

# *Energy Investment Partnership:*

## *Access to Capital & Leveraging Existing Financing Tools*

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# Why Better Buildings Northwest Ohio?



- Initially envisioned as a job creation program for the community in 2009 – Very high unemployment in our region;
- Opportunity to provide **Quality** deal flow for our Bond Fund;
- Energy costs were very much a focus at that time and Ohio had an aggressive energy efficiency mandate that penalized businesses for not implementing energy efficiency upgrades;
- Another tool to compliment our existing ED loan programs and initiatives.

# How Did We Get Here?

- Launched the Better Buildings Northwest Ohio (BBNWO) program in May 2010 with many resources:
  - \$15 million grant from the Department of Energy;
  - Existing A- rated Northwest Ohio Bond Fund with 25 years of experience in structuring and risk based lending through IDB's and LRB's;
  - Existing organization with 35 employees running airports, seaport, train station, parking garages, office buildings, loan programs, Brownfield development, etc.;

# How Did We Get Here?

- Resources (Con't):
  - Experienced team of consultants that have worked with us for decades on structuring and financing;
  - Recently enacted legislation in the Ohio Revised Code allowing for use of special assessments to repay energy efficiency projects;
  - Partnership with City of Toledo to manage EE improvements on 50+ facilities;
  - Port Authority owned/operated facilities that needed energy improvements;

# How Did We Get Here?



- \$15 Million DOE Grant
  - \$7.5 Million – Loan Loss Reserve (Bond Fund Reserve);
  - \$3.0 Million – Revolving Loan Fund (Used to “Warehouse” projects);
  - \$4.5 million – Administration;
    - Energy Assessor training, Energy Assessments, loan documents, setting up Energy Special Improvement Districts (ESID’s), developing Energy Assessment and Measurement and Verification (M&V) protocols; Accounting system development; project management and tracking.

# How Did We Get Here?

- Hired Executive Director– Previous lending experience & 1 Assistant (contract employees) – Utilized existing staff for all other support;
- Launched the program on City of Toledo facilities and our own facilities;

# How Did We Get Here?

## ● Funding Sources

- BBNWO/PACE – Northwest Ohio Advanced Energy Improvement District
  - Northwest Ohio Bond Fund
  - DOE Better Buildings Loan Loss Reserves & Revolving Loan Funds
- Ohio Development Services Agency (ODSA) Energy Loan Fund;
- ODSA Loan Loss Reserve – DOE Funds
  - TLCPA Master Escrow Agent

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# How Did We Get Here?

- Funding Sources (Con't):
  - 1603 Solar grants in lieu of ITC (US Treasury)
  - Qualified Energy Conservation Bonds (QECCBs) (US Treasury) – “Tax Credit Bonds”
  - Utility rebates and incentives
    - Lighting rebates
    - DSE2/DSE1/Rider Relief/Rebates



# How Did We Get Here?

- Additional Funding Sources:
    - Local community economic development loans;
    - Ohio Regional 166 Loan Program;
    - SBA 504 Loan Program;
    - Historic tax credits, NMTC, EB5
- “Complex capital stacks”*

# Where Are We Today?

- BBNWO is one of the most successful PACE/Energy programs in the country;
- Program Results:
  - 110+ Building upgrades completed;
  - More than 7 million square feet;
  - 14,400,000 kWh saved
  - 240,000 CCF decreased gas usage
  - 24% average energy savings annually



# Where Are We Today?

- \$28,000,000 of financing issued (long-term fixed rate A- rated bonds);
- \$7,000,000 pending, solid pipeline of new deals;
- Currently working across Ohio to leverage our program expertise and financing capabilities;

# Who are your Partners??????



- Cities, Townships, Counties;
  - Offices, Police/Fire Stations, Maintenance Facilities, bridge and street lighting,
- Architects and Engineers;
  - Rehab/repurpose of existing buildings
- Mechanical & Electrical Contractors;
  - Great source of projects – Competitive advantage for those that bring this partnership to the table.

# Who are your Partners??????



- Universities – Large users of energy;
- Economic Development Professionals;
- Local Utilities – Gas & Electric;
  - Typically have rebate and other incentive programs;
- Energy Assessment Firms;

# PROJECT PORTFOLIO

# Project Overview – Toledo-Lucas County Port Authority Energy Efficiency Projects Portfolio



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- Projects funded = \$3,894,000
- Improved 1,400,000 sq. ft. of buildings
- Completed 9 projects; facilitated tenant energy savings projects
- Energy Conservation Measures (ECMs) included:
  - Remote building energy management & data tracking systems
  - Lighting
  - HVAC and mechanicals
  - Building envelope
- Overall 26% reduction in electricity demand = 2.5 megawatts and \$200,000 in cost savings annually
- Buildings located in PACE energy improvement district
- Additional facilities under review

## **PORT PROJECTS & SAVINGS:**

- **ONE MARITIME PLAZA – 45%**
- **TOLEDO EXPRESS AIRPORT – 30%**
- **DR. MARTIN LUTHER KING, JR. PLAZA (MLK) – 15-20%**
- **TOLEDO PARKING AUTHORITY (3 PARKING GARAGES) – 43%**
- **(3) TENANT FACILITIES – 20-30%**
- **TOTAL ENERGY SAVED:**
  - 2,938,000 kWh
  - 47,000 CCF

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# Toledo-Lucas County Port Authority – One Maritime Plaza



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PROGRAM

- **Waterfront office building:**
  - 60,000 sq.ft. - built in 1982
- **Problem:** Key downtown building at risk, air & water leakage, comfort complaints, high energy use:
  - 1,430,000 kWh & 21,000 CCF annually
- **Solution:** Top to bottom retrofit & equipment retro-commissioning: cooling tower, envelope repairs, total lighting replacement, overhaul HVAC & controls.
- **Project Costs:** \$1,055,000; Term 15 yrs
- **Funding:** NWOBF, QECCB, Utility Rider Relief, PACE
- **Results:** 30%-45% electricity reduction, tenants retained; 95% occupancy, building comfort improved.



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# Toledo-Lucas County Port Authority – Dr. Martin Luther King, Jr. Plaza



- **Historic train station and office building:**
  - 107,400 sq.ft. - built in 1950
- **Problem:** Aging mechanical systems and deferred maintenance, difficulty controlling temperature, and high energy use:
  - 1,053,000 kWh & 39,000 CCF annually
- **Solution:** Install automated building control systems, sensor activated lighting, high efficiency boiler, chiller, and transformer.
- **Project Costs:** \$436,000; Term 15 yrs
- **Funding:** NWOBF, PACE only



- **Results:** 20% electricity and 16% natural gas savings; switched from secondary power to cheaper primary power rates; comfortable building temperature

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# Toledo Express Airport

- **TLCPA operated airport:**
  - 128,000 sq.ft. - built in 1982
  - High mercantile electricity user 4,500,000 kWh/year; uses 4,200 CCF natural gas/year
- **Problem:** Aging mechanical HVAC and lighting systems with lack of building controls.
- **Solution:** Install automated building operating systems, energy efficient rooftop HVAC, LED runway and parking lot lighting.
- **Project Costs:** \$1,383,000 – 15 yrs.
- **Results:** 30% energy savings. \$230,000/year. Building comfort increased while scheduling building energy use based upon occupancy.



# Toledo Jet Center

## *Energy Efficiency In Small Business*

**TOLEDO** *JET* →  
**CENTER**



**GEM** INC



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PROGRAM

- \$105,000 Retrofit - 39,000 Sq. Ft.
- Energy Assessment – Energy Conservation Measures (ECM's) Identified
- Objectives: Reduce Energy Cost And Carbon Footprint
- HVAC / Lighting / Air Compressors
- 24% Energy Reduction – 3.7 Year Payback, 3%+ Maintenance Savings
- Savings Based on 1 shift operation; Savings for 2<sup>nd</sup> shift operation = 40%!
- Business Growth: 19 Jobs Expanding To 35 In 3 Years

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# Toledo-Lucas County Port Authority – Toledo Parking Authority Garages



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PROGRAM



- **TLCPA owned and operated parking garages**
- **Problem:** Ineffective lighting and high energy use:
  - 1,192,000 kWh annually
- **Solution:** Replace lighting and sensor controls.
- **Project Costs:** \$725,000; Term 15 yrs
- **Funding:** NWOBF, QECCB, Lighting Rebates
- **Results:** 43% electricity savings, facilities are better lit and controlled with improved security

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# City of Toledo – Project Summary



- **Partnered with TLCPA to form energy special improvement district for commercial, not-for-profit and local government buildings**
- **Problem:** Significant deferred maintenance, aging building mechanical systems and comfort issues. High energy user:
  - Office and maintenance buildings = 11,500,000 kWh annually
  - Water plants = 55,000,000 kWh annually
- **Solution:** Complete comprehensive building energy audits and implement multiple energy efficiency measures over several years. Energy manager hired to monitor projects and capture and measure energy data
- **Project Costs:** \$5,457,000; Term 15 yrs
- **Funding:** NWOBF, PACE, Lighting Rebates
- **Results:** Implemented multiple energy improvements for lighting and HVAC to 47 buildings; over 2,000,000 sq. ft. of buildings with 2,685,000 kWh (20%) and 730,000 CCF (11%) saved annually in office buildings.

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# City of Toledo – Diverse Building Portfolio



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- 19 fire stations, maintenance and training facilities
- 3 police and safety buildings
- 6 community & senior centers
- Health department and municipal court – large prominent downtown buildings
- Environmental services building
- 2 water treatment facilities – large high energy use industrial campus locations
- 6 transportation, streets, water & sewer maintenance facilities, and 5 misc
- Additional projects in planning

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# 405 Madison – Downtown Toledo Bank Building

- **Large Scale Signature Office Building –**  
Limestone art deco; former OI headquarters
  - 327,045 sq. ft. – built in 1932; 27 stories
- **Problem:** Failing 1960's chiller, high energy consumption and high run rate off hours:
  - 3,849,922 kWh; 151,000 CCF annually
- **Solution:** Installation of new 5-module, dual compressor chiller; additional projects in planning
- **Project Cost:** \$448,000; Term 15 yrs
- **Funding:** NWOBF, PACE
- **Results:** Conservative 412,040 kWh annual reduction; sets the stage for phase 2 lighting and building controls upgrade



# Auto Dealerships – Charlie’s Dodge Chrysler Jeep Ram & Grogan’s Town Chrysler Jeep Dodge Ram



- Combined project of both dealerships = \$462,000
- Interior/exterior lighting upgraded to high performance LED
- Payback < 4 years
- 60% reduction in electrical consumption
- \$150,000/year savings in electrical costs and maintenance

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# Sylvania Tam-O-Shanter Sports Complex

- 87,982 sq. ft. multi-purpose sports facility.
- Upgrades to lighting and controls, HVAC/Automation and VFD's for ice system control.
- Electrical savings - 461,230 kWh/yr.
- 21% energy savings.
- \$46,121 year total costs savings.
- Project Cost - \$313,000
- Simple Payback - 6 years



# Other Projects



PROJECT	FUNDING
(15) Convenience stores & gas stations	PACE, NWOBF
Little Learners Discovery Center	RLF
Valentine Theatre & Ohio Theatre	PACE, NWOBF
Tam-O-Shanter Sports & Recreation Complex	NWOBF
(3) Automotive Dealerships	PACE, RLF, NWOBF
(2) Industrial Facilities	PACE, RLF
(7) Office Buildings	NWOBF, PACE, RLF
(3) Multi-Family Unit Apartment Buildings	PACE, RLF

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# City of Oregon

- **Municipal Complex Geothermal System**
- **Problem:** Replaces aging, end-of-life mechanical heating, cooling and ventilation systems with clean energy geothermal system
- **Solution:** Geothermal Installation of an 80-ton distributed ground source heat pump system with active induction air; deep bore close loop
- **Project Costs:** \$1,747,416 – 15 years
- **Funding:** NWOBF, ODSA Loan-50%, QECB
- First geothermal system in PACE District

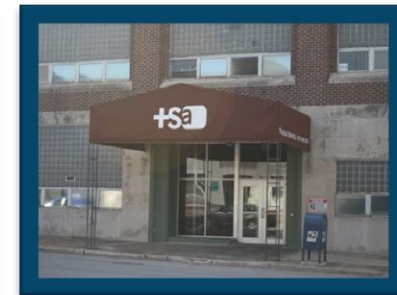
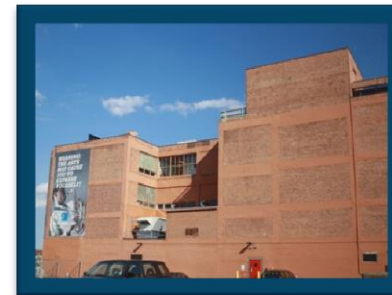


# Toledo School for the Arts



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- **Nationally Recognized Private Charter School:**
  - 114,000 sq ft; built in 1930's
- **Problem:** 60+ year old boilers putting school operations at risk, comfort issues, high energy use:
  - 705,000 kWh / 35,000 CCF
- **Solution:** Replace mechanicals, new boilers, air handlers, chiller, cooling tower, building automation system
- **Project Cost:** \$1,192,680; Term 15 yrs
- **Funding:** NWOBF, ODSA Loan-50%, QECB, PACE
- **Results:** 20% energy savings, project supported additional renovations to add art studios and technology upgrades, building comfort improved



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# The Toledo Club

- **Historic Private Social Club and Notable Downtown Architectural Beauty:**
  - 92,073 sq ft; built in 1889
- **Problem:** Aging mechanicals putting club growth at risk, comfort issues, high energy use:
  - 1,863,000 kWh / 166,000 CCF annually
- **Solution:** Top to bottom retrofit to support future service expansion & growth including air handlers, HVAC, chillers, lighting, and building automation
- **Project Cost:** \$739,000; Term 15 yrs
- **Funding:** NWOBF, ODSA Loan-50%, PACE
- **Results:** Targeted 15% energy reduction, significant O&M savings and improved building comfort



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# Job One USA

- **Downtown Toledo Office Building:**
  - 35, 040 square feet – Built in 1960
- **Problem:** Aging mechanicals, high utility costs, lack of controls
- **Solution:** Design/build and installation of chiller, controls, lighting, BAS system, HVAC
- **Project Costs:** \$471,571 – 15 years
- **Funding:** NWOBF, ODSA Loan-50%, PACE
- **Results:** Over 20% in energy reduction; tenants retained, building comfortable



# Kettering Tower – Dayton

- **Large Scale Signature Office Building** – 1970 building at 2<sup>nd</sup> & Main. Largest & tallest office building in the heart of Downtown Dayton
  - 486,000 sq. ft. – 30 story
- **Problem:** End of life mechanical systems, high energy usage and building comfort issues
  - 73,600,000 kBtu consumed annually
- **Solution:** Deep retrofit of building mechanical and electrical systems
  - Install High Efficiency Boilers & Chiller
  - New Building Automation System & Lighting
  - VFD for Air Handling Units
- **Project Cost:** \$2,500,000 - 15 years
- **Funding:** NWOBF, ODSA LLR, PACE
- **Targeted Results:**
  - Reduce annual energy cost by 30%+

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# Briarwood Management - Beachwood

- **Commercial Office Building:**
  - 42,598 sq. ft. – Built in 1971
- **Problem:** Aging mechanicals, high energy use, building comfort issues
- **Solution:** Building retrofit including air handlers, controls, lighting, building envelope and boiler system
- **Project Cost:** \$1,080,000 – 15 years
- **Funding:** NWOBF, ODSA LLR-\$500,000
- **Results:** Decreased energy consumption, improved mechanicals, controls and building comfort





# SOLAR PROJECTS

# Collins Park Solar Project

## *City of Toledo Solar Project: Collins Park Water Treatment Facility*



- Required public/private investment.
- 1MW – 1,300,000 kilowatt hours yr.
- NW Ohio suppliers: IPS, ADG, AP Alternatives, Nextronex, First Solar.
- Also implementing energy efficiency.
- Plant uses 22,000,000 kwh per yr.
- Required environmental evaluation.

**Project Cost: \$1,177,292 – 15 years**  
**Funding: 1603 Solar Grants, NWOBF**

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# General Motors Powertrain Toledo – Solar Project



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- 1.8 MW Rooftop Solar
- Likely to expand to 2.4MW
- First Solar Panels
- GM and Solscient also completed 2.2MW at GM – Lordstown – Chevy Cruze Assembly Plant
- GM Global Sustainability Commitment – 125MW by 2025
- Required evaluation of rooftop structural integrity.
- Project Cost: \$4+ Million
- Funding: 1603 Solar Grants, NWOBF



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ENERGY

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# THANK YOU!

**Paul L. Toth, Jr.**  
**President & CEO**

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