increase efficiency and reduce water demand.	Water Resources Management	WR-10
Maintain response readiness for emergencies related to water supply contamination or interruption and for damage to treatment and distribution infrastructure.	Water Resources Management	WR-13
Utilize rain as a resource to achieve multiple benefits when managing stormwater, such as harvesting water for irrigation or flushing toilets.	Water Resources Management	WR-1
Support healthy urban forestry initiatives to capture stormwater through canopy interception, evapotranspiration and increased infiltration.	Water Resources Management	WR-6
Explore and support the implementation of green infrastructure practices to increase resiliency to flooding, drought and climate change.	Water Resources Management	WR-7

