



Frameworks for Maximizing Educational and Financial ROI

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Introductions



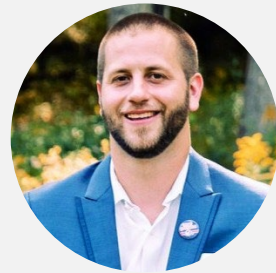
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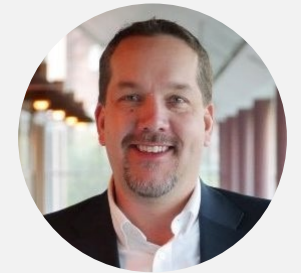
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Let's Connect!

Audience Question

- What are the big goals for your district?
- What barriers are you facing to achieve them?



Learning Objectives

- Partnerships to drive student success.
- Alignment with stakeholders
- Maximize the educational return on investment
- Workforce development and career readiness for your students
- Incentives to improve financial return on investment.

Business Focus



CUSTOMER OUTCOMES

Reduce our customers' carbon emissions by a cumulative 1 gigaton (1 billion metric tons) of CO₂e

Design systems for circularity

Increase access to cooling and fresh food

OPERATIONS AND SUPPLY CHAIN

Carbon-neutral operations

Zero waste to landfill

Net positive water use

10% absolute reduction in energy consumption

PEOPLE

Enhanced workforce diversity reflective of our communities

Gender parity in leadership roles

World-class safety metrics

World-class engagement metrics

Wellbeing offerings for full global population

COMMUNITY

Broaden community access to well-being services, including food/nutrition, housing and shelter, and climate comfort

Invest in STEM workforce development and retraining programs

Establish network of partners to foster STEM and early education experiences

Launch seed grants for critical mobility needs



Challenge of Change



We are in a time of change...

[FROM]

[TO]

AMBITION ERA

ACTION ERA



GOALS



RESULTS

2018

2019

2020

2021

2022

2023

2024

2025

2026

2027

2028

Change comes with complexity



Executive Leadership
Investor Relations

SUSTAINABILITY
TEAMS

- ✓ Facilities
- ✓ MarComm
- ✓ Operations
- ✓ EH&S
- ✓ Procurement
- ✓ Finance & Accounting

2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028

The Mindset Has Changed

Traditional Thinking

- First Cost driven
- Capital Cost
- Service Contract
- Replace on Fail
- Energy **PROJECT**
- **Green washing**



Sustainable Thinking

- Stakeholder Engagement
 - Activate Community Partners
 - Future social impacts
- Optimizing capital for comprehensive effects
- Establishing Sustainable Green Teams
- Operations
 - Managing Scope, I & II Emissions
 - Lifecycle Net benefit/cost
- Workforce Outcome Driver
 - Human Capital Development
 - Diversity & Inclusion
 - Health, Safety and Wellbeing

Alignment to Create Action



What is ESG: ESG = Sustainability



“All Companies will be profoundly affected by Carbon Emissions”

Paraphrased

Larry Fink – CEO
Blackrock in his 2021 Letter to CEOs



ESG Drives Stakeholder Value

Current Tailwinds Driving Change

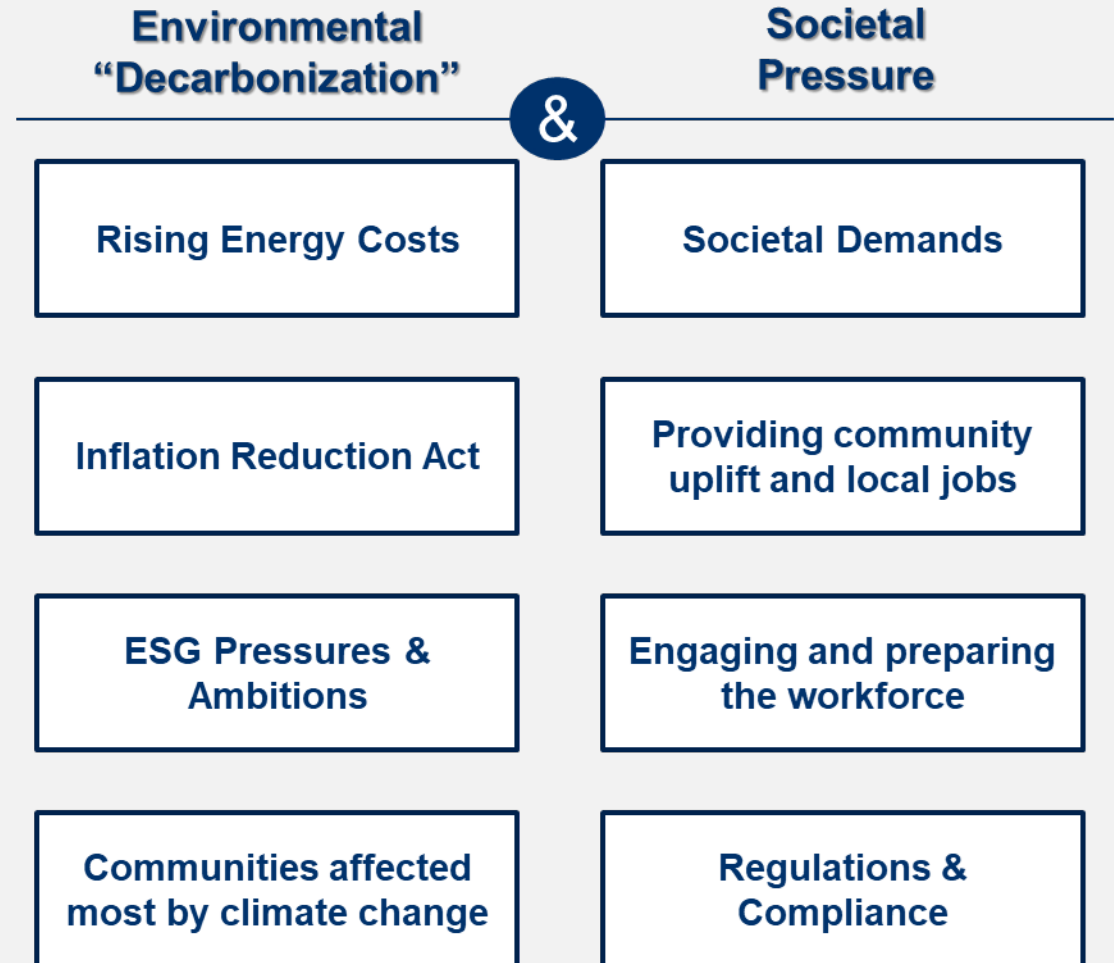
Meeting Clients On The Journey



1. “Getting Pressure”

1. “Targets but no plan to get there.”

1. “Need help with achieving our goals.”



Who is vested in unlocking ESG & Sustainability Goals?



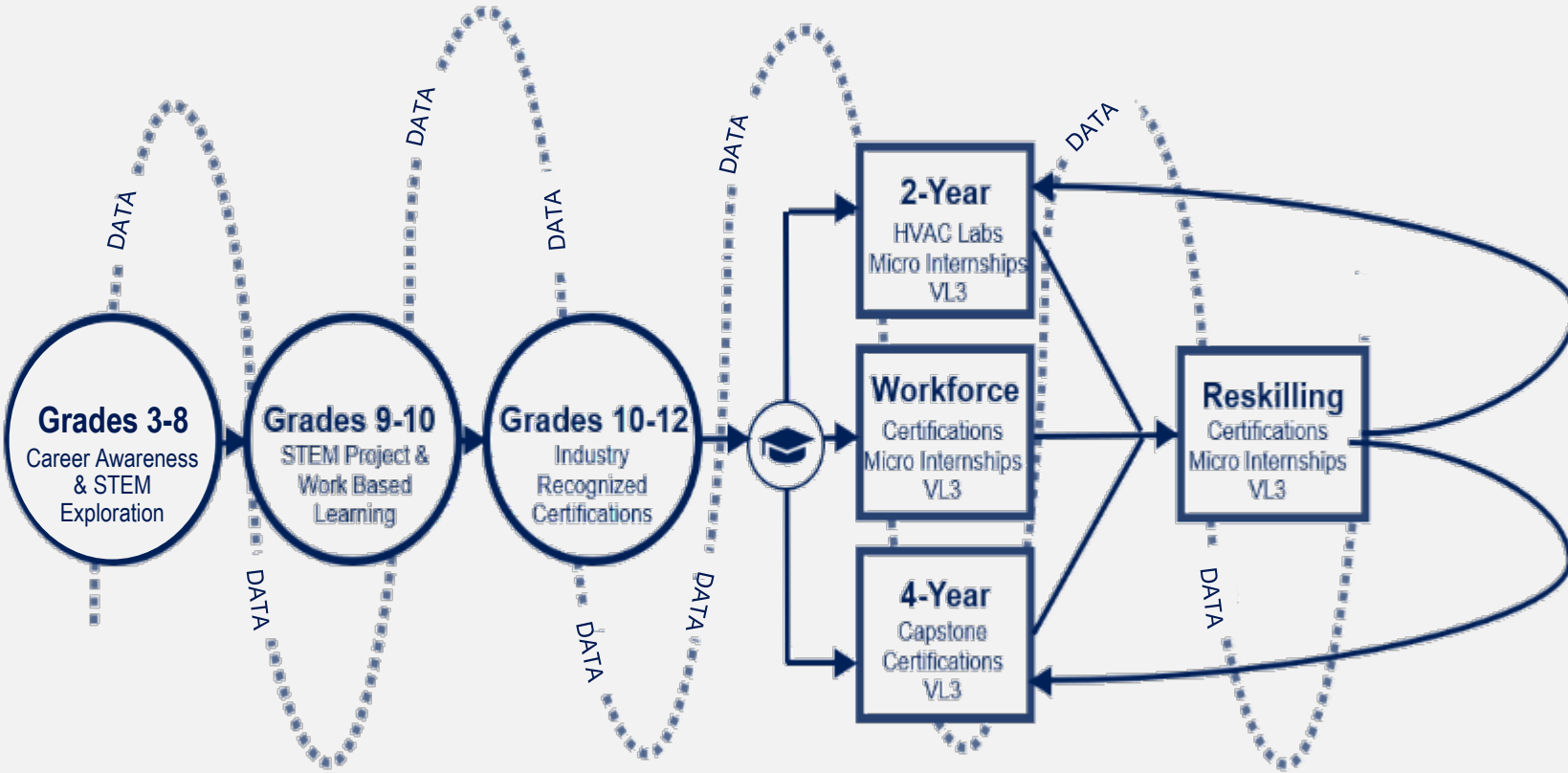
**PRESSURE TO DRIVE
ESG & SUSTAINABILITY
RESULTS**

Driving Social Outcomes



Blending Environmental & Social Pillars

Provide a Gateway to Opportunity



Data Analytics | Real-World Applications | Lifelong Learning



Blending Environmental & Social Pillars

Engagement – Gateway to Opportunity



BTU CREW

- Problem Based Learning / Work Based Learning
- Interactive programming w/STEM & Career awareness
- Designed to complement current curriculum that is stackable
- Integrates with facility, climate & energy data into lessons



Blending Environmental & Social Pillars

Engagement – Gateway to Opportunity



Blending Environmental & Social Pillars

Real World Learning



Virtual Living Learning Lab – VL3

- Buildings become a living learning lab.
- Enhance student academic programs & staff development
- Forms strategic partnerships and increase civic engagement.
- Expand learning environments while providing practical solutions to complex, real-world problems.



Blending Environmental & Social Pillars

Engagement – Gateway to Opportunity



Decarbonization – Developing a Path Towards a Sustainable Future

- **Understand** what carbon is and how it affects the temperature of the planet
- **Explore** how existing fuel sources that involve burning of fossil fuels differ from renewable energy sources
- **Build** awareness of how energy conservation is our greatest opportunity to help reduce climate change
- **Learn** how new technologies can be implemented to help reduce energy consumption and limit climate change
- **Explore** the role that companies play in decarbonization
- **Develop** a foundation for continued learning around data, analytics, and sustainability a Path Towards a Sustainable Future



Blending Environmental & Social Pillars

Engagement – Gateway to Opportunity



Data Analytics – The Power of Data at Your Fingertips

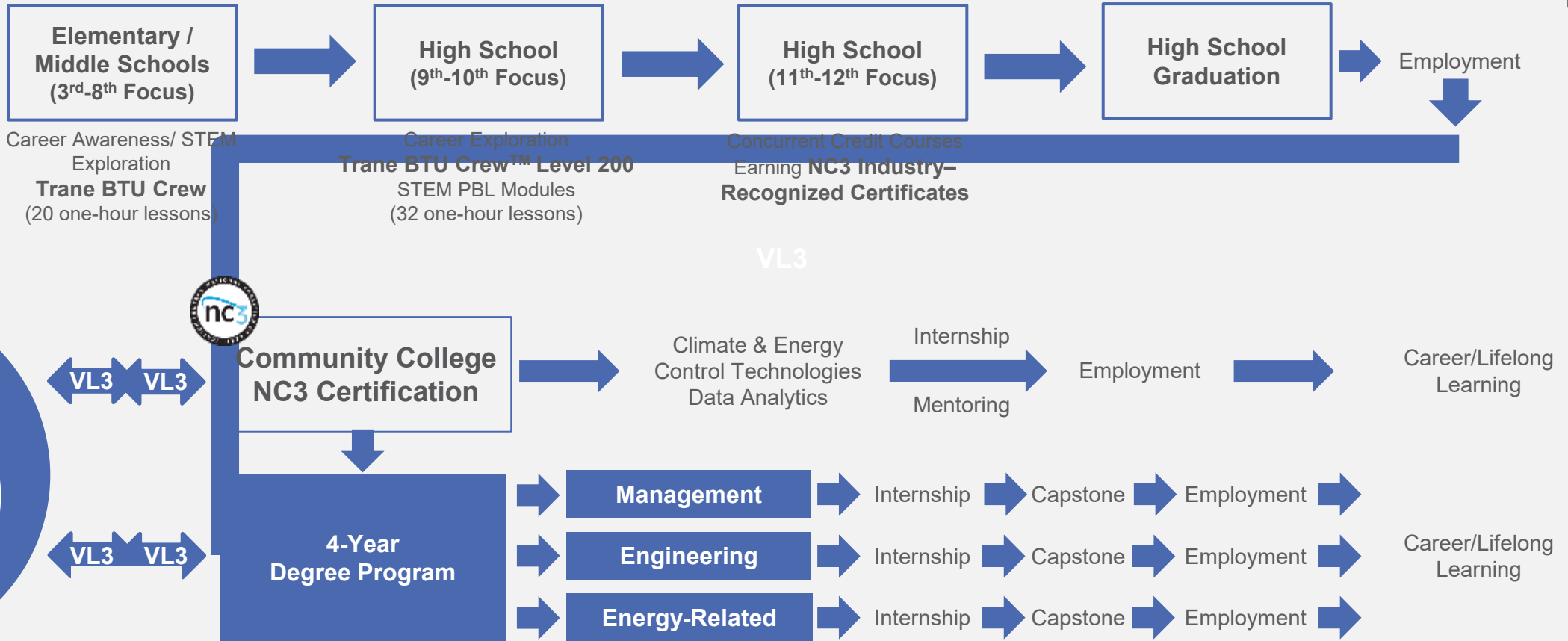
- **Harnessing the Power of Data**
 - Students utilize any public dataset of their choosing
 - Broad Based Awareness
 - Create Dashboard; Tableau
- **Energy Efficiency and Sustainability in Buildings**
 - Students utilize public datasets on energy or climate
 - Energy/Climate/Sustainability
 - Analytics Dashboard; Tableau
- **Data Analytics in Buildings to Reduce Energy**
 - Students analyze energy data from their own building
 - Energy & Renewables - Trane Energy Optics
- **Advanced Data Analytics Utilizing Live Data**
 - Students access live data in their own building
 - Trane Ensemble



Blending Environmental & Social Outcomes



Education Engagement Pathway Journey



**Real.
Relevant.
Impactful.**



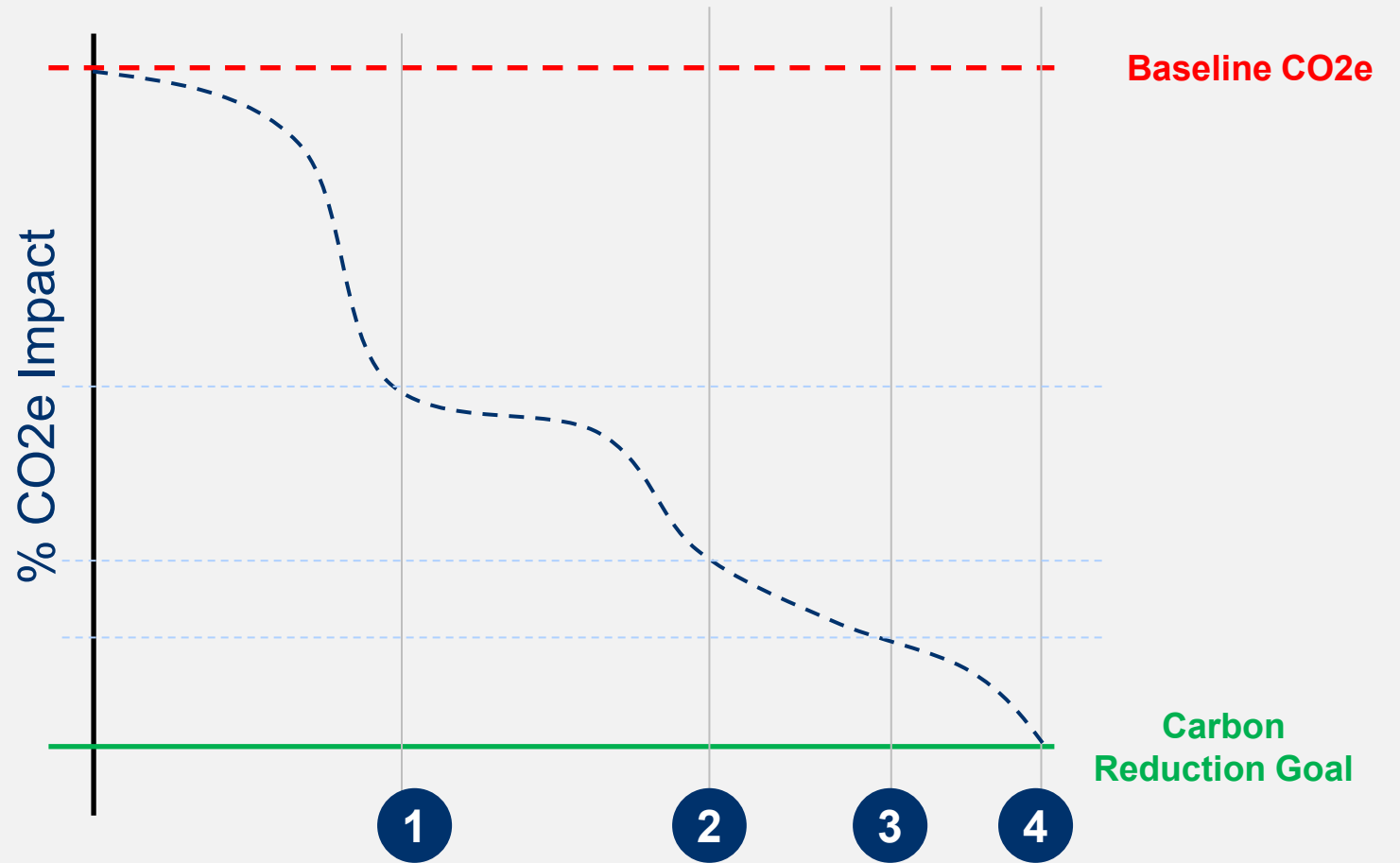
Comprehensive Energy Services



Understand the Levers to Decarbonizing Facilities

Proper Sequencing Maximizes Long-Term Impact and Minimizes Overall Investment

- 1 Reduce Energy Consumption (Scope 1 and 2)**
Facility & Equipment Improvements | Efficiency Optimizations
- 2 Minimize On-Site Emissions (Scope 1)**
Electrify Equipment | Mitigate Fugitive Refrigerant Emissions
- 3 Generate Clean Energy On-Site (Scope 1 and 2)**
Implement Renewables
- 4 Address Difficult-to-Abate Emissions (Scope 1, 2, &3)**
Offsets | VPPAs

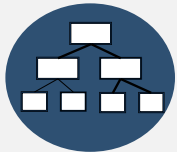


Trane Energy Services & Sustainability Process

Experts in Solution Engineering



Leveraging Competencies



Organizational Alignment
Facilitate stakeholders in process.



Facility Engineering
Identify needs & solutions for decarbonization.



Financial Analysis
Creating investment worthy approach throughout District.



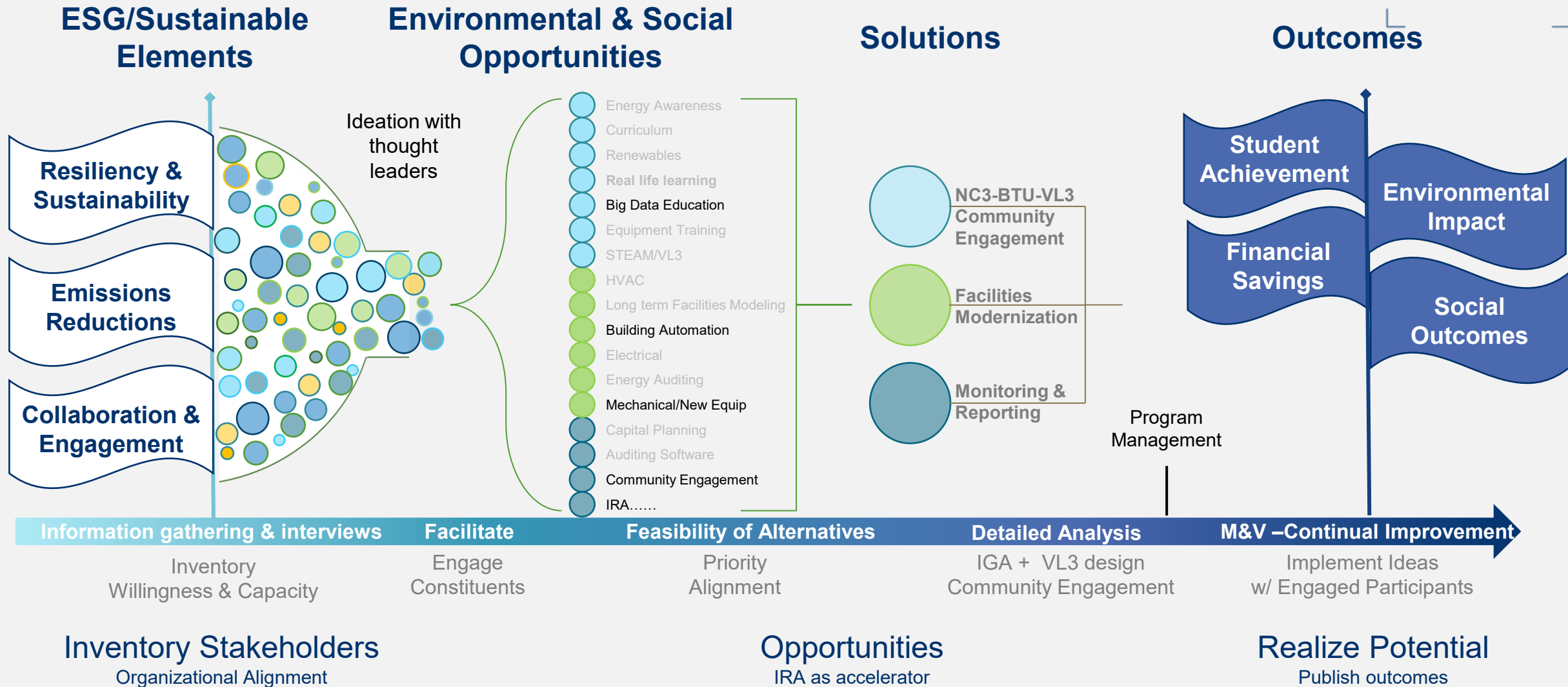
Incorporating Social Priorities
Blend educational programming (i.e STEM for disadvantaged communities use of VL3)

Process
Competency Initiation



- 1 Analysis
Off-site interview orientation
- 2 On-Site Technical Evaluation
- 3 On-Site Detailed Evaluation
- 4 Technical Development
- 5 Evidence Based
Measurement & Verification

Outcome Driven Approach



Strategic Energy Services

All Can be Leveraged for Student Engagement



Cooling Systems

- Chiller Replacements
- Cooling Towers
- Tower-Free Cooling
- Thermal Energy Storage
- Reclaim A.C. Heat Rejection
- Commercial Refrigeration
- Pumping Modifications
- Data Center Cooling
- Distributed Cooling
- Chiller-tower Optimization
- Pressure-independent control valves

Lighting Systems

- Interior LED Retrofits
- Exterior LED Retrofits
- Occupancy Sensors
- Lighting Controls
- Daylight Harvesting
- Street Light Retrofits
- Exit Signs
- High Bay Retrofits

HVAC Systems

- Ambient or geothermal source decarbonized heat
- Decarbonization planning
- Electrification of heat
- Net-Zero systems and planning
- Chiller, chiller-heater and heat pump systems
- Geothermal
- Lab exhaust systems
- Airside equipment
- Sensible only terminal system / chilled beams
- Demand Control Ventilation
- Heat Recovery Systems
- Variable Refrigerant Flow Systems

Control Systems

- Building Automation Systems
- Pneumatic-to-Digital Conversion
- Multi-System, Integration
- Demand Based Ventilation
- Demand Limiting
- Recommissioning and retro-commissioning
- Plug Loads
- Walk-in Cooler/Freezer Controls
- Air Compressors
- Trane Intelligent Services (building performance, energy assessment, remote monitoring, etc.)

Heating Systems

- Boiler Replacements
- High-Efficiency Modular Boilers
- Condensing Boilers
- Geothermal Heat Pumps
- Burner Stack Heat Reclaim
- Steam Trap Retrofits
- Steam Pressure Control
- Gas-to-Electric Conversion (fuel switching)
- Pumping Modifications
- Distributed Heating
- Pressure-Independent Control Valves
- Fuel Switching

Water Savings

- Low-Flow Toilets, Urinals and Faucets
- Sink Aerators/Flow Restrictors
- Flush Valve Fixture Commissioning
- Water and Sewage Treatment
- Dishwater Retrofits/Replacements
- Side-stream Filtration for Cooling Towers
- Ozone Treatment for Laundry
- Rain Sensors for Irrigation Systems
- High-Efficiency Domestic Water Heater
- Irrigation Wells

Renewable / Resiliency

- Solar Photovoltaic (PV)
- Solar Thermal
- Cogeneration
- Landfill Gas
- Biomass
- Wind Turbines
- Micro grids
- Battery / Energy Storage
- Green Roofs
- Thin Film Solar Roofing

Other Solutions

- Construction Management
- Energy Supply Services (demand response, procurement, etc.)
- Central Plant Construction
- Central Plant Removal
- Emergency Generators
- Fleet Management (conversion to cng or EV)
- Power Factor Correction
- Pipe and Tank Insulation
- Building Envelope (windows, roofs, weather-stripping, window film, etc.)
- Energy Awareness and Behavior Modification

Driving Actionable Outcomes



Legislative Opportunities



Clean Energy & Storage Investment Tax Credit (48ITC)

A tax credit of **up to 50%**

Expanded for **fuel cell, solar, geothermal, small wind, energy storage (thermal storage), biogas, microgrid controllers, and combined heat and power projects.**

Now **monetized for tax-exempt** organizations.



Energy Efficiency & Electrification 179D Tax Deduction

A tax deduction for lowering energy intensity

Can be assigned by implantation partners if they have tax benefit opportunities

Non-for-profits need to have a tax partner willing to share and assign the tax credit back to them to take advantage of 179D benefits.

Multiple Paths to Success

Multiple funding options available based on project requirements and your needs

	Cash	Trane Integrated Funding Solutions		Traditional Bond/Lease*	PACE (Property Assessed Clean Energy)*	ES/PPA (3rd Party Owner/Private)*	Structured Finance Energy ("X") as a service (Outcome Based)*	Concession Agreements*
		Lease Agreement	Service Agreement Funding					
Ownership of Project Assets	Customer	3rd Party	Customer	Customer/Lessor	Customer	3rd Party	3rd Party	3rd Party
Cash Upfront	Yes	No	No	No	No	No	No	No & potential \$\$ to customer
Credit Neutral	No	No	Yes	No	Yes	Yes	Yes	Yes
Term (Years)	N/A	Up to 7	2 to 5	5 to 20	20	5 to 20+	5-20+	30-50
Operation & Maintenance	N/A	Flexible	Flexible	Flexible	Flexible	3rd party owner decides	3rd party owner decides	3rd party owner & operator
Performance Guarantee Required	No	No	No	No	No	Yes	Yes	Yes
Minimum Deal Size	N/A	\$5k+	\$5k+	\$5k+	\$10k+	\$1.5M+	\$1.5M+	\$20M+



Financing Tools

Capital Project Referendum

- Election required for certain capital projects as outlined in MN Statute 126C.10 subdivision 14
- Facilities repairs and equipment purchases
- 10 year maximum levy
- MN Statutes 123B.63

School Building Agricultural Credit

- Created by the 2017 State Legislature
- Levy lost through credits to Districts replaced with State Aid through an open and Standing Appropriation
- Applies to all agricultural property (with the exception for the house, garage and 1 acre)
- Currently at 70% for Pay 2023
- MN Statutes 273.13 subdivision 13

Bonds for Capital Facilities

- Election is not required
- Funding for certain capital projects
- 15 year maximum levy
- Repaid through annual operating capital revenues
- MN Statutes 123B.62 subdivision 9

Long-Term Facilities Maintenance

- Replaces former Health & Safety, Alternative Facilities, Deferred Maintenance beginning with 2016-17 school year
- Requires a 10-year facilities plan, submitted to the Commissioner of Education
- Only for deferred maintenance, increasing facilities accessibility and health & safety issues
- Not for new construction, energy-efficiency projects
- Issuance of General Obligation Bonds or PAYGO
- MN Statutes 123B.595

Capital Grant or Loan

- There are several conditions that must be met in order to be considered for a Capital Loan or Grant, generally the tax base is too small to support the repayment of bonds
- Net tax rate after state paid equalization aid is more than 41.98 % of the ANTC
- Application must be submitted to Commissioner of Education by July 1
- All conditions are met after review and comment
- School board passes a Resolution by Nov 1
- Each Capital Grant or Loan requires a referendum before February 1

Operating Referendum

- Election required
- Can generate additional general education revenue
- 10 year maximum length
- May be used for operating or capital expenses

Capital Notes

- Election is not required
- Purchase vehicles, office technology equipment for instruction and capital equipment with a useful life as long as the notes
- Repaid by general fund levy
- MN Statutes 123B.61

Other information

- For any construction project over \$2 million located in one site a review and comment must be submitted to the Commissioner of Education for review and approval, for any district with an outstanding Capital Grant or Loan outstanding, the amount is for any project for \$500,000 on one site.
- The project must receive a positive review and comment back from the Commissioner prior to commencing the project.
- There is a Minnesota School District Credit Enhancement Program available for bond issues

Procurement Solutions - Omnia Partners



- Provide greater efficiency and economy in acquiring goods and services.
- Competitive price solicitation that yields economic benefits.
- Equalize purchasing power for smaller entities that are not able to command the best contracts.
- Maintain credibility and confidence in business procedures by maintaining open competition for purchases and by complying with purchasing laws and ethical business practices.

Intergovernmental Cooperation

[Minnesota Statutes 2022, section 471.59, subdivision 1](#)



Contract Number: 3341



[Contract Documentation](#)

Next Steps

1. Identify Key Leaders

2. Assemble Team & Facilitate

- Ascertain desired outcomes
- Develop interdisciplinary approach
- Identify opportunities & methods to accelerate desired outcomes
- Document a process and metrics to measure process advancement
- Create timeline for desired outcomes

3. Communicate Approach to Constituents

Next Steps Require:



Data Sharing



Stakeholder Engagement



Priority Identification

Learning Objectives

- Partnerships to drive student success.
- Alignment with stakeholders
- Maximize the educational return on investment
- Workforce development and career readiness for your students
- Incentives to improve financial return on investment.



Audience Question

- What types of projects are currently in the pipeline that may have a fit to bolster educational outcomes?
- Will you leverage federal/state incentives?



Panel Members



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