How ESG is Becoming the New Driver of Environmental Compliance

Midwest Environmental Compliance Conference

Tyler Marshall, PE, ENV SP

Melissa Tiedemann, AICP

September 13, 2022

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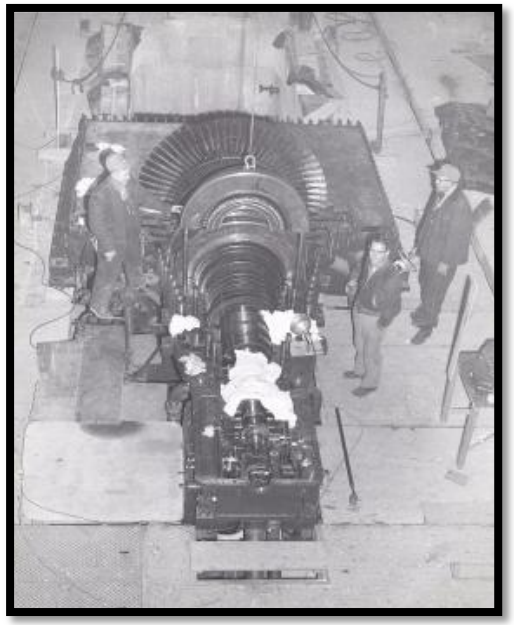
Tyler Marshall, P.E., ENV SP
Principal Engineer & Environmental
Sector Technical Lead
24 Years of Experience

Melissa Tiedemann, AICP
Senior Environmental Planner
23 Years of Experience

History

- Established in 1913 in Muscatine, Iowa
- Multidiscipline / “One Stop Shop”
- Projects
  - All 50 States
  - 118 Foreign Countries
  - Over 30,000 Projects



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One Stop Integrated Service Provider

Plant Services

Combined Heat & Power
Cogeneration
Boilers
Chillers
Instrumentation & Controls
Balance of Plant
Plant and Process Layout
Environmental – Air & Water
Material Handling
Internal Roadways & Rail

Building Services

Architectural
Structural
Mechanical
Electrical
Life Safety

PHASES

- Assessment
- Master Planning
- Permitting
- Land Development
- Design
- Bidding & Procurement Support
- Construction Administration
- Commissioning & Retro-Commissioning
- Cost Estimating
- Scheduling

Utility Inputs

Electrical Power
Natural Gas/Fuel
Water Supply

River | Road | Rail

Outputs

Air Emissions
Contamination
Landfill Material
Stormwater Runoff
Wastewater Treatment
Waste Heat / Climate Change

What Motivates Facilities?

vs.

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Traditional Motivators Are More “Stick”

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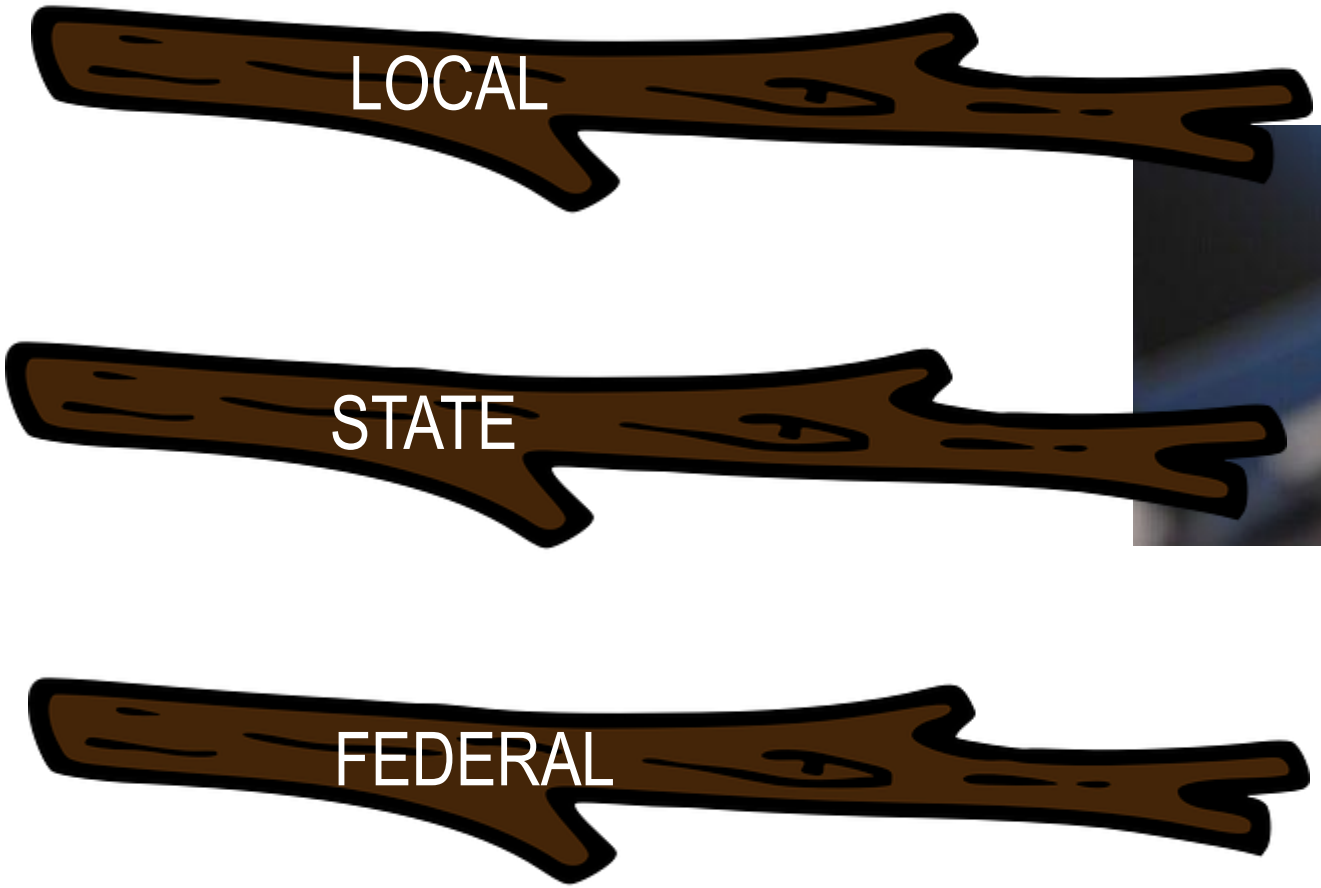
Regulators can be Very Stick-Like



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Sticks Only Motivate to Complete the Bare Minimum

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Air Quality

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Wastes & Pollution Prevention

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Water Quality

Regulations are notoriously being slow to change

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What is ESG?

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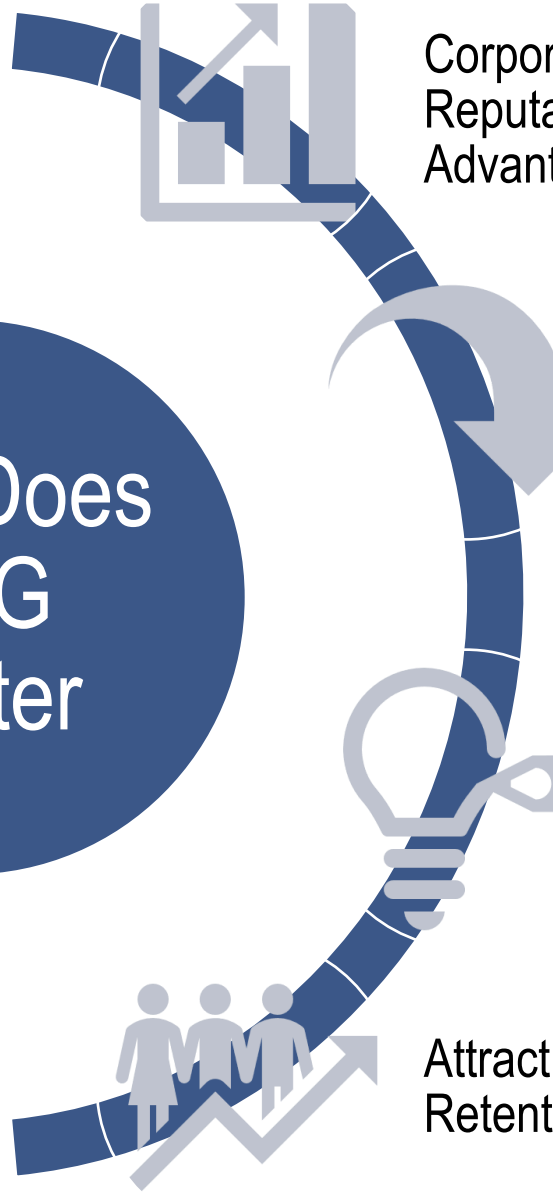
Why Does ESG Matter



Corporate Reputation & Advantage

Risk/Cost Reduction

Brand Recognition/Loyalty

Attraction & Retention of Talent

ESG works much more like a carrot

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Is it a Carat or a Karat or a Carrot??

Carat vs. Karat vs. Carrot

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Economics of ESG

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How to Quantify ESG Compliance?

- Multiple Ways to Quantify
  - securities filings
  - voluntary business disclosures
  - governmental databases
  - academic research
  - media reports.
- Software
- ESG Rating Firms
- Industry Specific Data Gathering
- In-House Record Keeping

How Can Individual Facilities Help Accomplish ESG Goals?

- New ESG goals for facilities can feel like “unfunded mandates”
- Existing staff is already spread thin

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Good News!

- Creativity, communication, and documentation can transform routine compliance into ESG points
- Minimal additional time input
- Improved project practices mean better outcomes

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Example: Envision ® Framework

- Well established framework
- Suitable for infrastructure and operation type projects.
- Backing of:
  - American Public Works Association (APWA)
  - American Society of Civil Engineers (ASCE)
  - American Council of Engineering Companies (ACEC)

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How Envision® Works

CHECKLIST *The Envision points table provides users with a detailed rating system of 60 key sustainability criteria, called credits, that provide a holistic infrastructure project measure to use as a self-assessment or to prepare for an official verification by outsiders.*

			IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
QUALITY OF LIFE	PURPOSE	QL1.1 Improve community quality of life	2	5	10	20	25
		QL1.2 Stimulate sustainable growth and development	1	2	5	13	16
		QL1.3 Develop local skills and capabilities	1	2	5	12	15
	WELLBEING	QL2.1 Enhance public health and safety	2	—	—	16	
		QL2.2 Minimize noise and vibration	1	—	—	8	11
		QL2.3 Minimize light pollution	1	2	4	8	11
		QL2.4 Improve community mobility and access	1	4	7	14	
		QL2.5 Encourage alternative modes of transportation	1	3	6	12	15
		QL2.6 Improve site accessibility, safety and wayfinding	—	3	6	12	15
	COMMUNITY	QL3.1 Preserve historic and cultural resources	1	—	7	13	16
		QL3.2 Preserve views and local character	1	3	6	11	14
		QL3.3 Enhance public space	1	3	6	11	13
						Maximum QL Points:	181*
LEADERSHIP	COLLABORATION	LD1.1 Provide effective leadership and commitment	2	4	9	17	
		LD1.2 Establish a sustainability management system	1	4	7	14	
		LD1.3 Foster collaboration and teamwork	1	4	8	15	
	MANAGEMENT	LD1.4 Provide for stakeholder involvement	1	5	9	14	
		LD2.1 Pursue by-product synergy opportunities	1	3	6	12	15
		LD2.2 Improve infrastructure integration	1	3	7	13	16
	PLANNING	LD3.1 Plan for long-term monitoring and maintenance	1	3	—	10	
		LD3.2 Address conflicting regulations and policies	1	2	4	8	
		LD3.3 Extend useful life	1	3	6	12	
						Maximum LD Points:	121*
RESOURCE ALLOCATION	MATERIALS	RA1.1 Reduce net embodied energy	2	6	12	18	
		RA1.2 Support sustainable procurement practices	2	3	6	9	
		RA1.3 Use recycled materials	2	5	11	14	
		RA1.4 Use regional materials	3	6	9	10	
		RA1.5 Divert waste from landfills	3	6	8	11	
		RA1.6 Reduce excavated materials taken off site	2	4	5	6	
		RA1.7 Provide for deconstruction and recycling	1	4	8	12	
	ENERGY	RA2.1 Reduce energy consumption	3	7	12	18	
		RA2.2 Use renewable energy	4	6	13	16	20
		RA2.3 Commission and monitor energy systems	—	3	—	11	
	WATER	RA3.1 Protect fresh water availability	2	4	9	17	21
		RA3.2 Reduce potable water consumption	4	9	13	17	21
		RA3.3 Monitor water systems	1	3	6	11	
						Maximum RA Points:	182*
NATURAL WORLD	SITING	NW1.1 Preserve prime habitat	—	—	9	14	18
		NW1.2 Protect wetlands and surface water	1	4	9	14	18
		NW1.3 Preserve prime farmland	—	—	6	12	15
		NW1.4 Avoid adverse geology	1	2	3	5	
		NW1.5 Preserve floodplain functions	2	5	8	14	
		NW1.6 Avoid unsuitable development on steep slopes	1	—	4	6	
		NW1.7 Preserve greenfields	3	6	10	15	23
	LAND & WATER	NW2.1 Manage stormwater	—	4	9	17	21
		NW2.2 Reduce pesticide and fertilizer impacts	1	2	5	9	
		NW2.3 Prevent surface and groundwater contamination	1	4	9	14	18
	BIODIVERSITY	NW3.1 Preserve species biodiversity	2	—	—	13	16
		NW3.2 Control invasive species	—	—	5	9	11
		NW3.3 Restore disturbed soils	—	—	—	8	10
		NW3.4 Maintain wetland and surface water functions	3	6	9	15	19
						Maximum NW Points:	203*
CLIMATE & RISK	EMISSIONS	CR1.1 Reduce greenhouse gas emissions	4	7	13	18	25
		CR1.2 Reduce air pollutant emissions	2	6	—	12	15
	RESILIENCE	CR2.1 Assess climate threat	—	—	—	15	
		CR2.2 Avoid traps and vulnerabilities	2	6	12	16	20
		CR2.3 Prepare for long-term adaptability	—	—	—	16	20
		CR2.4 Prepare for short-term hazards	3	—	10	17	21
		CR2.5 Manage heat islands effects	1	2	4	6	
						Maximum CR Points:	122*
						Maximum TOTAL Points:	809*

* Not every credit has a restorative level. Therefore totals include the maximum possible points for each credit whether conserving or restorative.

- Created to incorporate measurable ESG performance criteria for infrastructure projects.
- Incentivizes going “above and beyond”
- Side effect:
  - Lowered costs through better planning and efficiency
  - Improved community relations through lowered community impacts and improved communication.
- Utilizes 59 sets of metrics

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Example Scoring

RESOURCE ALLOCATION: WATER

RA3.1 Preserve Water Resources

12 POINTS

INTENT

Assess and reduce the negative net impact on fresh water availability, quantity, and quality at a watershed scale to positively impact the region's water resources.

METRIC

The extent to which the project considers and contributes to positively addressing broader watershed issues.

LEVELS OF ACHIEVEMENT

IMPROVED	ENHANCED	SUPERIOR	CONSERVING	RESTORATIVE
A + B	A + B + C	A + B + C + D	A + B + C + D + E	A + B + C + D + E + F
(3) Increased Awareness Of Watershed Issues	(5) Good Water Resource Management	(7) Wise Water Resource Management	(9) Total Water Management	(12) Positive Impact

(A) Assess the project's watershed context and the watershed-scale fresh water issues, including location, type, quantity, rate of recharge, and quality of water resources, as well as source and impacts of water used and the destination and impacts of wastewater.

(B) Estimates of water usage and wastewater generation over the life of the project.

(C) The project has features intended to reduce the identified negative impacts of water usage, and/or improve watershed-scale issues.

(D) The project has a net-zero impact on the quantity and availability of fresh surface water and groundwater supplies without compromising water quality.

(E) The project is part of, or contributes to, a watershed or regional water plan.

(F) The project makes a direct and significant net-positive improvement to the watershed.

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Air Quality Example

- Existing pollution control equipment on an emission source is out of date and has performance issues. New state of the art pollution control equipment is to be installed as a replacement.

Air Quality Example

QL 1.1 Improve Community Quality of Life

- Community stakeholder meeting to get input on project's social, economic, and environmental impact within the community. (5 points)

QL 1.2 Enhance Public Health and Safety

- The new equipment will comply with applicable regulations but will also go "above and beyond" the regulatory minimums. This results in a reduction of emissions into the surrounding community and will not lead to disproportionate impacts on disadvantaged communities. (16 points)

LD 3.3 Conduct a Life-Cycle Cost Analysis (LCCA)

- An LCCA is done to compare and assess alternatives for the new pollution control equipment. The Analysis expands beyond cost comparison to consider social and environmental non-monetary costs. (10 points)

Air Quality Example

RA 2.1 Reduce Operational Energy Consumption

- New equipment is more energy efficient than the old equipment, which means 10% less energy consumption. (6 points)

CR 1.3 Reduce Air Pollutant Emissions

- The selected pollution controls will result in emissions which meet applicable permit limits. The emissions are monitored to ensure compliance. (4 points)

Total points: 41

Wastewater Example

- Manufacturing facility plans to add a new product line resulting in a new wastewater stream.
- To maintain compliance with existing NPDES permit, the wastewater stream will go to a new water reclamation system to feed other processes.

Wastewater Example

QL 1.1 Improve Community Quality of Life

- Community stakeholder meeting to get input on project's social, economic, and environmental impact within the community. (5 points)

QL 1.2 Enhance Public Health and Safety

- The facility could have pushed for increased production-based discharge limits with the new product line. However, the facility chose an option which went "above and beyond" the regulatory minimums. This results in a reduction of pollutants into the surrounding community and will not cause any disproportionate impacts on disadvantaged communities. (16 points)

LD 3.1 Stimulate Economic Prosperity and Development

- The project and associated production will result in increased production and new jobs for the facility, benefitting the community. (3 points)

RA 3.2 Reduce Operational Water Consumption

- The water reclamation system will reduce potable water use for existing production by 25%. (4 points)

Wastewater Example

NW 2.4 Protect Surface and Groundwater Quality

- The project reduces the predicted pollutant loading to surface water, and the discharge will be monitored to quantify the results. (9 points)

CR 2.3 Evaluate Risk and Resilience

- A hazard analysis is performed to identify the potential threats and vulnerabilities which might cause the water reclaim system to fail. This identifies likelihood and consequences downstream if a bypass occurs, such as existing potable water intakes or recreational areas. (24 points)

CR 2.6 Improve Infrastructure Integration

- TO reduce likelihood of downstream impacts, the design is modified to incorporate a bypass line which will re-route process flows to an existing equalization basin. (5 points)

Total points: 66

Stormwater Example

- To comply with upcoming benchmarks in their stormwater general permit, urban manufacturing facility needs to reduce the pollutant loading in their stormwater. The facility plans to install engineered wetlands in an unused flood-prone portion of the facility along a river.

Stormwater Example

QL 1.1 Improve Community Quality of Life

- Community stakeholder meeting to get input on project's social, economic, and environmental impact within the community. (5 points)

QL 2.2 Encourage Sustainable Transportation

- Wetlands along the riverfront requires re-grading to route and hold runoff. Grading plan double purposes the basin's berm for a new walking / bicycle path, which can be tied into the city's trails network. This will encourage walking and bicycling for transportation.(8 points)

QL 3.4 Enhance Public Space and Amenities

- Stakeholder meeting indicated support for increased access along riverfront, which the community did not have before. (11 points)

LD 1.3 Stakeholder Involvement

- Stakeholders at the meeting include the city, which has been actively trying to expand the existing trails network. Input from stakeholders is used to validate the concept, and feedback on the design was sought from stakeholders. (18 points)

Stormwater Example

LD 3.1 Stimulate Economic Prosperity and Development

- The project will contribute to the community's attractiveness for business, industry, and residential growth. (12 points)

RA 1.5 Balance Earthwork on Site

- Perimeter berms are designed to 100% balance the cut needed to create the wetland basin. (8 points)

RA 3.1 Preserve Water Resources

- During the study phase for the project, a desktop evaluation of the local watershed was conducted. The study identified existing stormwater discharges and pollutants of concern which may have negative impact on the watershed. The project will result in reduced discharge of those pollutants. (12 points)

RA 3.4 Monitor Water Systems

- Management of the wetlands will include a discharge sampling plan to verify long-term system performance. (6 points)

Stormwater Example

NW 2.2 Manage Stormwater

- The wetland is designed to treat 150% of the 90th percentile 24-hour event and reduces overall runoff volumes from the facility for the 10-year, 24-hour storm. A CSWPP has been developed for the project. (9 points)

NW 2.4 Protect Surface and Groundwater Quality

- The project does not create any new pollutant pathways to surface water, eliminates a source of surface water pollution, improves surface water quality, and is monitored to quantify the discharge quality. (20 points)

NW 3.2 Enhance Wetland and Surface Water Functions

- The project study identifies impacts to and actively protects the water quality, aquatic habitat, and sediment transport. (12 points)

Stormwater Example

CR 2.2 Assess Climate Change Vulnerability

- The engineering study includes an evaluation of climate change impacts. The wetland design is modified to incorporate a higher peak capacity in control structures, and a diversion point for extreme flow bypasses is provided. (14 points)

Total points: 135

Potential Envision Platinum Award

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Keys to Success

- Stakeholder Engagement
- Detailed Planning
- Documentation
- Creativity

Let Us Help You Explore Ideas for Your Facility Goals

Tyler Marshall, PE, ENV SP
MarshallTyler@Stanleygroup.com
319.259.6607

Melissa Tiedemann, AICP
TiedemannMelissa@stanleygroup.com
319.259.6603

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