



Standards Outcome Report

INFRASTRUCTURE

SASB Standards Development Team
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Contents

- Executive Summary 4
- Table I: Summary of IWG Feedback on Issues 5
- I. Issues for Reconsideration..... 6
 - 1. Gas Utilities 6
 - a. Downstream Emissions Management – Retain 6
 - 2. Water Utilities 9
 - a. Climate Change Risk Exposure – Focus and reframe, pending further research 9
 - 3. Waste Management 12
 - a. Community Relations – Likely remove, pending further review 12
 - 4. Engineering & Construction Services 15
 - a. Community Relations – Retain and add additional evidence of financial impact 15
 - b. Workforce Diversity & Inclusion – Drop 19
 - 5. Real Estate Owners, Developers & Investment Trusts..... 22
 - a. Managing Environmental & Socioeconomic Impacts of Properties – Remove generalized form of issue, include underlying issues, as appropriate 22
- II. Strong Issues with Reservations..... 29
 - 1. Electric Utilities 29
 - a. Land Use & Community Relations – Retain..... 29
 - b. Downstream Energy Stewardship – Retain 31
 - 2. Gas Utilities 32
 - a. Health, Safety & Emergency Management – Retain 32
 - b. Management of the Legal & Regulatory Environment – Retain, pending further research 34
 - 3. Waste Management 36
 - a. Landfill Gas Management – Retain..... 36
 - 4. Engineering & Construction Services 37
 - a. Exposure to Shifting Energy Markets – Decision pending further review 37
 - 5. Real Estate Owners, Developers & Investment Trusts..... 39
 - a. Climate Change Risk Exposure – Retain..... 39
- III. Suggested Additional Issues..... 42
 - Table II: New issues proposed by IWG members 43
 - 1. Electric Utilities 43
 - a. Electrical Equipment Lifecycle Impacts – Do not add 43
 - b. Workforce Health & Safety – Decision pending further review 44
 - c. Public Safety – Decision pending further review..... 44
 - 2. Gas Utilities 45

a.	Natural Gas Sourcing – Do not add	45
3.	Water Utilities	45
a.	Community Relations – Decision pending further review	45
b.	Employee Recruitment & Retention – Do not add	46
4.	Waste Management	46
a.	Air Quality – Decision to be based on further analysis	46
5.	Engineering & Construction Services	47
a.	Waste Management for Construction Materials – Add a waste metric to Lifecycle Impacts of Buildings.....	47
b.	Environmental & Social Considerations in Site Selection – Do not add	48
6.	Home Builders.....	49
a.	Waste Management for Construction Materials – Do not add	49
b.	Supply Chain Management – Decision pending further review	50
c.	Wood Sourcing* – Decision pending further review.....	51
d.	Affordable Housing* – Do not add	51
7.	Real Estate Owners, Developers & Investment Trusts.....	52
a.	Water Management – Add	52
b.	Waste Management – Do not add	53
c.	Human Health – See “Issues for Reconsideration”.....	54
d.	Land Use & Ecological Impacts – See “Issues for Reconsideration”.....	54
e.	Environmental Accidents & Remediation – Do not add	54
f.	Tenant Engagement on Resource Efficiency – See “Issues for Reconsideration”	55
g.	Lobbying & Political Contributions – Do not add.....	55
h.	Supply Chain Management – Do not add	56
8.	Real Estate Services.....	56
a.	Climate Change Adaptation – Do not add	56
b.	Customer Health & Safety – Do not add.....	57
c.	Contractor Management – Do not add.....	57
	Appendix I: Summary of IWG Feedback on Issues	59
	Appendix II: Draft List of Disclosure Topics for Public Comment	60
	Appendix III: Sample Accounting Metrics	61

Executive Summary

This report provides a reference and framework for the review of standards outcomes in the Infrastructure sector, scheduled to be carried out by the SASB Standards Council on September 3, 2015.

In the second quarter of 2015, SASB's Standards Development Team identified sustainability disclosure topics and related accounting metrics (hereinafter referred to as "issue(s)" and "metric(s)") in the eight industries in the Infrastructure sector:

- Electric Utilities
- Gas Utilities
- Water Utilities
- Waste Management
- Engineering & Construction Services
- Home Builders
- Real Estate Owners, Developers & Investment Trusts
- Real Estate Services

The issues and associated metrics have subsequently been vetted by external stakeholders through the Industry Working Groups (IWG) for industries in the sector. This process allowed for each issue to be evaluated on the basis of likely materiality and investor interest and each metric on the basis of relevance, decision-usefulness, cost-effectiveness, comparability, and auditability. Based on this feedback and additional research, SASB has refined its accounting standards for these eight industries in advance of a 90-day public comment period (PCP), which will begin on October 7, 2015.

This report provides the Standards Council with an update on SASB's evaluation of IWG feedback and an overview of additional research, which together form the basis for the revised set of issues and metrics prepared for public comment.

- **Section I: Issues for Reconsideration** focuses on issues where a majority of IWG participants agreed that the issue was likely to have material impacts, but where several had significant reservations about materiality. For such issues, SASB reconsidered evidence of materiality and/or specific aspects of the issue, based on IWG feedback and additional SASB research. SASB would like to draw the attention of the Standards Council to these issues in particular, considering the IWG feedback and SASB's response.
- **Section II: Strong Issues with Reservations** focuses on issues where a majority of participants also agreed that the issue was likely to have material impacts, but some had reservations. For such issues, SASB evaluated the specific IWG comments and the strength of the initial evidence of financial impact to determine whether any changes were required. Issues in this section received a relatively lower amount of negative feedback and fewer potential changes are recommended for these compared to issues in Section II.
- **Section III: Suggested Additional Issues** presents a summary of SASB's research for evidence on suggested issues on and decision whether to include additional issues proposed by IWG participants.
- **Table I** (*below*) shows the percent of IWG participants that agreed that the proposed issues were likely to constitute material information for companies in the industry; for 77 percent of topics across all industries, more than 75 percent of participants agreed on likely materiality.
- **Table II** (*Section III*) shows a list of new issues proposed by IWG members.
- **Appendix I** shows the list of issues by industry that were presented to the IWG and SASB's initial assessment and process for revising each of those issues.
- **Appendix II** contains a draft list of issues that SASB will present for public comment on October 7, 2015.
- **Appendix III** provides sample draft accounting metrics for the Electric Utilities industry, for reference.

In addition to this report, there is one supplemental report, which provides both a detailed materiality assessment of each disclosure topic by the IWG, as well as a list of all IWG comments on issues.

Table I: Summary of IWG Feedback on Issues

Industry	Completed surveys	Average approval	Lowest agreement
Electric Utilities	44	87%	77%
Gas Utilities	12	75%	67%
Water Utilities	17	87%	71%
Waste Management	18	80%	56%
Engineering & Construction Services	20	81%	55%
Home Builders	10	90%	80%
Real Estate Owners, Developers & Investment Trusts	43	73%	63%
Real Estate Services	11	86%	82%

I. Issues for Reconsideration

This section focuses on issues where a majority of IWG participants agreed that the issue is likely to constitute material information, but several had significant reservations about materiality (between 50 and 75 percent of participants typically agreed that the issues are likely to constitute material information). For such issues, SASB reconsidered evidence of materiality and/or specific aspects of the issue, based on IWG feedback and SASB research. In this report, issues are analyzed by industry, looking at (i) **evidence of interest** from SASB’s heat map and detailed IWG feedback and (ii) **evidence of financial impact** from existing research in industry briefs complemented by additional research. An **analysis** of all evidence is then provided, together with a final **recommendation** for inclusion or removal of the issue, or any changes to be made.

1. GAS UTILITIES

a. Downstream Emissions Management – Retain

Evidence of Interest

Heat Map Tests

The issue received a heat map score of 75 out of 100, placing it in the top quartile. For the proposed issues, the minimum was 25, the maximum was 83, and the median was 73.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was fourth out of four issues.

Issue materiality¹

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	2	2	4	8	67%
No	1	0	0	1	8%
Maybe	2	0	1	3	25%
Total	5	2	5	12	

Comments from IWG respondents

Although the level of agreement is well below 75 percent, only one (corporate professional) of the 12 participants disagreed that the issue is likely to have material impacts on a company. Participants’ main concerns were related to the metrics rather than the topic itself.

¹ The three response options were: “Yes. It is material,” “No. It is not material,” and “Yes, but with reservations.”

Sample comments²

Stakeholder Type	Material?	Stakeholder Comment
Market Participant	Yes	<i>Gas could be next in line after coal and oil in the divestment campaign's cross-hairs. Emission management will be a key metric for understanding the carbon risk for a company.</i>
Corporate Professional	Maybe	<i>I don't have reservations with the topic in general. My reservation is with one of the proposed disclosure standards.</i>
Corporate Professional	No	<i>While this could be material for older pipes of particular materials in certain parts of the country, due to regulations that have been instituted by PHMSA, many important measures have been put in place around leak survey (inclusive of new techniques for surveillance), MAOP monitoring, etc. that help not only with safety but also with leak detection in general and emissions management. There also can be some truth that customers can be emitters but by the natural course of regulation and pressure on the gas-specific utility industry, I do not consider this one of the most significant risks to our financial position and investor value.</i>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)³

Issue description from the IWG brief:

- *Natural gas utilities can mitigate the environmental impact of their operations in two main ways—by reducing fugitive emissions and by incentivizing their customers to be more energy efficient.*
- *Many gas utilities, especially older companies on the East Coast, have to deal with aging infrastructure that is more prone to leaks. There is a careful balance in this industry between the timely update of this vast array of pipes, and avoiding placing an undue cost burden on its customers. An increased regulatory emphasis on preventing methane leakages could, depending on a company's specific regulatory environment, be an opportunity to increase shareholder returns through an accelerated pipeline upgrade schedule.*
- *In states without decoupling, it can be difficult to incentivize companies to promote energy efficiency among their customers as their profits are tied to the amount of gas sold. However, the spread of decoupling legislation could help incentivize more companies to develop these programs. The decreased gas flowing through pipes in these regions could slow down the necessity for infrastructure upgrades, as well as lessen operational costs. Depending on the sentiment of a company's PUC, this could either benefit or hurt company profits.*
- *The largest degree of uncertainty—and therefore potential risk—in this industry comes from pending and potential future environmental legislation.*

Evidence from the IWG brief:

- *The White House has set a goal to cut nationwide methane emissions by 40 to 45 percent by 2025, compared to 2012 levels. While natural gas distribution pipelines are far from the largest emitters of methane, this is still likely to prompt regulatory efforts to limit pipe leakage.*
- *There are roughly 2.1 million miles of distribution pipelines in the U.S., which make up 81 percent of the total pipeline mileage. Nationwide, it is estimated that nine percent of distribution pipelines are showing serious effects of aging. This subset is 18 times more leak prone than newer plastic*

² The table presented here and in similar subsections that follow in this document provide examples of comments by IWG members. The full set of comments can be found in the supplemental report. Comments included are quoted verbatim and so may contain typographical or grammatical errors.

³ Note – Paragraphs presented here and in similar sub-sections for issues that follow in this document are extracts from SASB industry briefs and are provided for reference. Please refer to briefs for complete evidence and citations.

pipings, and 57 percent more leak prone than specially-lined steel pipes, which are the most commonly used pipes. According to an EPA estimate, there are 32 billion cubic feet (bcf) of natural gas leaks annually from the pipes themselves. While the leaky pipes account for a small percentage of total piping, a Blue-Green Alliance estimate found they accounted for 23 bcf of the leaked gas annually. Leaky pipes lead to GHG emissions in the form of methane, which is of particular concern because methane is estimated to be 84 times more potent in contributing to global warming than carbon dioxide after 20 years, and 28 times more potent than carbon dioxide after 100 years.

- *Another Blue-Green Alliance estimate found that implementing an accelerated schedule to replace leaky pipes within the next ten years, as opposed to the current thirty-year timeline, would result in \$1.5 billion in savings for ratepayers. These are significant savings that could be passed onto to customers, likely boosting market size in the long run as they would contribute a lower relative cost of natural gas compared to electricity.*
- *The financial implications of methane leaks are uncertain. The need for significant infrastructure upgrades could prove to be a boon for investors in regulatory environments where the PUC is willing to let the utilities pass all of the capital costs on to the rate-payers. Infrastructure investments would come with an allowed rate of return for the gas utility's shareholders. Conversely, if the PUC views a certain company's failing infrastructure as a result of the company's own negligence, then the PUC could not allow it to recover all the costs of a mandated upgrade.*
- *Depending on regulatory outcomes, companies with high pipeline efficiency could either stand to benefit or be harmed by upcoming legislation. For example, if there is a new EPA law that requires companies to reduce leaks by a certain percentage, companies that have already been aggressively pursuing leak reduction, like Southern California Gas Company, a regulated utility, could be negatively affected, as they likely would have already first pursued the most cost-effective reduction strategies. If a company's PUC decides that it cannot pass the entirety of its infrastructure upgrade costs on to its customers, the company could see a drop in profits.*
- *Utilities can lower their operations and maintenance costs (O&M) by encouraging decoupling measures in their state, as well as educating their customers on how to be more efficient with their natural gas usage. For example, if a customer qualifies for a state or federal low-income program, then Pacific Gas and Electric Company (PG&E), a large regulated utility in central and northern California, will send contractors to the customer's home to help them weatherize and check their appliances for efficiency. Peoples Gas, a Chicago-based regulated utility, reported spending \$19 million in 2013—roughly \$25 per residential customer—on natural gas efficiency programs. That year, the utility reported savings of 7.77 million Therms, or 0.71 percent of its retail sales. Apart from the revenue smoothing benefits mentioned earlier, this decreased flow of gas through the pipes can lower company costs, as well as potentially reduce its risk profile and subsequently its cost of capital. AGL Resources, an Atlanta-based gas utility, confirms this in its fiscal year (FY) 2014 Form 10-K, stating that “decoupling... allows us to encourage our customers' energy conservation and ensures a more stable recovery of our fixed costs.”*
- *In its 2014 Form 10-K, NiSource, a large utility with natural gas operations throughout the Midwest and New England, disclosed at length the risks from potential forthcoming legislative changes. “While NiSource attempts to reduce GHG emissions through efficiency programs, leak detection, and other programs, GHG emissions cannot be entirely eliminated. The current administration has made it clear that it is focused on reducing GHG emissions, through legislation and/or regulation. Imposing statutory or regulatory restrictions and/or costs on GHG emissions could increase NiSource's cost of producing energy, which could impact customer demand or NiSource's profitability. Compliance costs associated with these requirements could also affect NiSource's cash flow.”*

Analysis

- Only one (corporate professional) of the 12 participants disagreed and main concerns were related to the metrics rather than the topic itself. However, the priority ranking for the issue was low—fourth out of four issues.
- The heat map score was quite high, suggesting that the topic is discussed in company reports, news, and other industry publications.
- There is strong evidence for financial impact. Evidence indicates that leaks are more prevalent for older pipes with significant savings for reducing leaking. However, the financial viability of such capital upgrades depends on the ability of the utilities to pass the costs onto the rate payers. If approved by the state PUC, pipeline upgrade investment can be passed on to rate payers.
- SASB has considered the following key questions further:
 - What are the financial impacts, if any, of methane leaks and fugitive emissions not already captured in the initial evidence?
 - Are there best practices for downstream emissions management that were previously not captured in the issue?
 - What are companies doing to educate their customers on how to be more efficient with their natural gas usage?
 - How should leak volume be calculated (just pipelines or all leaks in the system)?
 - What could be the impact of California's SB1371? Are other states considering similar bills?
- In addition to loss of gas, leaks increase the likelihood of accidents. Updating older pipelines and using advanced leak detection technology, such as the use of tracking drones, are effective in reducing leakage.
- Unfortunately, leaks are calculated using a variety of methods, and it's still a relatively new area of regulation. Utilities are required to disclose their method of calculation to regulatory bodies. SASB will work on creating a technical protocol for measurement that aligns with the required and/or voluntary reporting requirements for companies. For companies that are not covered under existing regulation, SASB will provide reference to existing methodologies.

Recommendation

- Due to high heat map scores and strength of evidence of financial impact, retain topic and address IWG concerns when developing technical protocol. SASB will refer to established guidelines, such as those in California's SB1371 and others, to ensure alignment and comparability.

2. WATER UTILITIES

a. Climate Change Risk Exposure – Focus and reframe, pending further research

Evidence of Interest

Heat Map Tests

The issue received a heat map score of 50 out of 100, indicating a moderate level of interest. For the proposed topics, the minimum was 25, the maximum was 100, and the median was 58.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was sixth out of seven issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	3	2	7	12	71%
No	0	0	0	0	0%
Maybe	2	1	2	5	29%
Total	5	3	9	17	

Comments from IWG respondents

Out of 17 respondents, 12 respondents (71%) responded “Yes” and none responded “No.” However, from the comments it appears that one of the channels of impact (revenue from oil and gas exploration) was largely missed by IWG participants. Many IWG members seemed to conflate this topic with water scarcity, which is indeed a closely related issue. Others were concerned about how to measure and compare risk exposure across companies.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Public Interest	Yes	<i>water scarcity, extreme weather events, risk to facilities and the ability to fulfill contract obligations have direct relationship to future performance</i>
Market Participant	Maybe	<i>main risk from climate change is water scarcity which is covered elsewhere. climate change impacts will depend on geography and hence too hard to compare.</i>
Public Interest	Maybe	<i>This is not a reliably measurable area.</i>
Public Interest	Maybe	<i>It is not clear to what extent climate change (a global phenomenon) will or will not affect local water availability</i>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)

Issue description from the IWG brief:

- *Climate change presents risks to companies in the Water Utilities industry. The increasing frequency and severity of storms challenge water and wastewater treatment facilities. Wastewater treatment facilities, in particular, are designed with maximum treatment capacities. Intense precipitation may lead to sewage volumes that exceed the capacity of treatment facilities. In such cases, sewage or stormwater may be diverted around secondary treatment or discharged directly into waterways. Such untreated or undertreated discharges are termed sanitary sewer overflows (SSOs) and can contaminate lakes, rivers, and oceans, as well as present human health risks and lead to sewage backups that cause property damage. Companies operating wastewater treatment facilities with inadequate capacities in the face of potentially increasing storm activity in some geographies may face significant financial risks.*
- *Increasing storm intensity and rising sea levels present physical asset risks to companies in the industry. Wastewater treatment facilities are generally located at the lowest altitude possible in the region to productively utilize gravitational forces for wastewater collection, as well as near bodies of water to release discharges. Inevitably, this places treatment facilities in a high-impact zone along coastlines and large lakes and rivers, increasing the risk of physical asset damage during intense storm and flood activity. As a result, many treatment facilities are building or strengthening storm barriers.*
- *Saline intrusion driven by rising sea levels is a specific risk to water treatment facilities. As sea levels rise, seawater intrusion into groundwater aquifers may occur, as well as increased salinity levels of brackish surface water in coastal regions. Water treatment facilities that were not*

designed and developed for certain salinity levels must therefore be redesigned and redeveloped to adequately treat increasingly saline source water. This presents significant costs to companies operating water treatment facilities in coastal regions.

- A separate climate change-related risk that water utility companies face is reliance on the oil and gas industry for revenue and growth opportunities. Oil and gas production is a water-intensive activity. Hydraulic fracturing, in particular, requires vast levels of water as an input. The initial hydraulic fracturing of a single well requires 1.2 million to 5 million gallons of water, with estimates of 3 million to 8 million gallons of water over the well's lifetime. Oil and gas production also generate wastewater that must be treated prior to discharge. The water-intensive nature of oil and gas production has resulted in increasing revenues for companies in the industry from oil and gas customers. This creates an inherent customer concentration risk in the event of increased GHG emissions regulations or depressed oil and gas production.
- Overall, climate change preparedness is critical for water supply systems and wastewater treatment facilities. Companies must maintain the ability to meet basic human needs by reliably providing safe, affordable drinking water and adequately treating wastewater in the face of severe weather events that are increasing in frequency and intensity. Furthermore, overreliance on the fossil fuel industry in light of climate change regulations could further jeopardize the ability of companies to provide core services.

Evidence from the IWG brief:

- In the U.S., the Association of Metropolitan Water Agencies and the National Association of Clean Water Agencies released a report in 2009 analyzing the water and wastewater utility adaptation costs of climate change. The report estimated that the adaptation costs will be \$325 billion to \$692 billion for water utilities and \$123 billion to \$252 billion for wastewater utilities through 2050. This amounts to \$448 billion to \$944 billion in expected industry adaptation costs of climate change through 2050. Estimates include both capital expenditures and increased operating and maintenance costs, and are in excess of general infrastructure upgrade, renewal, and replacement costs.
- The industry widely discloses climate change risks, including the known impacts of extreme weather events and potential forward-looking impacts. Brazil's Sabesp provides this disclosure around climate change-related financial impacts in its 2014 Form 20-F: "Climate change may lead to increases in extreme weather events such as droughts or torrential rain, which may affect our ability to deliver our services and require us to take action." Sabesp's Form 20-F additionally discusses the risks of sewage overflows from climate change-related extreme weather events, as well as rising sea levels leading to saline intrusion and threatening coastal wastewater treatment plants.
- The prevalence of SSOs is highlighted by the EPA's estimate that 23,000 to 75,000 SSOs take place in the U.S. each year. Such events are often caused by extreme weather events combined with inadequate infrastructure.
- Hurricane Sandy is a recent extreme weather event that illustrates the types of impacts that may continue to occur, potentially with increasing frequency and magnitude. In October 2012, Hurricane Sandy struck the U.S. East Coast after inflicting massive damage in the Caribbean. The second deadliest and costliest hurricane in U.S. history and the largest Atlantic hurricane on record, it created widespread flooding and wind damage, impacting all types of infrastructure, including vulnerable water and wastewater utilities.
- A report issued by the federal government's Hurricane Sandy Rebuilding Task Force included these conclusions about water and wastewater treatment facilities: "Floodwaters, massive storm runoff, wind damage, and loss of electricity combined to cause wastewater treatment plants up and down the mid-Atlantic coast to fail. These failures sent billions of gallons of raw and partially treated sewage into the region's waterways, impacting public health, aquatic habitats, and resources. The threat of contaminated flood waters entering groundwater aquifers, pipes, and wells that supply drinking water to much of the region also caused concern for public health."

Many drinking water utilities experienced power loss, which disrupted their ability to provide safe water.” The financial costs of repairing and strengthening water and wastewater infrastructure and treatment facilities were estimated at \$4.5 billion for New York State and New Jersey alone—illustrating the financial severity that an extreme weather event can have on the industry.

Analysis

- The heat map score indicated a moderate level of interest in the topic. The issue received low priority ranking and the agreement level was below 75 percent.
- Currently the issue includes four distinct angles, two of which overlap with other existing issues:
 - Increased frequency and severity of storms can lead to excess wastewater being discharged untreated into waterways (Could be mapped to Effluent Quality Management)
 - Increased storms and rising sea levels can damage physical assets—treatment facilities and distribution networks
 - Climate change can increase likelihood of salt water intrusion, forest fire risks, decreased snowpack, and increased algae, thereby threatening quality and quantity of water (Could be mapped to Water Scarcity)
 - Revenue from oil and gas segment may be at risk if exploration and production activities are curtailed by climate change and other environmental regulations
- SASB is further considering the following key questions:
 - Are there fines or penalties for sanitary sewer overflows, or do companies just have to pay to repair the damage?
 - How can investors distinguish between companies that are prepared for climate change and extreme weather events than others?
 - Are companies really vulnerable because of their services to/revenue from oil and gas operations?

Recommendation

- The high percentage of “Maybe” responses indicates that the issue needs to be refined and focused.
- Map two of the angles into existing issues since the issues simply intensify in their importance due to impacts from climate change—Effluent Quality Management and Water Scarcity.
- Explore further the risks to physical assets which determines grid or distribution network resiliency—an important factor for both electric and water utilities.
- Explore whether to keep the angle on revenue from oil and gas segment.
- Final decision is pending further research and analysis.

3. WASTE MANAGEMENT

a. Community Relations – Likely remove, pending further review

Evidence of Interest

Heat Map Tests

The issue received a heat map score of 8 out of 100, indicating a low level of interest. Among the proposed issues, the minimum was 8, the maximum was 100, and the median was 33.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was seventh out of eight issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	4	4	2	10	56%
No	1	0	1	2	11%
Maybe	2	1	3	6	33%
Total	7	5	6	18	

Comments from IWG respondents

Although the “Yes” percentage was low at 56 percent, only two IWG participants responded “No.” There were concerns about the metrics, which were deemed too narrow and prescriptive by some. Others viewed community relations as secondary to ‘sustainability.’

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Public Interest	Maybe	<i>I see CR as having affect on social license to operate but do not see social license in this area to be sufficiently quantifiable to effect stock price</i>
Market Participant	Maybe	<i>While community relations are important, they do not carry the same level of materiality as the other topics sited. Although community opposition may delay expansions and zoning requests, companies tend to prevail in court and the government climate currently leans to business over citizen. Furthermore with a large percentage of facilities are located in poorer neighborhoods, activism is less likely in general.</i>
Corporate Professional	Maybe	<i>This topic goes beyond the metrics listed here. Should be more aligned around healthy communities/social aspects too - employment, philanthropy, etc</i>
Public Interest	No	<i>Community relations are somewhat secondary to actual sustainability measures and really arguably don't impact the benefits of sustainability.</i>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)

Issue description from the IWG brief:

- *While the industry plays a major role in ensuring public health through proper management and disposal of waste, mismanagement can result in harm to public health and the environment, particularly in communities neighboring waste management facilities. Communities living near landfills, transfer stations, or other waste facilities may be exposed to odors, explosions, air pollution, and soil and water contamination.*
- *Historically, hazardous waste sites, municipal landfills, waste transfer sites, incinerators, and other hazardous facilities have been disproportionately located in low-income and minority neighborhoods. Studies have established links between ailments such as asthma, childhood cancer, and hindered brain development and environmental factors, including exposure to chemicals and air pollutants. The presence of landfills can also decrease property value. The environmental justice movement was among the factors that led to the closure of smaller local landfills and the growth of larger regional landfills. This trend also indicates the potential difficulty of obtaining permits to expand or create landfills.*
- *Even though many smaller landfills have been closed, they still need to be monitored and maintained to reduce or mitigate environmental and health risks even years after closure. Because these facilities are frequently located by low income and minority populations, these populations are more likely to be affected by mismanagement of current and closed waste facilities.*
- *Waste management services are increasingly being privatized, and a vast majority of the permitted MSW landfill capacity is held by privately owned landfills. However, there is a risk that*

dissatisfied communities will demand a return to public ownership. Companies have faced resistance to proposed landfill expansion due to concerns about health impacts from waste operations. Because the industry provides an essential public service, it relies heavily on its social license to operate. In order to continue and expand operations, industry players must carefully manage environmental and social externalities of their operations and adopt community engagement strategies.

Evidence from the IWG brief:

- *Environmental issues tend to disproportionately affect low income and minority populations. The impacts from landfills are no different. A 2007 report found that 56 percent of the nine million people who live within three kilometers of large commercial hazardous waste facilities are people of color. In California, the proportion is even higher—81 percent. Poverty rates in these neighborhoods are 1.5 times higher than average.*
- *The presence of a landfill in the community can erode property values. According to researchers at the Pennsylvania State University's Northeast Regional Center for Rural Development, landfills decrease adjacent property values, and decrease them even more when they accept higher volumes of trash. The researchers studied property values around three different sized landfills in Pennsylvania. Previous studies, many of which had small sample sizes in terms of home values, came to contradicting conclusions: Either proximity to landfills led to a decline in value or there was no relationship at all between the two factors.*
- *In addition to soil, water, and air pollution, landfills, waste processing, and transfer stations can be a source of odors and can attract rodents. Bridgeton Landfill LLC, a subsidiary of Republic Services, faced a 2013 class action lawsuit filed by local residents on behalf of their neighbors for enduring foul odors. The company agreed to a settlement of more than \$6.8 million that will be paid out to residents who live in the 400 homes closest to the facility. According to the plaintiff's attorney, the money is intended to offset the loss in property values as well as anxiety caused by the odors.*
- *For companies managing hazardous waste facilities, the risk of community dissatisfaction may be higher. In the U.S., there are only 20 landfills that are allowed to accept RCRA [Resource Conservation and Recovery Act] waste. It is difficult to open new RCRA facilities due to the "high cost of obtaining permits, multi-year permitting timeframes, uncertainty of outcome, high initial capital expenditures and the potential for both broad-based and local community opposition to the development of new facilities." These risks were disclosed in U.S. Ecology's FY2014 annual SEC filing. As a result, no new hazardous waste landfills or incinerators have been built since 2000.*
- *Community members opposed the proposed expansion of a hazardous waste facility in Kettleman City, alleging that the company's operations have led to increased birth defects, infant mortality, and adult illnesses in the area. While the planned expansion was approved by the California Department of Toxic Substances Control (DTSC), the opposition delayed the approval process. According to the DTSC, expansion came with increased environmental safeguards, as well as increased reporting and public disclosure requirements.*
- *Companies in the industry are keenly aware of the potential for community opposition to expansion or new projects. As Waste Management states in its FY2014 Form 10-K, "Local communities, citizen groups, landowners or governmental agencies oppose the issuance of a permit or approval we need, allege violations of the permits under which we operate or laws or regulations to which we are subject, or seek to impose liability on us for environmental damage." Failure to obtain permits could have a material adverse impact on financial performance. The disclosure continues, "Responding to these challenges has, at times, increased our costs and extended the time associated with establishing new facilities and expanding existing facilities. In addition, failure to receive regulatory and zoning approval may prohibit us from establishing new facilities or expanding existing facilities."*

Analysis

- Evidence of interest is weak for Community Relations. The heat map score was extremely low, only 56 percent of IWG participants agreed the topic is likely to have material impacts, and it was ranked seventh out of eight in priority.
- The topic of Community Relations tends to receive low approval rating from IWG respondents across industries and sectors. In many industries, community engagement comes through in the management of other issues, mainly environmental and social. There are only a handful of provisionally released industry standards that include community relations as a standalone issue, namely Oil & Gas – Exploration & Production, Coal Operations, and Metals & Mining.
- SASB to review whether there are any unique aspects of Community Relations that are not already captured within other environmental issues of the Waste Management industry.

Recommendation

- Likely remove, due to low heat maps score, low priority ranking, and low level of agreement.
- Final decision pending further review.

4. ENGINEERING & CONSTRUCTION SERVICES

a. Community Relations – Retain and add additional evidence of financial impact

Evidence of Interest

Heat Map Tests

The issue received a heat map score of 6 out of 100, indicating a low level of current interest expressed through a quantitative analysis of publicly available industry documents, including 10-Ks, shareholder resolutions, CSR reports, media, and SEC comment letters. For the proposed issues, this score of 6 set the industry minimum, while the maximum was 88, and the median was 69.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was eighth out of 10 issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	4	2	5	11	55%
No	0	0	1	1	5%
Maybe	5	0	3	8	40%
Total	9	2	9	20	

Comments from IWG respondents

Responses were mainly divided between “Yes” and “Maybe,” with few IWG participants responding “No.” Many participants think community relations can be important, although some think it depends on the project and jurisdiction. The main concern for several people seems to be measurability and not materiality.

Sample Comments

Stakeholder Type	Material?	Stakeholder Comment
Corporate Professional	Yes	<p><i>How a company handles local relations with communities where they are impacting says a lot about how much they understand the community and their issues. Neglecting or not handling it well early on in the conceptual design phase can hamper project success</i></p> <p>http://www.sciencedirect.com/science/article/pii/S0301479708002697</p>
Corporate Professional	Maybe	<p><i>My reservation is regarding how an investor would evaluate the disclosure relating to community relations activities. The evidence put forward regarding local hiring content in international projects to me does not fall into community relations. It is simply part of contract arrangement that all bidders have to comply with and projects are won typically on basis of cost. I just think companies will have a hard time putting forward something that an investor can evaluate and be able to compare to other investment opportunities. The value impact argument seems very weak. I do agree there should be disclosure around projects that may be very sensitive to a local community and lawsuit might cause delay to the project. I also think companies should disclose projects (international) that do not meet the construction or environmental standards of the United States.</i></p>
Corporate Professional	Maybe	<p><i>These relationships are important for the brand and reputation of the company. To explain and disseminate the objectives and characteristics of the projects conducted within these communities is an important factor to develop our activities. In cases where local supplies are consumed and employees in the area are contracted it will generate economic value and improve welfare, but I do not consider it a material aspect for achieving the project or the results of the company, as long as these Companies comply with passed laws for those regions</i></p>
Corporate Professional	Maybe	<p><i>This is an extremely broad topic area, and I do not feel that the proposed metrics function well as measurements of Community Relations. The inclusion of metrics such as non-technical delays and a general description of risks/opportunities associated with community rights and interest are highly subjective, no basis exists for standardized measurement, and it is doubtful that the resulting information would be "actionable" by investors. Furthermore, I don't know that this issue - which is extremely specific to individual real estate assets & developments - is appropriate for an investor's assessment of an overall company (i.e. portfolio owner). It would be akin to asking portfolio developers to disclose risks associated with every individual project they are undertaking as an enterprise. This is an unreasonable and unrealistic level of specificity for disclosure.</i></p>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)

Issue description from the IWG brief:

- Infrastructure construction plays a key role in the economic development of regions and communities by providing opportunities, such as improved economic efficiency, job creation, and development of institutional capacity in emerging markets. These factors can all help to improve community welfare and are often an impetus for a project's consideration. Conversely, large infrastructure projects may pose large social risks that threaten the wellbeing of local citizens and communities, which can ultimately lead to project delays or cancellations.*

- *Not only do construction and engineering companies have to avoid any sort of negative impacts on local communities, including human rights violations, but they also need to meet local stakeholders' demands, which can range from basic economic returns to benefits for the community, including employment opportunities and investment in education, training, and social programs. It is important that companies ensure the long-term livelihood of the communities in which they operate and reduce social, environmental, and cultural disruptions by engaging multiple stakeholders and operating transparently.*

Evidence from the IWG brief:

- *Companies in this industry frequently take on projects located in emerging markets where hiring local workers is often required by the government. These requirements can create issues when workers lack the skills necessary to complete large-scale projects, and may create barriers to construction. Engineering and construction companies are thus often tasked with helping to build the institutional capacity for training local workers, which provides the dual benefit of helping the construction companies complete projects and increasing regional worker productivity in the long-term. The lack of local worker capacity can present challenges for companies formulating proposals for projects in emerging markets. In its Form 10-K, Fluor Corp stated that "in many of the countries where we work, clients are requiring more local content in their projects by mandating use of in-country talent and procurement of in-country goods and services. To meet these challenges, we continue to expand our footprint in growth regions to allow us to build local relationships, such as strategic alliances with local partners. We are emphasizing local training programs...."*
- *The Three Gorges Dam project in China offers an excellent example of the large-scale social impacts infrastructure projects can have on local communities. The dam was completed in 2006, after nearly a decade of work. To make way for the reservoir, dam builders displaced thousands of communities, an estimated 1.2 to 2 million people. The majority of the displaced were uneducated farmers, forced to leave and often times settle in more expensive and less fertile locations, pushing them further into poverty and hardship. Building the reservoir made land near its bank unstable, leading to more than 5,386 hazardous sites around the area and forcing villagers to move once the reservoir reached its full height. In the future, another 100,000 people may have to be displaced. The Chinese government has admitted that it has not done enough to help the people who were forced to move. Other dam projects proposed by the Chinese government may now be in jeopardy as a result of the environmental and social concerns stemming from this project.*
- *The development of and need for large scale infrastructure projects in emerging markets is growing. The Organization for Economic Co-operation and Development (OECD) estimates that between 2010 and 2030, \$53 trillion—3.5 percent of global GDP—will be needed for large-scale infrastructure projects around the world. These projects include electricity distribution, road and rail transportation, telecommunications, and water infrastructure. An additional \$11 trillion would be needed for ports and airports. In developed nations, infrastructure investments and maintenance costs would represent roughly four percent of GDP; in less developed countries, those costs would represent closer to 10 percent of national GDP. Bank loans provided the majority of funding for infrastructure project loans. These institutions have a critical stake in ensuring that environmental and social impacts are being addressed, since they may alter project outcomes and influence the ability of borrowers to pay back loans.*
- *Financial lending institutions have a critical stake in ensuring that their borrowers are properly assessing the risks of both environmental and social issues. The Equator Principles Financial Institutions has established guidance for borrowers looking for project financing to addresses social and environmental impacts, particularly in developing markets. The financial institutions may refuse to make a loan or demand repayment if the client cannot adhere to the social guidelines within the Equator Principals. This loss of funding highlights just one of the many*

reasons a project may not be completed due to social issues, an outcome that threatens the revenue potential of the construction company working on the project.

- *The task of performing social impact assessments of large-scale projects is often the responsibility of the contractors working on the proposed project. For example, the Haut Commissariat à l'Aménagement de la Vallée du Niger mandated that AECOM, an engineering services company, conduct both an environmental and social impact assessment on a proposed dam project in Niger. As part of the assessment, the company must propose a resettlement plan for 42,000 people who would be affected by the reservoir. The assessments also help the project comply with the African Development Bank's requests for environmental and social management plans.*

Analysis

- Evidence of interest occurring on a systematic basis (i.e., across a company or the industry's entire portfolio of projects) is low, which is further corroborated by the low heat map score of 6. However, public interest, and potentially investor interest, in large-scale, high-risk projects can be extremely high.
- Evidence of financial impact generally occurs in two forms, 1) ensuring the company has the abilities and specific proposals for the relevant project to meet minimum standards expected by project owners or financiers (e.g. the Equator Principles), and 2) the potentially significant negative impact of large, headline, high-risk projects that are strongly opposed by local communities.
- SASB considered the following key questions:
 - Is their dependence on the basic social license to operate likely to create material risks and opportunities for companies in the industry, either through chronic, long-term impacts or acute, high-magnitude impacts?
 - Can companies be held responsible for unanticipated community costs, such as relocation, that are associated with certain types of infrastructure projects?
 - What percentage of loaned funds for construction and engineering projects are covered under the Equator Principles?
 - How significant is the risk of projects being discontinued or delayed due to community opposition and how significant will the financial impact be to the company in such situations?
 - What are the co-benefits to company value of providing shared value services to local communities that enhance their socio-economic wellbeing?
 - What are best practices in the industry, or outside it, for stakeholder engagement? Are there useful standards for this and how widely are they used?
- Some companies appear to be taking steps to proactively build their social license to operate. For example, Fluor reports that it provides craft skills training to local South Africans. More than 30,000 individuals have been trained and have secured employment.
- Relocation and other costs associated with infrastructure projects such as dams are generally borne by governments rather than companies. However, companies may still seek to minimize such costs to maintain a positive relationship with their client.
- Eighty financial institutions in 35 countries have officially adopted the Equator Principles, covering over 70 percent of international project finance debt in emerging markets. Some of these financial institutions may consider community relations to be material. For example, Shawn Miller, managing director of environmental and social risk management at Citi, reports that the most difficult infrastructure projects that Citi evaluates "involve social issues, such as community opposition, which can prove very costly in the long run."
- Community opposition to infrastructure projects can have a significant negative impact. For example, opposition to the construction of a wastewater treatment facility in Thailand's Klong Dan led to the suspension of the project and a \$1.27 billion reduction in the value of economic benefits attributed to the project, making it no longer economically viable under its original assumptions. In

Bolivia, a broad coalition organized in response to the government’s \$2.5 billion, 40-year concession to a Bechtel subsidiary for the provision of water services. The contract became no longer politically viable in the face of civil unrest and Bechtel sought more than \$25 million in damages and lost profits but had to abandon its claim in exchange for a token settlement. In India, opposition to the construction of the Sardar Sarovar Dam played an important role in the World Bank’s decision to pull funding from the project in 1993, although construction has continued.

- On the other hand, recognizing risks, addressing risks, and protecting the entitlements of affected people can positively affect the outcome of infrastructure projects. For example, Hamersley Iron Pty Limited and the Gumala Aboriginal Corporation agreed to a Memorandum of Understanding regarding the company’s plan to develop an iron ore mine and railway in Australia that reduced permitting time and allowed Hamersley to complete construction under budget by \$100 million and to commence production six months earlier.
- There may be cost savings for a company from using local workers. Using local labor to construct gravel roads was found to be 25 to 30 percent cheaper than the capital-intensive alternative and to create up to five times the employment for the same investment.

Recommendation

- Retain issue and add new evidence of financial impact, principally examples of community opposition to infrastructure projects leading to delays and increased costs.

b. Workforce Diversity & Inclusion – Drop

Evidence of Interest

Heat Map Tests

The issue received a heat map score of 33 out of 100, indicating a moderate-to-low level of interest. For the proposed issues, the minimum was 6, the maximum was 88, and the median was 69.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was 10th out of 10 issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	4	2	5	11	55%
No	2	0	0	2	10%
Maybe	3	0	4	7	35%
Total	9	2	9	20	

Comments from IWG respondents

Only a slight majority of responses (55%) stated that the issue is likely material, while 35% stated, “Yes, but with reservations.” Several participants who expressed reservations were concerned about the lack of value impact of workforce diversity and uncertain about the benefit to investors of disclosure. However, most participants think the issue is important.

Sample Comments

Stakeholder Type	Material?	Stakeholder Comment
Market Participant	Maybe	<i>Diversity and social inclusion are material factors for our stakeholders; particularly, this aspect is ranked 15th on our list of material issues and we firmly believe in the enriching aspect of having a multicultural workforce. Having said this, we also believe it is not a prerequisite for the achievement and success of a project.</i>
Corporate Professional	Maybe	<i>We get asked about it on some contract prequal documents; however, not to the extent that it has a material impact on the business. Although it is important from the stand point of company culture, most customers, including public entities, are not concerned about it.</i>
Corporate Professional	Maybe	<i>This is far too complex and not directional as it relates to data specific for the investor community. This will also be influenced greatly by the union based trades represented in the building segments which is not influenced by the companies investors are associated.</i>
Public Interest	Maybe	<i>Diversity may be important but it is challenging to tie this to financial impact</i>
Public Interest	Maybe	<i>The challenge in engineering industry is not diversity but lack of getting these bright people to work in E/C industry when they can make more money in banking or tech industry. Most of the global engineering firms meet the diversity test by the fact that they operate around the globe and have significant presence. I am a big supporter of Diversity and Inclusion and believe it is important but struggle to see the value of disclosure to an investor. Again, the value impact has no quantifiable substance for an investor or potential investor.</i>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)

Issue description from the IWG brief:

- *Developing a broad base of employees who are valued, respected, and supported throughout an organization is essential for the long-term growth prospects of companies in this industry. The industry relies on human capital in the form of engineering, architecture, consulting, and skilled labor professionals. These professionals provide the knowledge, advice, problem solving skills, and other various technical skills that generate company revenues.*
- *Enhancing both gender and ethnic workforce diversity, particularly among management positions, is likely an essential component of attracting and developing the best talent. However, an increase in diversity alone may not improve a company's performance; instead it should be combined with improved employee engagement, fair treatment, equal levels of pay, and advancement opportunities for all workers. These factors may be necessary to increase productivity and performance while reducing the risk for discrimination lawsuits throughout all levels of a company.*
- *Promoting diversity and inclusion at all levels of an organization may provide multiple benefits within a company. These could include improving its ability to attract and retain the best talent, but also potentially creating competitive advantage by better appealing to new business, generating new ideas, and meeting the needs of diverse, often international, clients. Additionally, diversity may be a powerful antidote to potentially discriminatory practices that may result from a uniform or non-inclusive workforce.*

Evidence from the IWG brief:

- *The inability to retain and attract key employees pose potential material risks to companies in this industry, particularly as employees are highly mobile, and able to transfer skills and knowledge from one company to another relatively easily. Companies like Jacobs Engineering Group, Fluor Corp, and KBR Inc. recognize the potential material risks of retaining and attracting key employees in their Form 10-K. Specifically, Jacobs Engineering Group states that “[t]he success of our business is dependent upon our ability to hire, retain, and utilize qualified personnel, including engineers, architects, designers, craft personnel, and corporate management professionals who have the required experience and expertise... In certain geographic areas, for example, we may not be able to satisfy the demand for our services because of our inability to successfully hire and retain qualified personnel” and that “[o]ur continued success is dependent upon our ability to hire, retain, and utilize qualified personnel.”*
- *Diversity and inclusion lead to better team performance and are correlated with better corporate performance. A recent Mercer study on women’s progress in the engineering, design, and construction industry found that female representation declines between entry level and mid and senior levels, and that there is little or no female representation at the board or executive levels, suggesting the industry as a whole could do better. The report highlighted two benefits of diversity in the industry: Employers who are seen as valuing diversity throughout the organization may be better able to attract emerging talent by sending the message that all employees are valued within an organization. Additionally, diversity could help companies better meet the needs of a diverse set of clients and communities in which they interact, by offering unique diverse perspectives, skills, and backgrounds.*
- *As a company’s competitive advantage is driven largely by the development of long term relationships and the ability to understand the needs of a diverse set of clients, attracting and retaining a diverse set of qualified employees is a critical issue, particularly for companies managing projects abroad. Jacobs Engineering Group takes a “multi-domestic” and “boundaryless” approach to meeting needs of a diverse set of clients located around the world. “[o]ur diversity encompasses our people, geographic reach, expertise, and technical capabilities.” The company utilizes talent from all over the world to meet client demands, which “enhances our ability to develop the best possible solutions for our clients, regardless of office or project location.”*
- *Engraining diversity and inclusion into the culture of a company can also help it avoid discriminatory practices, which can have potential material repercussions through fines and tarnished reputations. For example, Fort Myers Construction Corp settled a gender and ethnic discrimination lawsuit for \$900,000. It was found that the company discriminated against 27 qualified female applicants and 136 qualified African American applicants, and that the company unfairly assigned workers to projects that resulted in lower pay despite equal qualifications.*

Analysis

- Evidence of interest in workforce recruitment and retention is strong, but significantly less so in terms of diversity. In increasing number of disclosures and studies on diversity in the industry, specifically as it applies to engineers and other highly specialized occupations, is increasing but does not appear to be uniformly high, especially among the investor community. The relatively low heat map score of 33 further corroborates this.
- Evidence of financial impact is challenging to assess, as the majority of financial impact is likely to be intangible. A limited number of industry or academic studies provide a basis for diversity in the industry’s connection with value. Notable exceptions include requirements around a minimum number of government contracts being awarded to minority- or woman-owned businesses, and litigation.
- SASB considered the following key questions:
 - How diverse are engineering and construction companies? How does this compare to workforce diversity in other sectors?
 - Can we quantify the benefit of workforce diversity in the industry?

- Do any companies have notable programs to increase diversity?
- Do more diverse companies have a better chance at winning government contracts? Or does this only apply to women- and minority-owned businesses?
- Are government and other customer contracts increasingly including diversity considerations in pre-qualification and bidding processes?
- Are there examples of frequent or high-magnitude discrimination lawsuits?
- Because projects are often international, does a more diverse workforce and management better enable the potential for successful bids and project execution?
- The engineering and construction services industry is dominated by men. Fourteen percent of U.S. engineers and less than three percent of U.S. construction workers are women. According to the Society of Women Engineers, one in four female engineers leave the field after age 30, compared to only one in 10 male engineers. Nevertheless, women's earnings in the construction industry are 92.2 percent of men's while their earnings across all industries are 80.2 percent of men's.
- Evidence on the financial benefits of gender diversity is mixed. Research by McKinsey and Catalyst suggests that companies with more women at the board level are typically more profitable.
- Various government agencies set diversity goals for their contracting. For example, The Port Authority of New York and New Jersey has a goal of awarding 12 percent of contracts to minority-owned businesses and 5 percent to women-owned businesses. At the federal level, In the 20 years since the U.S. Congress set of goal of awarding five percent of contracts to women-owned small businesses, it has never met this target.
- A 2011 executive order requires companies with a federal contract worth more than \$50,000 or that have more than 50 employees to implement a written affirmative action plan.
- There was no evidence of contracts including diversity considerations in pre-qualification and bidding processes, of a more diverse workforce improving relationships with regulators, or of companies including diversity mandates at the subcontractor level. However, companies such as Fluor, Tutor Perini, and Black & Veatch report that they encourage diverse suppliers to contact them.

Recommendation

- Drop issue based on lack of investor interest and a clear, systematic connection to financial impact in the industry.

5. REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS

- a. **Managing Environmental & Socioeconomic Impacts of Properties** – Remove generalized form of issue, include underlying issues, as appropriate

Evidence of Interest

Heat Map Tests

The issue did not receive a score as it did not map to an issue captured by the existing set of keywords.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was second out of three issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	11	5	11	27	63%
No	2	0	0	2	5%
Maybe	9	2	3	14	33%
Total	22	7	14	43	

Comments from IWG respondents

The relatively high percentage of “Maybe” responses on this issue is telling. As presented to the IWG, this issue was highly general, in that it was a combination of multiple environmental and socioeconomic impact angles. The need to disaggregate this issue into these multiple angles, then evaluate each one separately was made clear through the IWG comments. Some feedback was helpful in directing SASB toward the more relevant and impactful angles, while other comments were highly critical of the simplistic approach that the issue (and metrics) took in addressing complex themes around urbanization and transportation. Additionally, many comments were directed toward the inadequate differentiation between how these angles affect various property asset classes in fundamentally different ways.

Sample Comments

Stakeholder Type	Material?	Stakeholder Comment
Corporate Professional	Yes	<p><i>Managing environmental and socioeconomic impacts of properties is critical from an ESG perspective, however it is much more complex than is portrayed in the research brief. It is not relevant to simply count the number of TOD projects or access to public transportation. It would be better to look at a broader set of risks and benefits to society from a socioeconomic perspective such as upgrading transportation and utility infrastructure, job creation, installation of renewable energy as a broader community benefit (minimizing GHG emissions, helping support state RPS, or utility programs).</i></p>
Corporate Professional	Maybe	<ul style="list-style-type: none"> • <i>SASB’s treatment of how real estate firms manage “environmental and socioeconomic impacts of properties” is overly simple and less relevant for retail real estate firms, some thoughts that came to my mind that were not discussed:</i> <ul style="list-style-type: none"> o <i>Challenges posed by redeveloping and financing infill properties that may have prior contamination and require remediation pursuant to complex brownfields laws and state voluntary clean-up programs;</i> o <i>The costs and availability of urban land sites, especially in areas with designated urban growth boundaries, and difficulties in assembling parcels for infill development in light of eminent domain requirements</i>
Corporate Professional	Maybe	<p><i>1. The description for this disclosure was very focused on urban sites, housing, and traditional “core urban property types that would be part of a TOD scheme. Many property types are not typically included in TOD schemes. 2. Some property types may in fact be more sustainable when located outside dense urban areas (e.g., industrial properties which are more sustainable when located to optimize efficient movement of goods through the supply chain. This can apply to other property types as well such as data centers, self storage, etc. 3. Access to public transportation may be outside the control of the property owner (and may be of limited value for certain property types as mentioned above).</i></p>
Corporate Professional	No	<p><i>Although the concept of maximizing alternative transportation modes is credible in some cases - metro areas, asset types like residential, office, not all sectors of the real estate market are focused on the urbanization trends. Medical is not consolidating around metro areas, but are moving assets beyond the normal means of public transportation. This subject is relevant to only certain asset types.</i></p>

Evidence of Financial Impact

Initial SASB Research (Excerpts from Industry Research Brief for IWG)

Issue description from the IWG brief:

- *Increasing global urbanization may represent various risks and opportunities to companies in the REODIT industry. These companies can manage the environmental and socioeconomic impacts of their properties through decisions made in the planning, development, and investment stages of real estate value creation. Innovative decisions around buildings and infrastructure planning and construction can provide social and economic benefits to local communities while driving value for real estate owners and investors. Moreover, while the density of urban areas reduces per-person GHG emissions, companies can manage already dense areas by maximizing the utilization of public transportation, contributing to further emissions reductions. As the urban population continues to increase, development of properties close to public transportation infrastructure is increasingly relevant to the end users.*

- *Moreover, continuing urbanization has resulted in a drastic competition for space in large cities such as New York and San Francisco, where expansion is constrained by land availability. Population growth and new business growth are outpacing construction, which increases rental prices for residential and office space at accelerated rate.*
- *Developing buildings with smaller apartments but larger amenity spaces may allow REODIT companies to keep rents more affordable to a larger segment of population. At the same time, some companies may change their rental models to increase the efficiency of space utilization.*
- *As most of the companies in the industry develop new properties with the intention of long-term ownership and cash-flow generation, rather than reselling them for a profit, the factors mentioned above are likely to present opportunities to strengthen FFO, increase property values, and ensure higher occupancy rates. By improving areas in which REODIT operate their properties, companies create positive socioeconomic externalities, which, in turn, directly impact return on investment (ROI).*

Evidence from the IWG brief:

- *In the U.S., urbanization continues to outpace overall population growth, at 12.1 percent versus 9.7 percent over the 2000–2010 period. According to the World Bank, 81 percent of the U.S. population lived in urban areas in 2013. Seven of the 10 most densely populated areas of the U.S. are in California, which explains the geographic location of REODITs’ portfolios of properties.*
- *Studies show that urbanization in itself has positive environmental impacts. Lower space usage results in lower per-person GHG emissions. Transportation emissions are reduced with increased walkability and access to public transportation. Moreover, a reduced amount of land used per person preserves more green spaces that store carbon.*
- *At the same time, urbanization may present companies in the industry with various challenges. Competition for space and accessibility to public transportation may help real estate owners that manage the environmental and socioeconomic impacts of their properties to maximize their value. The increasing use of public transportation in the U.S. indicates the growing importance of the issue.*
- *According to the American Public Transportation Association, public transportation use in the U.S. increased by 37.2 percent between 1995 and 2013, while the overall population grew by 20.3 percent. Having a much lower environmental impact per passenger than automobile transportation, public transportation presents significant opportunities for GHG reductions. As global climate change regulations and opportunities to reduce CO2 emissions continue to evolve, public policies are likely to encourage the use of public transportation. U.S. agencies that encourage public transportation—such as the Federal Transit Administration (FTA), which already spends \$10 billion annually on various programs to develop public transportation—are likely to grow in influence.*
- *Properties in close proximity to effective public transportation will likely have higher demand from tenants and therefore lower vacancy rates. Studies show that individuals are willing to pay more for properties located within walking distance to jobs and public transit. Home buyers pay 4.1 to 14.9 percent more for housing in those areas after controlling for other housing characteristics. Studies by the Center for Transit Oriented Development found that office and retail spaces experience the highest increase in value from their proximity to transit. For residential properties, the “transit premiums” ranged from 2 to 32 percent for single-family dwellings, 2 to 18 percent for condominiums, and 4 to 45 percent for apartments. Interestingly, premiums for retail and office space in walkable urban areas increased following the 2008 recession from 23 percent in 2000–2007 to 44.3 percent in 2008–2010. Moreover, having a portfolio of properties located in proximity to transit provides REITs with better downside protection. Studies show that the decline in value of these properties during the 2006–2011 period was less severe than that of properties in nontransit areas, and they outperformed the region as a whole by 41.6 percent.*

- *Companies in the industry generally recognize these trends and their resulting financial implications. For example, AvalonBay Communities, Equity Residential, and other companies in the apartment REIT segment focus their development strategies on properties in urban areas that are pedestrian-friendly and close to public transit. Equity Residential uses such metrics as a building's "Walk Score" in assessing residents' ability to walk to jobs, recreation, retailers, and public transportation. The company also partnered with Zipcar to provide on-site car sharing at more than 50 of its properties. Access to public transportation and car-sharing services not only provides economic benefits to the community by reducing the need for car ownership but also reduces GHG emissions. According to studies, a one-point increase in Walk Score (which is measured on the scale of 0 to 100) increases the value of a typical home between \$700 and \$3,000, with all other factors kept equal.*
- *Demand for affordable housing in the U.S. significantly outpaces supply. According to a Harvard study, more than a one-third of U.S. households pay more than 30 percent of their income for housing, and 28 percent of renters pay more than half of their income for housing. Even though construction of multifamily houses is on the rise, most of the new units are on the higher end of rental rates, which makes them unaffordable to the low-income population.*
- *Changes in demographics and lifestyle may suggest that demand for smaller apartments is likely to increase in the long term. Studies show that single-person households account for 27.4 percent of the U.S. population, the highest rate in history. In Atlanta, Denver, Seattle, San Francisco, and Minneapolis, at least 40 percent of households are single-person households. In Manhattan the percentage of such households is 46.3 percent, and it's 76 percent for households with one or two people.*

Analysis

- SASB considered the following key questions:
 - What are all of the individual environmental and socioeconomic impact angles embedded in this issue that should be evaluated individually?
 - Of these angles, SASB should apply its normal issue evaluation framework, including evidence of financial impact and evidence of investor interest; particular attention should be paid to how angles may systematically apply to the multiple property asset classes—a particular challenge in the development of industry standards.
 - What are the variations in operational control that REITs have, and is this determined by property type, management strategy, or other?
 - How applicable are pre-existing sustainability standards and metrics used by the industry, including EPA Portfolio Manager, GRESB, ULI Greenprint, LEED (i.e., potential for metrics alignment)?
 - The industry raised strong concerns over any reference to, incorporation of, or utilization of real estate certification programs (e.g., LEED, Energy Star, Green Globes, etc.)—how valid are industry concerns related to such certification programs?
- Possible elements of issue include:
 - Site selection/property location:
 - Access to services, transportation, economic centers and overall connectivity
 - Impacts of transportation or infrastructure requirements to/from site
 - Proximity relative to customer
 - Brownfield remediation
 - Greenfield impacts
 - Design and strategy to interact with tenants and/or community:
 - Health impacts on tenants and/or community
 - Indoor environmental quality
 - Compliance with building codes
 - Affordable housing

- Community/tenant engagement and relations
 - Impact on local economies (jobs, infrastructure, etc.)
 - Space utilization
- SASB's analysis, based on additional research and thorough consultations with the industry and investors indicated that the following issues are most consistent with the SASB approach and mission:
 - Design for Tenant Health/Indoor Air Quality/Building Materials:
 - Angle: Real estate design and materials selection, including the resulting indoor air quality and occupant experience, is increasingly linked to overall occupant health. As a result, tenants are increasingly aware of this issue, driving owners' awareness and efforts to improve it, invest in it, and measure it, with the intended outcome of improving tenant health, creating a competitive advantage, increasing tenant demand (rents and occupancy rates), and reducing the risk of a competitive disadvantage or violations of evolving building codes.
 - Three IWG participants suggested this issue.
 - Numerous individuals (corporations and market participants) recommended the inclusion of this issue during follow-up consultations, largely due to the industry consensus that this is already a significant industry issue and it is widely expected to become the next dominant sustainability-related frontier in the industry.
 - The following IWG comment (and the contributing participant, through follow-up feedback) was helpful in clarifying this issue: "... the issue of health and wellness is rapidly emerging as a significant business opportunity and risk for real estate portfolios ... market participants are looking for new ways to differentiate their properties and companies. Health and wellness represent a compelling opportunity. In the US, health care-related expenses represent a significantly larger expense than energy, and these expenses are growing more rapidly than energy. This means that properties that can provide a superior platform for the promotion of health have the opportunity to command premiums. Conversely, properties without health-promoting attributes are likely to be discounted and face business risks." (See above for full comment.)
 - Connectivity of Properties
 - Angle: The modes and comprehensiveness of transportation to and from property sites, including the proximity to tenants (or tenants' customers), services, and economic/commercial activity has significant sustainability implications, and are connected to portfolio risk and return.
 - Evidence supports the concept that highly "connected" office, residential, and retail properties have generally appreciated faster and have demonstrated more resiliency, but come with a cost premium ("walkability premium," "transit premium," etc.). Thus, such assets carry a lower cap rate that indicates that the income generation of these more connected properties will be lower, at least initially, in exchange for higher expected appreciation and less risk.
 - Are these "connectivity premiums" appropriately priced in by equity REIT investors?
 - If not, is it because disclosure on the issue is inadequate?
 - Many researchers believe this premium will continue to increase (at least partially driven by sustainability issues).
 - Overall, is this an appropriate issue for SASB to address and could we add value here through standardizing disclosure?
 - Management of Tenant Impacts
 - Angle: Companies in the industry own assets (property) that are utilized by their customers (tenants), who in turn produce a variety of sustainability impacts. How

real estate owners structure their agreements and relationships with tenants (e.g., addressing “split incentives”) is instrumental in effectively managing such sustainability impacts, many of which have significant direct and indirect financial impacts for both the owner and tenant.

- IWG feedback and follow-up consultations with the industry and investors highlight the critical nature of structuring leases and relationships with tenants in order to mitigate the split incentives problem, thereby improving sustainability and financial outcomes for both the owner and tenant.
- Additional research on this issue continually indicated its critical nature, which was further supported by industry initiatives to improve outcomes. Examples include:
 - Institute for Market Transformation: Green Lease Leader (and standards)
 - Tenant Star legislation (recently signed into federal law)
 - GRESB survey that explicitly measures participant efforts to address the issue, for example:
 - 43 percent of participants include sustainability-specific requirements in their standard lease contracts;
 - 77 percent of these include clauses requiring sharing of utility data
 - 38 percent have mutual environmental performance targets in place
 - 26 percent include a cost recovery clause for energy efficiency-related capital improvements
- Additional research indicated that the following angles (previously part of the “Managing Environmental & Socioeconomic Impacts of Properties” issue) are not likely to be systematically important across the industry and/or have significant financial impacts:
 - Design and strategy to interact with community;
 - Health impacts on community: health impacts on tenants appear to be important, but limited evidence supporting the magnitude of impact a single REIT may have;
 - Community engagement and relations: tenant engagement and relations are key, and community relations is very important for development activities, but less so for long-term ownership;
 - Affordable housing: often mandated by local code and thus built into the financial analysis of property investment decisions, but not a clear value impact aside from this;
 - Impact on local economies (jobs, infrastructure, etc.): magnitude of impact of a single REIT may be limited, especially to a degree that is then likely to have a value impact (more relevant for development activities);
 - Space utilization: not systematically important, a very niche segment in a few markets and property types.

Recommendation

- Remove generalized form of issue (“Managing Environmental & Socioeconomic Impacts of Properties”) based on the overly general nature of it and a need to focus on the disaggregated components of it. Likely recommend, pending further review, the following three topics as standalone issues (issue names may require further revision):
 - Design for Tenant Health
 - Connectivity of Properties
 - Management of Tenant Impacts

II. Strong Issues with Reservations

This section focuses on issues where a majority of IWG participants agreed that the issue is likely to constitute material information for companies in the industry, but some had reservations (around 75 percent of participants typically agreed that the issues are likely to constitute material information or they agreed but with some reservations). Feedback on issues in this section was generally more positive than those issues presented in Section I. For such issues, SASB evaluated the **specific IWG comments** and the strength of the initial evidence of financial impact to determine whether any changes were required. An **analysis** of all evidence is provided, together with a final **recommendation** for retaining or removing the issue or any changes to be made.

1. ELECTRIC UTILITIES

a. Land Use & Community Relations – Retain

Evidence of Interest

Heat Map Tests

The issue received a score of 46 out of 100, which indicates a moderate level of interest. For the proposed issues, the minimum was 46, the maximum was 96, and the median was 75.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was eighth out of eight issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	10	7	17	34	77%
No	0	1	2	3	7%
Maybe	0	2	5	7	16%
Total	10	10	24	44	

Comments from IWG respondents

The “Yes” percentage for this topic was 77 percent, which is above 75 percent, however three participants responded “No.” Main concerns were regarding metrics and whether this is still an area of concern for the industry since they have been managing it for so long.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Public Interest	Maybe	<i>Suggested metric seem to narrow compared to the topic. Also seems to only address new projects; should also consider on-going impacts and community engagement throughout the life cycle of facilities.</i>
Public Interest	Maybe	<i>These have been seminal issues for electric utilities since the beginning. The management and experience should be in place to understand and manage these risks.</i>
Public Interest	No	<i>In reviewing the relevant points associated with this topic included within the electric utilities brief, I am still not confident that I recognize the value proposition of this topic. While I concur that land use & community relations would drive significant costs as part of the needed capital investment in infrastructure, I am curious to the metrics that could be established associated with this costs. The comparability of identifying incremental costs with a NIMBY attitude by local rate payers could be highly subjective and drive difficulties in comparability. Further, I am not sure of the metrics that would be used to evaluate the benefit gleaned from these types of disclosure.</i>
Public Interest	No	<i>A utility with a strong stakeholder engagement program will not have large problems with these issues. Some large utilities have recreational facilities and other resources that are very attractive to the local communities.</i>

Analysis

- While the heat map score was below median and IWG respondents ranked the topic lowest in priority, more than three-quarters of the 44 IWG participants agreed that Land Use & Community Relations is likely to have a bearing on company financial performance.
- There was general agreement on the significance of this issue, the main concerns were regarding comparability of metrics and whether they would be able to capture performance. Some pointed out that this has been an issue for the industry from the beginning and that larger companies should be capable of managing this issue.
- SASB further considered the following key questions:
 - Are there standards for best practices for stakeholder engagement?
 - How widespread is community resistance to electric utilities' land use? How widespread is opposition to the use of eminent domain?
 - What is the impact on communities of electric utilities' use of eminent domain (e.g., resettlement, loss of employment)?
 - How much does the presence of power lines or nearby power plants lower property values?
- There are some standards such as the ISO Guidance for Social Responsibility and AccountAbility Stakeholder Engagement Standard. However, comparison between engagement efforts may be difficult due to the diversity of issues, actors, and circumstances. Outcome-based disclosure maybe better as it is directly linked to financial impact.
- There are many instances of community resistance to proposed transmission and distribution lines. These can lead to project delays and additional costs to the company from delays and rerouting.
- There are various estimates of loss of property value due to the presence of power lines and power plants—between 10 and 30 percent.

Recommendation

- Retain issue, due to moderate level of interest and majority agreement on likely materiality of topic.

- Refine metrics, and add to discussion in industry brief around importance of community relations for ongoing operations.

b. Downstream Energy Stewardship – Retain

Evidence of Interest

Heat Map Tests

The issue received a score of 96 out of 100, making it a top quartile issue. The industry minimum was 46, the maximum was 96, and the median was 75.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was seventh out of eight issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	7	8	19	34	77%
No	1	0	2	3	7%
Maybe	2	2	3	7	16%
Total	10	10	24	44	

Comments from IWG respondents

Only 7 percent of IWG participants responded “No,” and a vast majority (77 percent) said “Yes.” There were some concerns about applicability across industry players, some of whom are pure-play generators and others pure-play transmitters. Others commented that the topic would yield material information for some, like those with grids that are stressed by peak demand, but not for others. There was acknowledgement that this issue is likely to be managed differently by utilities under the various regulatory environments, for example those in decoupled states versus not.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Market Participant	Maybe	<i>I believe some of the risks associated with not managing downstream would actually be acknowledged in the risks section of an MD&A. This one I can agree with being material in some cases, but not all. It just doesn't seem like a strong enough topic to deem disclosure in all 10-Ks, You are assuming not only is the utility trying to reduce GHG, but also they are approaching it from an energy efficiency perspective.</i>
Public Interest	Maybe	<i>Downstream energy management is important mostly for grids that are stressed by peak demand. This is something that may be very important for certain grids but not so important for others. It should be included nevertheless.</i>
Public Interest	Maybe	<i>Depends on progress of state in decoupling consumption with revenue, and also weather patterns that may limit extent to which end users can vary their behaviour.</i>
Public Interest	No	<i>Downstream Energy Management is rarely regulated. Typically voluntary. Although there is an ability to influence there no strong direct financial link back to shareholder value creation.</i>

Analysis

- Despite a high heat map score and high overall agreement by IWG participants on likely materiality of impacts related to the topic, the issue ranked second lowest in priority.

- Current evidence in the brief shows that energy efficiency measures are prioritized by public utility commissions over building new generation or transmission facilities. Demand-response programs have been found to increase transmission efficiency and can also reduce O&M costs and reduce transformer overloads.
- Based on IWG comments, SASB investigated the following questions further:
 - The brief mainly talks about the costs of investing in energy efficiency for the company; can the benefits (e.g., cost savings for the company and/or the consumer) be quantified?
 - How widespread is the use of smart metering and/or demand-response programs?
 - What are companies doing to promote decoupling measures?
- Households and companies both can benefit financially through energy efficiency measures, particularly in decoupled states. Decoupling is generally up to the rate board. It is preferred by utilities as it provides a more predictable revenue stream, which is aligned with investor interest.
- A call with the California Public Utility Commission (CPUC) confirmed the importance of utilities focusing on these grid management issues, although, for many expensive upgrades to be financially feasible the utilities must operate in supportive states.

Recommendation

- Retain issue due to high heat map score and high level of agreement from IWG participants.
- Add to issue description and evidence how this issue would affect different pure-play companies in the industry.

2. GAS UTILITIES

a. Health, Safety & Emergency Management – Retain

Evidence of Interest

Heat Map Tests

The issue received a score of 71 out of 100, placing it in the top quartile. Of the proposed topics, the minimum was 25, the maximum was 83, and the median was 73.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was first out of four issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	2	2	5	9	75%
No	0	0	0	0	0%
Maybe	3	0	0	3	25%
Total	5	2	5	12	

Comments from IWG respondents

The topic received 75 percent agreement. Although three respondents expressed concern about the likelihood of this disclosure containing material information, concerns were related to the reporting requirements.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Corporate Professional	Maybe	<i>Corrective action may include administrative requests and could be interpreted falsely</i>
Corporate Professional	Maybe	<i>I don't have reservations with the topic in general. My reservation is with one of the proposed disclosure standards.</i>
Corporate Professional	Maybe	<i>I think this is an issue of timing. Due to PHMSA requirements in recent years, the PIPES Act, etc, most utilities already disclose impacts from pipe safety in their risk factors due to the financial impacts of compliance with TRIMP and DIMP programs, the necessary measures to identify and track maximum allowable operating pressure (MAOP), the requirements bestowed upon utilities by their state regulators, etc. In addition, significant expenditures and programs with regard to gas infrastructure replacement programs have been incurred and implemented. It is not to say that this is not still ongoing; however, significant impacts to O&M and cash flow and related cost risks have been part of disclosures. Additionally, measures taken to receive regulated rates, protections between rate cases, etc. have been part of MD&A discussions. Further, regulatory assets, their recovery, return, etc. associated with these and other programs already provide the investor with valuable information regarding the impacts of these programs. Further, the FASB and SEC rules related to disclosure expect investors to understand the industry of the companies they are investing in. With all of the publicly available information on gas infrastructure programs, news events for incidents, etc., investors understand and are expected to understand the overall environment with regard to safety and emergency programs. I think that naturally companies have done a fair job of describing impacts to liquidity and future prospects for the same with regard to what the investor can expect from safety programs and compliance related thereto.</i>

Analysis

- None of the IWG participants responded “No” when asked about the likelihood of material impacts related to the topic. The issue was ranked highest in priority among the four proposed disclosure topics.
- Initial evidence indicates that gas distribution line accidents result in casualties and millions in damages—between 2004 and 2014, they have resulted in more than 120 deaths, and were responsible for more than \$775 million in damages. In the past, companies have been fined for negligence and required to improve safety measures. The costs of improvements are sometimes allowed to be passed to ratepayers (customers).
- SASB considered the following key questions:
 - Across the U.S., what percentage of pipes are older, unprotected steel and cast iron?
 - What are the best technologies and practices to manage the risk of accidents?
 - Do some companies have better safety records than others? Is there a difference in the safety records of public vs. state-owned companies and if so, why?
 - Does whether a utility is allowed to pass fines along to their customers depend on its degree of culpability?
 - What are the consequences of improperly odorizing gas?
 - Do PUCs usually see infrastructure upgrades as being in the best interest of the ratepayers (which allows the utility to recover its upgrade costs), or has there been pushback?
- About six percent of natural gas distribution network is made of cast iron and bare steel pipes, which have a great chance of leaking. Frequent leak inspection and replacing aging pipes are

effective methods to reduce leaks and the chances of accidents. Improperly odorizing gas can lead to undetected leaks and increases the potential for serious accidents. There are federal and state requirements on the frequency of inspection, but companies may choose to go beyond compliance in order to mitigate risk. Fines may or may not be passed on to ratepayers and so can impact shareholder value. Public Utility Commissions can require utilities to make capital upgrades, and the amount of capital expenditure that utilities can pass onto the ratepayers may be capped.

Recommendation

- Retain topic due to evidenced cost to communities and the gas companies from mismanaging the issue. Additionally, the issue received high heat map score, and high priority ranking and high level of agreement from IWG participants.
- Continue exploring channels of financial impact

b. Management of the Legal & Regulatory Environment – Retain, pending further research

Evidence of Interest

Heat Map Tests

The issue received a score of 83 out of 100, placing it in the top quartile. Of the proposed topics, the minimum was 25, the maximum was 83, and the median was 73.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was second out of four issues.

Issue materiality

	Corporate Professional	Market Participant	Intermediary	Total	Percent of Total
Yes	4	1	4	9	75%
No	0	0	1	1	8%
Maybe	1	1	0	2	17%
Total	5	2	5	12	

Comments from IWG respondents

The topic received 75 percent agreement from IWG respondents, with only one individual disagreeing. There is consensus that the regulatory environment is critical to utilities’ future, however the main concern is appropriate comparable disclosure.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Public Interest	No	<i>In reviewing the relevant points associated with this topic included within the gas utilities brief, I am still not confident that I recognize the value proposition of this topic. While I concur that how a gas utility manages its legal and regulatory environment is critical to its future success, I am concerned regarding the applicability and relevance of the metrics.</i>
Public Interest	Yes	<i>The regulatory environment is the most primary factor in a utility's financial and operational performance, yet I struggle with how to effectively and objectively measure this relationship. I think the current KPI is not an accurate reflection of the relationship at all.</i> <i>The research brief details the reality of how a changing PUC's board composition can have a significant and immediate change on the operating environment.</i>
Market Participant	Maybe	<i>Given the state by state differences in regulators, and that some companies operate in many states I just think comparing this information is challenging.</i>
Corporate Professional	Maybe	<i>Public natural gas utility companies do participate in a robust legal & regulatory environment - from a safety perspective, a ratemaking perspective, from a perspective that a regulator has final say on what costs are recoverable and which are subject to disallowance, etc. And, as responded to earlier, investors are expected by the SEC and the FASB to understand the industry in which their targeted investment participates. I believe companies have done a reasonable job explaining the nature of their operations, the risks of their environment, the impacts of their regulation, the impacts of regulatory lag and the actions of the regulator, and cautioning on future actions. While the impacts of overriding regulation is pervasive in our industry's operations, I am not aware of a significant number of cases where investors felt there was material information missing from public filings, or from the public view in general, preventing them from understanding the environment with respect to target companies in our industry.</i>

Analysis

- Evidence of interest in this topic is strong. The topic received a high heat map score and was ranked second in priority out of four suggested topics during IWG.
- The “Yes” percentage was at 75 percent, indicating high level of agreement. Even among those who did not respond “Yes,” there was consensus that the regulatory environment is critical to utilities’ future, and appropriate comparable disclosure was the main concern.
- Fines for violations are significant, but other associated losses may be greater. In a recent case, a utility was fined \$1 million and was denied certain rate increases that had an estimated worth of up to \$400 million in lost revenue.

Recommendation

- Retain topic due to high heat map score, and high priority ranking and high level of agreement from IWG participants.
- Continue to review framework for this issue as it applies to all three utilities.

3. WASTE MANAGEMENT

a. Landfill Gas Management – Retain

Evidence of Interest

Heat Map Tests

The issue received a score of 42 out of 100, indicating a moderate level of interest. Of the proposed issues, the minimum was 8, the maximum was 100, and the median was 33.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was fourth out of eight issues.

Issue materiality

	Corporate Professional	Market Participant	Public Interest & Intermediaries	Total	Percent of Total
Yes	4	5	4	13	72%
No	0	0	0	0	0%
Maybe	3	0	2	5	28%
Total	7	5	6	18	

Comments from IWG respondents

Out of 18 respondents, 13 (72 percent) responded “Yes” and none responded “No.” From an analysis of the comments, the inclusion of the issue is not in question, rather the main concern is related to measurement, auditability of metrics, and comparison of company performance.

Sample comments

Stakeholder Type	Material?	Stakeholder Comment
Market Participant	Yes	<i>LFGs are such a large source of methane emissions and are likely to face tightening regulation in the future, which will have a material economic impacts on companies.</i>
Corporate Professional	Maybe	<i>This should be labelled "Landfill emissions management", not "gas". Currently, prediction of biogas generated in the landfill and measurement of emissions is based on calculations that may not be accurate, thus the first two metrics are suspect. Assuming that landfill gas capture is a long term solution for gas management is too prescriptive (IF0201-02).</i>
Corporate Professional	Maybe	<i>The industry can report on the various aspects of landfill gas generation and management. However third party auditing can be highly difficult due to the highly dispersed nature of these facilities.</i>

Analysis

- The heat map score was above median indicating moderate level of interest. IWG respondents ranked this issue fourth out of the eight proposed issues and while IWG respondents had reservations about this issue, the concerns were mostly around the measurability and auditability of emissions rather than the importance of the topic.
- Current IWG brief includes discussion of how emissions are being managed by large landfill operators, including the implementation of projects that convert the emissions into fuel/energy. Although capital costs for gas collection systems may be high, larger operators may be able to recoup costs through sales of gas, by generating and selling electricity or by powering own operations with liquefied natural gas or electricity from landfill emissions.

- SASB is considering the following key questions to strengthen the topic and refine metrics. The research is ongoing.
 - How costly would it be to audit Scope 1 emissions?
 - The brief states: "Current federal regulations require large landfills to install LFG collection systems. In 1996, the EPA enacted legislation that required monitoring of large MSW landfills, and mandated that significant emitters must have an LFG collection system." By how much are LFG emissions limited? Are there fines for exceeding these limits?
 - How widespread is LFG capture?
 - How much revenue can be generated by refining and selling the resulting gas from LFG capture?
 - Of what value are the GHG credits generated by LFG capture?
 - How much in subsidies is available for landfill energy projects? How much of emissions do such projects capture?
- Companies that operate landfills all mention the importance of managing landfill emissions in their 10-K. However, others that recycle metal or dispose toxic waste, naturally do not mention LFG. Changes in regulation may result in additional costs, but there is uncertainty whether this will have a material impact on operations.

Recommendation

- Retain topic and refine metrics based on IWG feedback. The topic is highly relevant for owners and operators of large landfills, with significant costs for complying with existing regulation and potential future costs due to regulatory uncertainty.

4. ENGINEERING & CONSTRUCTION SERVICES

a. Exposure to Shifting Energy Markets – Decision pending further review

Evidence of Interest

Heat Map Tests

The issue did not receive a score as it did not map to an issue captured by the existing set of keywords.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was ninth out of 10 issues.

Issue materiality

	Corporate Professional	Market Participant	Public Interest & Intermediaries	Total	Percent of Total
Yes	6	2	7	15	75%
No	1	0	0	1	5%
Maybe	2	0	2	4	20%
Total	9	2	9	20	

Comments from IWG respondents

Only 5 percent of responses about materiality were "No." Nevertheless, several participants raised concerns about the lack of applicability across the industry as not all Engineering & Construction Services companies serve the energy industry. A few comments focused on energy and resource efficiency in internal operations, indicating confusion about the scope of the issue, which was intended to focus on companies' revenues from oil and gas projects versus revenues from renewable energy projects.

Sample Comments

Stakeholder Type	Material?	Stakeholder Comment
Corporate Professional	Maybe	<i>There are many construction and engineering firms that do not have significant business in the power or energy market. I am not sure they can easily disclose the impact. I do think under MD&A, management should take a view on impact on industry as well as their business.</i>
Corporate Professional	No	<i>Energy is not a significant portion of our business portfolio. For the foreseeable future, energy supply will not be a limiting factor in providing construction services in the US.</i>
Corporate Professional	No	<i>This issue as described is not "Pertinent and relevant across and industry." It only applies directly to Engineering & Construction firms who serve the energy industry. There are many firms (traditional real estate developers) who don't serve this industry. The sampling of firms you list in the brief may serve this industry, but there are many others who don't.</i>

Analysis

- Evidence of interest in the segment of the industry that is actively involved in oil and gas infrastructure projects is high, but for a wide variety of reasons. Such reasons include, the volatility in demand over recent years, the high degree of dependency as well as the long term environmental implications of such projects. Similar comments can be made for renewable energy projects, though to a lesser extent, likely due to projects that are often less capital intensive, smaller scale, or more likely to be developed by privately held firms.
- Evidence of financial impact is high, but for a wide variety of reasons. Of the segment of the industry that is highly dependent on oil and gas infrastructure projects, financial performance is generally correlated with overall energy activity (exploration, production, power generation, etc.). Analyst commentary around expectations on increasing renewable energy investment activity are favorable for the subset of firms specializing in this space.
- SASB considered the following key questions:
 - Is demand growing for alternative energy projects and declining for fossil fuel projects and how significant are these implications for companies in the industry.
 - What percentage of engineering and construction firms serve the energy industry?
 - How dependent is the overall industry on revenues from energy projects?
 - Would companies need to make significant adjustments to their business to be able to serve renewable energy projects?
 - Would companies find it difficult to serve renewable energy customers if they currently receive a large share of revenues from hydrocarbon projects/companies?
- As reported in the brief, some of the larger firms in the industry are dependent on the energy industry for a large portion of their revenues. For example, Chicago Bridge & Iron reports in its FY2014 Form 10-K: *"Our Revenue and Earnings May Be Adversely Affected by a Reduced Level*

of Activity in the Hydrocarbon Industry. In recent years, demand from the worldwide hydrocarbon industry has been the largest generator of our revenue ... Reduced activity in the hydrocarbon industry could result in a reduction of major projects available in the industry, which may result in a reduction of our revenue and earnings and possible under-utilization of our assets."

- However, according to Bloomberg New Energy Finance, exposure to extractive industries varies by firm. Overall, only 9.05 percent of industry revenue is from energy infrastructure construction and 3.12 percent is from utility line construction.
- Industry wide many analysts believe that despite growing demand for renewable energy projects, there will still be significant ongoing demand for new, large capital projects in oil and gas. Moody's Investor Services reports that the oil and gas, power generation, and chemicals sectors are planning \$500 billion in new projects in the U.S. IBISWorld predicts that expansion in the production and consumption of natural gas will increase demand for natural gas pipeline construction to 2020, but also predicts that oil and gas markets will be "significantly less lucrative" for engineering firms.
- Some companies are growing their revenues from oil and gas projects. Fluor's backlog of oil and gas projects rose from \$5.2 billion in 2005 to \$28.7 billion in 2015.
- Multiple Engineering & Construction Services companies are involved in both renewable projects and oil and gas projects (e.g., MasTec, Wanzek, CIT Group, Fluor). If revenues from hydrocarbon projects fall, it seems that that companies would not have difficulty shifting their focus to renewable projects.

Recommendation

- Recommendation is pending further review and consideration of, 1) how well this issue fits into the SASB framework overall (i.e., a business issue with adequate disclosure or a sustainability issue), and 2) is the issue would be stronger, more clear, and applicable industry wide if it was combined and reframed with the existing issue, "Environmental & Climate Change Services."

5. REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS

a. Climate Change Risk Exposure – Retain

Evidence of Interest

Heat Map Tests

The issue received a score of 42 out of 100, indicating a moderate-low level of interest. For the proposed issues, the minimum was 42, the maximum was 78, and the median was 60.

IWG Feedback

Issue priority

The average ranking of the issue by IWG respondents was third out of three issues.

Issue materiality

	Corporate Professional	Market Participant	Public Interest & Intermediaries	Total	Percent of Total
Yes	16	4	12	32	74%
No	0	0	0	0	0%
Maybe	6	3	2	11	26%
Total	22	7	14	43	

Comments from IWG respondents

IWG feedback was widely dispersed, ranging from absolutely not material or appropriate for SASB to address in this industry, to extremely material and crucial to address. Overall sentiment was that the issue

is very important to the industry with significant real estate risks (e.g. flooding, sea level rise, water scarcity), but that actionable, useful metrics are limited due to the complexity of the issue and the lack of a clear enough direct correlation between asset risk and financial risk. The complexity of the issue and various strategies of managing this exposure (e.g., insurance, lease structures, debt structures, asset resiliency, etc.) must be addressed in the issue if it is included.

Stakeholder Type	Material?	Stakeholder Comment
Corporate Professional	Yes	<p><i>Climate change risk exposure is very material to our industry as we are faced with potential risk of extreme weather events, sea level rise, etc - particularly on our properties in coastal areas. Climate change risk can also relate to energy and water reliability which is extremely important to our industry. There may be a better measure of reporting information. More useful questions around exposure to climate risk might be, 'has your company performed sustainability risk assessments of its standing investments during the last three years?', 'if so, did those assessments include risk to extreme weather events, sea level rise, etc?' Or 'does your company have a policy on resiliency, adaptation or climate change? if so, please provide a copy or link.'</i></p>
Corporate Professional	Yes	<p><i>Climate change exposure is certainly a material risk that real estate investors face at all levels. The question in the case of real estate portfolios is, what additional information could be disclosed beyond asset location that would be material to the interpretation of climate change risk? Different managers will hold different positions on the exposure different markets face from climate change, and as such they should have clear information regarding the exposure of each portfolio, fundamentally the location of the portfolios assets.</i></p>
Market Participant	Maybe	<p><i>The lack of definitive information concerning timeframes for potential events, and indeed the lack of universal acceptance of probabilities for potential events makes it difficult to assess, much less, evaluate the risk of climate change. Risk mitigation carries with it its own costs and an investor must weigh the price of insurance vs. the cost for self-insuring. Absent government regulations mandating specific actions, any externally imposed standards can be viewed as arbitrary and creating an economic burden with no guarantee of effectiveness. There isn't a resource available that is positioned to offer a definitive assessment, so an investor's level of risk tolerance is subjective and not easily ranked without extensive analysis of many other factors.</i></p>
Corporate Professional	Maybe	<p><i>While climate change risk exposure is important, this is in large part not a topic that meets the SASB standard of 'Actionable by companies.' While acquisition and disposition activity can potentially be impacted by climate change risk, whether or not a particular property is in a floodplain is not something that landlords can control for their existing portfolios, so without exiting or entering particular geographic markets via acquisitions or dispositions, this topic is not very actionable. Further, investors can easily see the locations in which a company owns property, and therefore if climate change risk as defined by flooding is important to an investor, a separate disclosure does not seem necessary.</i></p>
Public Interest	Maybe	<p><i>This is important but is much more difficult for owners to manage - even around pure disclosure but certainly around ways to mitigate climate change risk. The concern here is that the SASB should be careful to not set standards of disclosure that inherently make investments in coastal markets, for example, dis-proportionally "risky". Fundamentally for this section would recommend that the criteria be: energy, water, waste, GHG, tax, regulatory risk/exposure. Further definition of climate change in this context will need to be made - is it merely a resiliency issue?</i></p>

Analysis

- Evidence of interest in the risk climate change presents to physical assets is high. But specifically in terms of interest in this risk affecting real estate portfolios is notably less so.

- Evidence of financial impact of this risk affecting real estate portfolios is limited, especially on a systematic basis. This is partially driven by the complexity of how companies may choose to mitigate the financial risk, as there are a variety of approaches.
- SASB considered the following key questions:
 - How widely does financial risk vary from physical asset risk?
 - How effective are insurance and lease structures in mitigating financial risk?
 - How likely is this issue to systematically affect the financial performance of a company in the industry? For example, in other industries that are reliant on a supply chain, a natural disaster could disable an entire supply chain. In the real estate industry, a natural disaster may only affect a small number of assets out of a portfolio of many individually operating assets. Does this decrease the likelihood of significant financial impact?
 - How concentrated are industry investments in regions with heightened exposure to climate change risks?
- The exposure of REIT owned real estate in regions that are vulnerable to climate change risks is significant.
- REITs have a strong ability to mitigate financial risks through insurance and lease contracts. While such strategies do not eliminate financial risk and are not certain (e.g., insurer insolvency, insurer pricing volatility, tenant insolvency), they provide what are likely to be generally effective financial risk mitigation strategies.
- The ability to measure how effectively companies are mitigating financial risks is likely to be extremely challenging.
- Investing in asset resiliency is a generally well understood and developed risk mitigation strategy, especially in vulnerable regions.
- Water scarcity is a component that receives a significant amount of industry attention (see “Water Management”).

Recommendation

- Retain issue. Improve structure and strength of issue through recognizing the variety of strategies used to mitigate risk, and the complexity of the issue, including how the risk and mechanisms of systematic financial impact are fundamentally different from other industries.

III. Suggested Additional Issues

The following additional topics were suggested by Industry Working Group participants, and reviewed by SASB. This is followed by SASB’s decision on the issues based on additional evidence and IWG follow-up.

SASB conducted further research, including analysis of Form 10-K disclosure and discussion with industry experts to determine the likelihood of material impacts associated with the suggested issues.

** In some cases, additional topics were not explicitly suggested by IWG participants but arose during the course of further research on an industry. These topics are marked with an asterisk.*

TABLE II: NEW ISSUES PROPOSED BY IWG MEMBERS

Industry	Issues proposed by IWG
1. Electric Utilities	a. Electrical Equipment Lifecycle Impacts b. Workforce Health & Safety c. Safety Management
2. Gas Utilities	a. Natural Gas Sourcing
3. Water Utilities	a. Community Relations b. Employee Recruitment & Retention
4. Waste Management	a. Air Quality
5. Engineering & Construction Services	a. Waste Management for Construction Materials b. Environmental & Social Considerations in Site Selection
6. Home Builders	a. Waste Management for Construction Materials b. Supply Chain Management c. Wood Sourcing* d. Affordable Housing*
7. Real Estate Owners, Developers & Investment Trusts	a. Land Use & Ecological Impacts – Due Diligence b. Resource Efficiency of Buildings c. Environmental Accidents & Remediation d. Tenant Engagement on Resource Efficiency e. Managing Environmental & Socioeconomic Impacts of Projects f. Corruption & Bribery g. Lobbying & Political Contributions h. Supply Chain Management
8. Real Estate Services	a. Climate Change Adaptation b. Customer Health & Safety c. Contractor Management

1. ELECTRIC UTILITIES

a. Electrical Equipment Lifecycle Impacts – Do not add

IWG Comment(s)⁴

- *“In Canada we have issues surrounding PCB management in transformers, and other electricity equipment. Regulations are in place but because (sp) this is a legacy environmental issue, most utilities are having difficulty meaning phase out requirements. This is Federal and Provincial issue.” - Corporate Professional*

Analysis

- PCBs were phased out in the U.S. in 1977 and are strictly regulated by the EPA, so any issue is a legacy issue. While the remaining PCB is getting relatively more dangerous with age, which does present some problems, this is a well accounted for and identifiable cost that is already recorded in SEC filings.
- According to initial research, the largest fine in U.S. was from 2002 and was \$900,000.
- Company that raised issue is not listed on a U.S. exchange.

Recommendation

- Do not add.

⁴ Comment from IWG members in this sub-section and similar sub-sections in the rest of the document are quoted verbatim and so may include typographical or grammatical errors.

b. Workforce Health & Safety – Decision pending further review

IWG Comment(s)

- *“Safety is generally a material topic for electric and gas utilities. Utilities work hard to make sure the public doesn't come into contact with its infrastructure, that is employees and contractors remain safe.”* – Corporate Professional
- *“Safety is a crucial aspect of social corporate responsibility.”* – Corporate Professional
- *“Nuclear power plant safety is considered material. NRC cornerstone framework is useful.”* – Market Participant
- *“Health and Safety, ncluding public safety and workers and contractors safety.”* Corporate Professional

Analysis

- Low overall injury (2.6 per 100 full-time workers for power generation, 2.2 for transmission/distribution) and fatality rates (2.34 per 100,000 full-time equivalent workers, 23 total in 2013), both in absolute terms and in rates. Issue is currently managed well (although, according to call with industry expert, this was not true 20 years ago).
- Call with industry experts confirmed it's a major issue among industry stakeholders, but gets little attention from investment community.
- Most injuries are automobile related, which the industry is relatively still quite good at managing compared to other industries.
- While there is mention of employee safety in some corporate documents (e.g., sustainability reports), there haven't been many mentions in 10-K filings. Most of the companies mentioning safety in these documents also have gas distribution networks. This topic has already been included in the gas utilities industry, where serious accidents such as explosions can harm workers and others.
- The issue is generally well-managed, so there may not be significant differences in performance at the company level.

Recommendation

- Decision pending further review.

c. Public Safety – Decision pending further review

IWG Comment(s)

- *“Safety is generally a material topic for electric and gas utilities. Utilities work hard to make sure the public doesn't come into contact with its infrastructure, that is employees and contractors remain safe.”* – Corporate Professional
- *“Safety is a crucial aspect of social corporate responsibility.”* – Corporate Professional
- *“Nuclear power plant safety is considered material. NRC cornerstone framework is useful.”* – Market Participant
- *“Health and Safety, ncluding public safety and workers and contractors safety.”* Corporate Professional

Analysis

- SASB reviewed Public Safety based on the same set of comments that led to consideration of the Workforce Health & Safety issue.
- Public health is also covered under the Coal Ash and Spent Nuclear Fuel issue, Distribution Network Resiliency issue (which covers weather preparedness), as well as in the Air Quality issue.
- Major accidents that have an impact on customers or the community due to mismanagement on the part of Electric Utilities are rare nowadays.

- Our research thus far has not yielded evidence of financial impact, even though any accident would be harmful for company reputation, could increase contingent liabilities and jeopardize social license to operate.
- Calls with industry experts confirmed it's a major issue among industry stakeholders, but gets little attention from investment community.
- Issue is currently managed well (although, according to call with industry expert, this was not true 20 years ago).

Recommendation

- Unlikely to add.
- Decision pending further review.

2. GAS UTILITIES

a. Natural Gas Sourcing – Do not add

IWG Comment(s)

- *“Gas sources and fracking implications... more and more natural gas comes from fracking operations that are subject to regulatory changes as well as conflicts associated (sp) with resource consumption (especially water).” – Public Interest or Intermediary*
- *“There is a growing trend in investors' concerns over the supply chain of their investments. I understand that the determining the origin of purchased NG is difficult because it is processed by other parties before entering the distribution networks, however I am of the opinion that the percentage of NG sourced from conventional vs nonconventional means could influence their investing decisions. Again though, this information would be difficult to receive. What would be possible to disclose, and relevant to investors decisions, would be the geographical source of the natural gas. Specifically what their sourcing mix was, by percent, by state.” - Public Interest or Intermediary*

Analysis

- Gas distributors and marketers do not have the ability to distinguish between gas sourced by horizontal fracturing (fracking) or otherwise.
- A search on company filings (10-Ks, earnings calls, etc.) found no discussions by companies or investors around fracking bans or gas sourcing risks.
- Although any supply constraints on gas would financially impact gas utilities, such constraints are unlikely in the short to medium term.

Recommendation

- Do not add due to lack of evidence of interest and fungible nature of gas.

3. WATER UTILITIES

a. Community Relations – Decision pending further review

IWG Comment(s)

- *“There is nothing listed to provide metrics for the way in which this critical business interacts with its customers, not just during rate-making, but during construction and in emergency. Environmental Justice and large-scale community planning/economic development efforts need to be addressed as well.” – Corporate Professional*
- *“In general, social/governance metrics that provide support to the above.....i.e. community/stakeholder engagement, public policy/regulation, safety/risk management - topics*

you have all relate to environmental performance or operational efficiency. There are no social or governance metrics, which support the ability to implement those in the environmental/operational sector.” – Corporate Professional

Analysis

- The issue on Fair Pricing & Access discusses how water rates are a driving factor in community acceptance of water utility companies. Water utilities are able to manage their exposure to the impact of rate mechanisms through positive regulatory relations, forward-looking rate cases, and positive community relations and communications initiatives.
- SASB to continue exploring:
 - How often are new dams and reservoirs built?
 - Are water sources developed and owned by local governments/authorities or private corporations?
 - What is the likelihood that new water sources will need to be developed as demand increases and current water suppliers are at risk?
- SASB will also reach out to the IWG participants who suggested the issue to get more context and information on the issue.

Recommendation

- Recommendation is pending further research and outreach.

b. Employee Recruitment & Retention – Do not add

IWG Comment(s)

- *“Currently, water professionals constitute an aging work force. A 2005 study found that the average age of a water utility worker was 45, while the typical retirement age was 56. These workers will be difficult to replace especially on the technician and engineer level.” – Public Interest*

Analysis

- Recruiting and retaining a talented workforce is important for Water Utilities, especially as many employees are set to retire in the coming years.
- However, there are no indications that the industry faces hiring or retention difficulties due to poor working conditions, benefits, wages or other human capital factors which SASB traditionally uses to analyze human capital issues.

Recommendation

- Do not add.

4. WASTE MANAGEMENT

a. Air Quality – Decision to be based on further analysis

IWG Comment(s)

- *“Air pollutant emissions (the six that the EPA measures) - By including this and showing (hopefully) decreasing levels, a company can measure how they are affecting the health of the surrounding communities.” – Public Interest*
- *“Landfill fires - Landfill fires are a significant problem. According to the US Fire Administration, there are about 8300 landfill fires a year. These fires represent a significant source of air pollution, including dioxin, however, they are not typically disclosed. The U.S. EPA has developed a preliminary estimate of landfill dioxin emissions of 1,300 g TEQ / yr (See Table 1-12 of attached EPA report), equal to one third of the total estimated U.S. dioxin emissions (quantitative inventory*

+ preliminary) in the latest year for which data is available (2000), making landfill fires the single largest source of dioxin air emissions.” - Corporation

Analysis

- SASB explored emissions of air pollutants, including dioxins and furans which are toxic to human health. With the tightening of the regulations on limits of air emissions in '90s, the amount of pollutants from waste combustion was reduced by over 90 percent.
- Only a few companies mention air pollution regulations in their SEC filings today, but even those do not mention any risks associated with managing air pollution.
- SASB research findings indicate that current methods of waste incineration emit dioxins and furans at amount far lower than regulated limits and do not pose significant human risks. EPA data indicated that the following sources account for 80 percent of all dioxin emissions in the U.S.: coal fired utilities, metal smelting, diesel trucks, land application of sewage sludge, burning treated wood, and trash burn barrels.
- Various studies have been conducted to see whether there is a relationship between living close to landfills and adverse health outcomes. A couple of studies concluded that there was “a small, but significant, increased risk of birth defects to babies whose mothers lived within 3 km of a hazardous waste landfill” and an “increased risk for (certain) cancers for women who lived within 250 feet of the landfills during the 1960s and 1970s.” Others were inconclusive and proposed further study to support or refute their findings.

Recommendation

- Decision to add as a standalone issue is pending further review.
- Another option would be to combine with the community relations issue if odor and air pollutants are a cause of community concern and opposition.

5. ENGINEERING & CONSTRUCTION SERVICES

a. Waste Management for Construction Materials – Add a waste metric to Lifecycle Impacts of Buildings

IWG Comment(s)

- *“Waste management, circular economy and zero waste: Access to natural resources will become a constraint in future and governments will increasingly regulate waste diversion. Infrastructure projects will need to anticipate these trends and address them in their business models.” – Public Interest*

Analysis

- SASB considered the following key questions:
 - C&D is a large waste stream; how much of this is attributable to E&C services companies?
 - What percentage of C&D waste is recycled or reused?
 - How much does it cost to use virgin construction materials (say, as percentage of project cost)? How does it compare to using recycled materials?
 - Can companies save money by recycling and/or minimizing waste? Would these savings be passed along to customers, helping companies get selected in bidding processes more than others and impacting long-term revenue growth?
 - Are any E&C companies working toward a circular economy and/or zero waste?
 - Is waste reduction or diversion included in requests for proposals/bids?
 - What is the cost of waste management or size/frequency of penalties for improper disposal?
 - Can E&C companies get penalized for improper disposal of waste or is it the project sponsor that is usually affected?
 - How much say do construction companies have on materials?

- Construction and demolition (C&D) waste is a large waste stream estimated at 530 million tons in the U.S. in 2013. Ninety percent of C&D materials come from demolition activities and 10 percent from construction activities.
- At most job sites, 90 to 95 percent of waste is recyclable, although actual recycling rates are difficult to estimate. According to the U.S. Environmental Protection Agency, 40 percent of building-related C&D materials are reused, recycled, or sent to waste-to-energy facilities. According to the Construction & Demolition Recycling Association, over 70 percent of C&D waste is recovered and put to beneficial use.
- Reuse of C&D waste is higher for some types of waste than for others. Seventy three million tons of reclaimed asphalt pavement is reused each year, nearly twice as much as paper, glass, aluminum, and plastics combined.
- Recycled materials are often cheaper than virgin materials but costs depend on the location of the materials and the costs of storage, collection, and transportation. The use of recycled concrete for highway construction could reduce material costs by up to 20 percent. There is no evidence whether companies are passing these savings along to customers to help them get selected more often in bidding processes.
- Some government agencies have set goals regarding waste diversion and reduction. In 2010, California adopted mandatory green building codes for newly constructed buildings that require the diversion of at least 50 percent of waste generated. In 2008, the Department of Defense set a goal to reduce C&D waste by 50 percent by 2015.
- Penalties for improper disposal of C&D waste vary by state and depend whether the waste is hazardous or non-hazardous, but are generally not high. There was one higher profile incident where two construction companies and their employees charged with illegal storage of hazardous waste were sentenced to five years' probation and fines of up to \$100,000.
- Material choices are often subject to legal limitations based on building type and size in order to protect public health and safety. For government projects, recycled materials must generally be equal in quality and durability to virgin materials.
- Under the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Credit MR2, projects earn one point for diverting 50 percent of waste, two points for diverting 75 percent of waste, and an additional point under Innovation in Design for diverting 95 percent of waste.

Recommendation

- Add a waste metric to Lifecycle Impacts of Buildings, but do not add Waste Management as a standalone issue. The vast majority of waste is a result of demolition activities and thus, this inherently embedded in, and appropriate to analyze within, the Lifecycle Impacts of Buildings issue.

b. Environmental & Social Considerations in Site Selection – Do not add

IWG Comment(s)

- *“Sustainable communities: as many companies do not only construct single buildings, but entire communities, issues such as integration of sustainable mobility (e.g. encouraging public transport), supporting inclusiveness and accessibility (e.g. affordable homes, mixed-use communities) as well as ensuring the maintainability and flexibility of buildings, are important aspects as well.”* – Public Interest

Analysis

- Consideration of industry scope (excerpt from Industry Brief for IWGs):
 - The Engineering & Construction industry is responsible for providing architectural design, consulting, contracting, and construction services that support various infrastructure and

- heavy construction projects related to transportation, energy transmission and generation, building, and other civil engineering projects.
- In follow-up correspondence, the IWG participant who suggested this issue retracted her suggestion, based on a misunderstanding around Home Builders being in the same industry as Engineering & Construction Services. Home Builders is a separate industry, and thus, the participants comment was intended for the Home Builders industry.

Recommendation

- Do not add. The IWG participant who suggested this issue clarified that it was meant for companies that build homes, which fall under the Home Builders industry, rather than for companies that support infrastructure and heavy construction projects.

6. HOME BUILDERS

a. Waste Management for Construction Materials – Do not add

IWG Comment(s)

- *“Efficient use of building materials - how much is purchased/percent used - percent disposed of: This could be tracked by containers full of waste which already must be disposed of in a specific manner. Standard material weights could be used for both purchased materials and container weights of disposed materials.” – Market Participant*
- *“Disposal of building materials - percent reused/recycled versus to landfills/standard disposal: For example, excess building materials could be shipped to less developed nations instead of being put into landfills. Generally, you could build a small house with the materials left in containers and sent to landfills. THERE IS NO ACCOUNTABILITY FOR RESOURCE USE.” – Market Participant*

Analysis

- SASB considered the following key questions:
 - C&D is a large waste stream; how much of this is attributable to home builders?
 - How much waste is recycled?
 - How much does it cost to dispose of C&D waste? Can companies save money by recycling and/or minimizing such waste?
 - Which companies are taking the lead in using building materials more efficiently? Which companies are taking the lead in reusing and recycling unused building materials? Who are the laggards?
 - What other resource efficiency considerations are there besides energy and water?
- As noted under the suggested issue of Waste Management for Construction Materials for the Engineering & Construction Services industry, construction and demolition (C&D) waste is a large waste stream estimated at 530 million tons in the U.S. in 2013.
- Building a new house generates 7,000 to 12,000 pounds of waste, or 8,000 pounds for every 2,000 square feet.
- The typical builder pays only \$511 per house for waste disposal, although companies such as KB Homes, Toll Brothers, and Pulte Group are using pre-constructed and pre-engineered techniques to reduce waste. PulteGroup has reduced onsite waste removal costs to less than \$300 per house.
- Reducing wood waste can save builders \$300 to \$800 per job, which is not high relative to their overall costs. Other decisions provide much greater cost savings, such as using components instead of stick framing, which can save over \$3,000 in materials and labor per house.
- According to the California Department of Resources Recycling and Recovery, resource efficiency can be accomplished by using resource-efficient manufacturing processes; recycled or recyclable product packaging, and materials that are natural, durable, plentiful, recycled, locally-available, reusable, salvaged, refurbished, remanufactured, and/or renewable.

Recommendation

- Do not add due to weak evidence of financial impact; cost savings are small relative to the size of projects.

b. Supply Chain Management – Decision pending further review

IWG Comment(s)

- *“Supply chain control: The homebuilders' supply chain can be highly dispersed and not completely within the control and oversight of the homebuilder. Whether that means sourcing building materials, finishes and equipment or deployment of subcontracted labor, this lack of control of the supply chain can lead to risks in itself. It's difficult to instill sustainability, quality and safety cultures when oversight of operating segments of businesses may not be completely visible. In fairness, I'm not sure how easy it would be to develop metrics for this. If you want to embed sustainability, quality and safety in the culture of homebuilders, training and education has to be rolled out across contractors and subcontractors and risks have to be understood on site, in sourcing and in operations.”* – Market Participant
- *“Sourcing practices & materials: Information about where the building materials come from may be materially important to investors. With increased consumer focus on supply chain transparency, a reasonable investor may be significantly concerned with understanding.”* – Public Interest

Analysis

- SASB considered the following key questions:
 - How much demand is there for responsible sourcing of building materials?
 - Have companies terminated relationships with suppliers or chosen suppliers due to sustainability performance?
 - Are responsibly sourced building materials more expensive? Or is there a cost advantage for buying responsible materials?
 - If there's a premium for sustainably sourced raw materials, are larger construction projects (not homes) more likely to use sustainable raw materials due to a value add/marketing/greenwashing angle than homes sold to families/individuals who may be more cost conscious?
- Demand for green building materials appears to be slowly growing but consumer awareness is not high. According to the U.S. Green Building Council, 62 percent of firms building new single-family homes report that over 15 percent of their projects are green.
- There is minimal evidence of companies terminating relationships with suppliers or choosing suppliers based on their sustainability performance. Examples were found of a company being sued for poor workmanship or design and construction defects and then turning around and suing its subcontractors, but these cases were not related to sustainability.
- The cost of green materials generally depends on the experience of the builders, the source of the materials, how green the design team wants the home to be, and how early in the design process the green building features are incorporated. The learning curve for architects and builders suggests that the first green home a builder builds is 3 to 5 percent more expensive, but by the third green house, the costs are comparable. Sometimes green building materials can be cheaper.

Recommendation

- Decision pending further review and consideration of combining suggested issue with Wood Sourcing suggested issue. Ongoing research is focused on the risk and opportunity of the magnitude of financial impact.

c. Wood Sourcing* – Decision pending further review

Analysis

- SASB considered the following key questions:
 - What are the risks of sourcing wood from illegal logging? Regulatory risks?
 - Is there a financial benefit to sourcing wood responsibly?
 - What is the breakdown of wood use between residential and non-residential construction?
 - Is demand growing (from home buyers) for responsibly-sourced wood?
- New residential construction uses ten times as much wood as nonresidential construction, indicating that home construction is a large driver of logging.
- Deforestation accounts for 17 percent of the world's greenhouse gas emissions.
- Three percent of wood-based products imported into the U.S. are illegally sourced.
- The National Association of Home Builders has been urging Congress to amend the Lacey Act to protect businesses and individuals that unknowingly procure illegal wood products from overseas. According to the organization's chairman Barry Rutenberg, "Builders have no way of knowing the origin of a particular piece of lumber, a component of a cabinet, a closet door or crown molding."
- Most voluntary rating systems offer credit for the use of certified wood, recycled/reused/salvaged materials, and local sourcing of materials.
- Home buyer awareness and consumer reported willingness to pay a premium for certified wood are both low.

Recommendation

- Decision pending further review and consideration of combining suggested issue with Supply Chain Management suggested issue. Ongoing research is focused on the risk and opportunity of the magnitude of financial impact.

d. Affordable Housing* – Do not add

Analysis

- SASB considered the following key questions:
 - What are the benefits to companies from the construction of affordable housing?
 - Is this a revenue opportunity for companies?
 - Is there a reason why companies would not build affordable housing if deemed economically profitable and consistent with their core business operations?
 - What is the current state of regulation concerning affordable housing?
- A few smaller industry players see affordable housing as a way to compete with the bigger firms and a potential way to avoid future mandates on affordable housing. One company, the Lee Group in Los Angeles, reports that it constructs both affordable and market-rate homes because it opens up land opportunities the company could not access otherwise.
- Affordable housing is a significant issue. According to the U.S. Department of Housing and Urban Development, before the real estate bubble of 2007, 20 percent of U.S. households were living in unaffordable housing. This percentage is higher for minorities than for whites.
- The first inclusionary zoning program in the U.S. was adopted in 1974. Thirty years later, 350 to 400 local jurisdictions had inclusionary zoning programs.
- The benefits of such programs to communities are unclear. Cities imposing below market housing mandates between 1980 and 1990 ended up with nine percent higher prices and eight percent fewer homes; between 1990 and 2000, these numbers were 20 percent and seven percent, respectively. Research on housing prices and starts in California from 1988-2005 showed that cities with inclusionary zoning programs saw an overall increase in the price of single-family houses and a decrease in the size of single-family houses.
- A California law gives developers the option to build lower-cost units in exchange for benefits such as higher density and relaxed parking requirements and about 200 California cities and counties have ordinances requiring developers to sell some housing at below-market rates as a

condition of a building permit; the California Supreme Court upheld these ordinances in 2015. Los Angeles's ordinance requiring builders to set aside some rental units for below-market rents was overturned in 2009.

Recommendation

- Do not add as the issue does not present likely material risks or opportunities.

7. REAL ESTATE OWNERS, DEVELOPERS & INVESTMENT TRUSTS

a. Water Management – Add

IWG Comment(s)

- Note: 15 of the 43 IWG participants recommended including Water Management/Water Efficiency
- *“Water efficiency is increasingly becoming as important as energy efficiency. Our industry long has focused on the use of design solutions and technological advancements that help to minimize not only energy consumption but also materials and water consumption. Water efficiency technologies are critical in drought-prone locations such as Sao Paulo or California. Some of the design features we include in our facilities include low-water (drought-resistant) landscaping, motion-activated faucets, low-flow toilets, waterless urinals and rainwater capture for irrigation.”* – Corporation
- *“The commercial and institutional sector is the second largest consumer of publicly supplied water in the United States, accounting for 17 percent of the withdrawals from public water supplies. Further, similar to energy efficiency, landlords have broad ability to control the water consumption in their buildings. Also, because of the energy-water nexus, water efficiency directly impacts energy efficiency. Broad regulation impacts water use in many markets. Therefore, water efficiency is material to real estate and should be included in the SASB.”* – Corporation
- *“Water is less costly at this time than energy, but sustainable use of water in and for buildings (commercial, residential, industrial, manufacturing, health care, etc.) is critical in today's climate. I believe water regulation and shortage will lead to risk and opportunity for the real estate industry in the near future.”* – Corporation
- *“As with energy, water is a valuable natural resource that is essential for a building to operate. While not as expensive a cost as energy, there are larger issues with availability than currently experienced in the energy space.”* – Market Participant

Analysis

- SASB considered the following key questions:
 - How significant of a cost is water to owners, as well as tenants?
 - Do tenants expect or demand (or pay a rent premium for) highly water efficient buildings and properties?
 - How significant of a risk is water scarcity to real estate owners, both in development activities and in the existing building stock?
 - Do mainstream analysts view it as a material issue?
- Water is the fastest increasing utility cost by a wide margin (increasing by almost 2x since 2003).
- Water ranks No. 2 in a survey by Cushman Wakefield on the most important sustainability issues in the industry.
- 44 percent of GRESB survey participants report data on absolute water consumption.
- Extensive industry and investor consultations indicated that a significant reason why this issue is so important is because tenant expectations and demands for water efficiency are quickly escalating. Strong performance on this issue may result in a competitive advantage in obtaining tenants, or simply a minimum requirement tenants with leverage demand.

Recommendation

- Add issue due to increasing cost of water, the rising importance of water scarcity, and the growing importance tenants are placing on water-efficient properties.

b. Waste Management – Do not add

IWG Comment(s)

- *“Our industry has also placed high importance on waste prevention and recycling during the construction phase. In addition, many organizations are focusing more on waste prevention and recycling for internal operations, and are setting diversion goals and targets. Strategies to reduce waste are becoming an increasingly common sustainability objective, and there is an increased effort to track waste reduction throughout our corporate operations. As data becomes more available, it is likely waste will be tracked throughout our facilities.”* – Corporations
- *“Waste has an impact on landfills, transportation of the waste ergo energy, etc. Many cities today require recycling and diversion (from landfills) rates is an increasingly common metric that is tracked and measured.”* – Public Interest & Intermediaries
- *“Waste reduction, in the form of recycling, composting, essentially diverting waste from landfills, is an important consideration given the rapidly depleting capacity to absorb such waste. The lost value from dumping the outflow from our buildings is a hidden drag on the long-term value of the investment. A building can seek to influence the composition of its maintenance products in terms of reducing packaging, or using alternatives that have less unusable product that must be disposed of. This will have economic benefits as well as environmental benefits; the value is maximized when the community itself participates in the process to develop and manage resources to assist in processes such as recycling and composting.”* – Market Participant

Analysis

- SASB considered the following key questions:
 - Are waste management practices at properties a driver of demand from occupants?
 - Does waste management rise to the level of materiality from cost perspective (or reputational image for some tenants)?
 - Do mainstream analysts view it as a material issue?
 - To what extent can this data be accurately and cost-effectively collected? To what extent is data collected at present?
- 27 percent of GRESB participants report some form of a waste management metric and 16 percent of properties that use the ULI Greenprint platform report on waste.
- Data collection capabilities can be challenging (even more so than energy and water), as specific components of waste data are dependent on the waste collection companies.
- Consultation with analysts and investors indicated that the only interest they would have in the availability of this data, is the extent to which independent ratings firms might use it in their analysis. Incorporation into fundamental investment analysis would be highly unlikely.
- Consultation with companies in the industry (and industry associations) indicated that direct costs associated with waste would be highly unlikely to rise to the level of materiality.
- Research on the concept of tenant demand being driven by waste management, or a REIT establishing a durable competitive advantage based on waste management practices, found no significant supporting evidence.

Recommendation

- Do not add issue based on the lack of evidence supporting the issue as a material cost driver or a driver of tenant demand.

c. Human Health – See “Issues for Reconsideration”

- “The issue of health and wellness is rapidly emerging as a significant business opportunity and risk for real estate portfolios. Over time, the marginal value of investment in energy and emissions-related activity will gradually decline as these strategies become embraced as standard parts of business. This is entirely positive for the environment; however, it will erode the ability for these attributes of property to provide “green premiums”. The absence of these attributes will constitute a risk, but not an opportunity for above market pricing and returns. Consequently, market participants are looking for new ways to differentiate their properties and companies. Health and wellness represent a compelling opportunity. In the US, health care-related expenses represent a significantly larger expense than energy, and these expenses are growing more rapidly than energy. This means that properties that can provide a superior platform for the promotion of health have the opportunity to command premiums. Conversely, properties without health-promoting attributes are likely to be discounted and face business risks.” – Public Interest & Intermediaries
- “Performance indicators should be aligned with high-quality green building rating systems to address: Human health: minimally including indoor air quality and essential elements of indoor environmental quality...” – Public Interest & Intermediaries
- “Do you specify low off-gassing paints, wall coverings, and/or adhesives for tenant work? Do you use green cleaning and pest control products?” – Public Interest & Intermediaries

Analysis & Recommendation: See “Managing Environmental & Socioeconomic Impacts of Properties” in Section I.

d. Land Use & Ecological Impacts – See “Issues for Reconsideration”

IWG Comment(s)

- *“Performance indicators should be aligned with high-quality green building rating systems to address...Land use, transportation, and site design: neighborhood diversity and connectivity, accessibility, public transportation, stormwater management, and other critical factors.”* – Public Interest & Intermediaries

Analysis & Recommendation: See “Managing Environmental & Socioeconomic Impacts of Properties” in Section I, “Issues for Reconsideration”

e. Environmental Accidents & Remediation – Do not add

IWG Comment(s)

- *“Land contamination can significantly impact financial value of property investments. Investors acquiring an asset without undertaking appropriate environmental due diligence can expose the trust to up to millions of dollars in remediation liabilities that can impact the entire investment and its returns. Developers that do not appropriately manage contamination issues can find themselves directly liable for non compliance with environmental legislation and impaired assets that require significant funds to remediate.”* – Public Interest & Intermediaries

Analysis

- SASB considered the following key questions:
 - Does this issue apply outside of development activities?
 - Relative to ownership of the existing building stock, how significant are the industry’s development activities?
 - If such accidents occur (or remediation risks and opportunities) to what extent will they affect the real estate owner?

- Companies in the industry are involved in development activities, but such activities are relatively small compared to the ownership and operation of the existing building stock.
- While this issue appears relevant to construction companies that are constantly exposed to it, evidence supporting the risk of material impact to the industry overall was insignificant.

Recommendation

- Do not add issue based on the relative lack of applicability to the industry overall.

f. Tenant Engagement on Resource Efficiency – See “Issues for Reconsideration”

IWG Comment(s)

- *“Cover tenants satisfaction but also how the REIT interact with tenants to maintain/enhance the value of the properties with initiatives related to the environment and social impact of the property, including health and safety of tenants/occupants..”* – Public Interest & Intermediaries
- *“Communication on ESG risks, opportunities and benefits is a critical component of our sustainability program. For example, it is important to raise awareness of and engage tenants (e.g., on behavior change to reduce impacts, Tenant Star, and other initiatives) to work together to reduce consumption. We often do not know what our tenants are doing within their leased space, so we should encourage effective communication, particularly in terms of quantifying the long term benefits to our tenants and to society of minimizing impacts...”* – Corporations
- *“Tenants consume more than 50% of all energy in office buildings, and a greater majority in retail and residential properties. As a result, the “Tenant Star” legislation addresses a gap in the current ENERGY STAR building labeling program – which currently places the entire performance burden on ownership – and would instead recognize tenants as they design, construct, and operate within their leased spaces. The importance of tenant engagement is driving sustainability programs in the real estate sector (and policy in Congress and the Administration)”* – Corporations
- *“...Stakeholder Engagement: Improving the sustainability performance of a real estate portfolio requires not only dedicated resources, a commitment from senior management and tools for measurement/management of resource consumption, but also requires the cooperation of other stakeholders, including tenants, suppliers, a participant’s workforce and the local community.”* – Public Interest & Intermediaries

Analysis & Recommendation: See “Managing Environmental & Socioeconomic Impacts of Properties” in Section I, “Issues for Reconsideration”

g. Lobbying & Political Contributions – Do not add

IWG Comment(s)

- *“To effectively grow their business and investments, developers need to engage with regulators and government representatives and bodies at a range of levels. Developers therefore typically lobby government and provide political donations to various parties. However, some have been found to engage in unethical conduct, with bribery and corruption being a material issue. If perceived or real risks are not managed by the REIT this can result in litigation and delays in developments such that investments are not realised in a timely and optimised manner.”* – Public Interest & Intermediaries

Analysis

- SASB considered the following key questions:
 - What types of policies companies in the industry lobby for (think of a sustainability angle)?
 - Look for instances of corruption and bribery related to the policies of interest (what is the scope of the FinCEN regulations in the RE industry)?

- Lobbying in the real estate industry is predominantly related to tax issues (primarily issues around the definition and advantages of a REIT).
- Evidence did not support the concept of the industry systematically lobbying for policy that may be contrary to society's interests.

Recommendation

- Do not add issue based on lack of evidence on how lobbying and political contributions by the industry are driven by issues with dominant sustainability implications. The bulk of lobbying appears directly tied to taxation and investment issues. While a limited amount of industry lobbying may be applicable to sustainability issues, analysis of recent activity demonstrates some engagement by the industry to proactively advance sustainability in a manner that is mutually beneficial (e.g., recent Tenant Star legislation).

h. Supply Chain Management – Do not add

IWG Comment(s)

- *“For REIT’s that also build there is an important component to how we source materials, from where, and with whom that could be included. I think the entire topic of supply chain risk is important for all industries, frankly.”* – Corporations
- *“Performance indicators should be aligned with high-quality green building rating systems to address...Materials and supply chain: minimally including transparency (e.g., requirements for health product declarations and environmental performance disclosures) and risk management (e.g., exposure to conflict minerals).”* – Public Interest & Intermediaries
- *“Developers are significantly exposed to the standards applied by their key suppliers such as building contractors. Builders are exposed to significant labor and work conditions issues and if they are not managed well, this can impact a REIT’s investment and can also manifest into a reputation issue. Overall as a sector, there is a significant amount of work performed on behalf of the REIT by suppliers. Therefore, supplier standards in terms of quality, conduct and conflict of interest need to be managed well so as to protect the financial investments of REITs.”* – Public Interest & Intermediaries

Analysis

- SASB considered the following key questions:
 - Does this issue apply outside of development activities?
 - Relative to ownership of the existing building stock, how significant are the industry's development activities?
- Companies in the industry are involved in development activities, but such activities are relatively small compared to the ownership and operation of the existing building stock.
- While this issue appears relevant to construction companies that are constantly exposed to it, evidence supporting the risk of material impact to the industry overall was insignificant.

Recommendation

- Do not add issue based on the relative lack of applicability to the industry overall.

8. REAL ESTATE SERVICES

a. Climate Change Adaptation – Do not add

IWG Comment(s)

- *“energy intensity creates normalization, climate risk is essential, water is increasingly material.”* – Public Interest & Intermediary

Analysis

- Companies in the industry are generally asset-light and do not face a systematic exposure to climate change risks.
- Sustainability-related services is addressed in a pre-existing issue.

Recommendation

- Do not add issue based on the limited exposure to climate change risks, and services provided to customers related to climate change is captured in a pre-existing issue.

b. Customer Health & Safety – Do not add

IWG Comment(s)

- *“Customer health and safety is very important in the real estate industry due to the large amount of patrons and visitors working, living, socialising, and shopping within properties. This is also increasingly important as instances of public unrest or demonstrations and unfortunately, criminal or terrorist activities can occur within property assets. There is a lack of clear, relevant and comparable metrics in relation to measuring customer health and safety performance across the real estate sector.”* – Public Interest & Intermediaries

Analysis

- SASB considered the following key questions:
 - Are the services mentioned by the IWG member covered in the RES industry?
 - Is there evidence of risks/opportunities related to provision of superior ‘security’ services?
- Research indicated that this issue may be highly relevant for narrow aspects of the industry, but is unlikely to significantly impact company performance.
- The issue is likely more relevant to security dedicated firms outside of the scope of the RES industry.

Recommendation

- Do not add issue based on the narrow applicability to the industry.

c. Contractor Management – Do not add

IWG Comment(s)

- *“It is not uncommon for service providers to contract out certain real estate services to other providers. In doing so, they need to ensure that those suppliers of goods and services are meeting their own and the property owner’s standards. In instances where service standards are not being met, this can significantly impact the cost of performing real estate services resulting in reduced profitability and returns for owners.”* – Public Interest & Intermediaries
- *“Labor relations and union practices are important issues for certain industries involved in the provision of real estate services. For example, cleaning and security industries across different jurisdictions can be subject to significant workplace and union issues. Even in jurisdictions where legislation and industry standards exist, it is important for real estate service providers to undertake their own regular due diligence and enquiries to ensure ongoing management of potential workplace issues.”* – Public Interest & Intermediaries

Analysis

- SASB considered the following key questions:
 - What are the sustainability issues that may arise from selection and management of contractors/contracted labor?
 - Can the ‘Professional Integrity’ issue be expanded when consider ‘contractor management’ within it?

- Companies in the industry provide a variety of real estate related services. A limited number of such services rely on contracted labor.
- There was a lack of supporting evidence that the prevalence of this risk and opportunity across the industry is likely to significantly impact financial performance.

Recommendation

- Do not add issue as the issue is not widely applicable and evidence did not support the risk or opportunity of financial impact.

Appendix I: Summary of IWG Feedback on Issues

	Electric Utilities	Gas Utilities	Water Utilities	Waste Management	Engineering & Construction Services	Home Builders	Real Estate Owners, Developers & Investment Trusts	Real Estate Services
Environment	<ul style="list-style-type: none"> GHG Emissions & Energy Resource Planning Air Quality Coal Ash & Spent Fuel Water Management Ecological Impacts Electrical Equipment Lifecycle Impacts 		<ul style="list-style-type: none"> Energy Management Effluent Quality Management Water Scarcity 	<ul style="list-style-type: none"> Landfill Gas Management Operational Energy & Fleet Fuel Management Land Use & Ecological Impacts Air Quality 	<ul style="list-style-type: none"> Ecological Impacts of Construction Waste Management for Construction Materials 	<ul style="list-style-type: none"> Ecological Impacts of Construction Waste Management for Construction Materials 	<ul style="list-style-type: none"> Energy Efficiency of Buildings Land Use & Ecological Impacts – Due Diligence Resource Efficiency of Buildings Environmental Accidents & Remediation 	
Social Capital	<ul style="list-style-type: none"> Land Use & Community Relations 		<ul style="list-style-type: none"> Drinking Water Quality Fair Pricing & Access Community Relations 	<ul style="list-style-type: none"> Community Relations 	<ul style="list-style-type: none"> Community Relations Structural Integrity & Safety 			<ul style="list-style-type: none"> Customer Health & Safety
Human Capital	<ul style="list-style-type: none"> Workforce Health & Safety Employee Recruitment & Retention 		<ul style="list-style-type: none"> Employee Recruitment & Retention 	<ul style="list-style-type: none"> Workforce Health & Safety Labor Relations 	<ul style="list-style-type: none"> Workforce Health & Safety Workforce Diversity & Inclusion 	<ul style="list-style-type: none"> Workforce Health & Safety 	<ul style="list-style-type: none"> Managing Environmental & Socioeconomic Impacts of Properties 	
B. Model & Innovation	<ul style="list-style-type: none"> Downstream Energy Stewardship 	<ul style="list-style-type: none"> Downstream Emissions Management 	<ul style="list-style-type: none"> Climate Change Risk Exposure Downstream Water Efficiency 	<ul style="list-style-type: none"> Materials Recovery & Landfill Diversion 	<ul style="list-style-type: none"> Exposure to Shifting Energy Markets Environmental & Climate Change Services Lifecycle Impact of Buildings Environmental & Social Considerations in Site Selection 	<ul style="list-style-type: none"> Environmental Considerations in Design Environmental & Social Considerations in Site Selection Supply Chain Management 	<ul style="list-style-type: none"> Managing Environmental & Socioeconomic Impacts of Properties Climate Change Risk Exposure Corruption & Bribery Lobbying & Political Contributions Supply Chain Management Tenant Engagement 	<ul style="list-style-type: none"> Performance on Sustainability Services Contractor Management Climate Change Adaptation
Leadership & Governance	<ul style="list-style-type: none"> Management of the Legal & Regulatory Environment Grid Resiliency Safety Management 	<ul style="list-style-type: none"> Health, Safety & Emergency Management Management of the Legal & Regulatory Environment Distribution Network Resiliency Natural Gas Sourcing 		<ul style="list-style-type: none"> Management of the Legal & Regulatory Environment 	<ul style="list-style-type: none"> Business Ethics Bidding & Consulting Integrity Bidding & Consulting Integrity 			<ul style="list-style-type: none"> Transparent Information & Avoidance of Conflict of Interest

Significant concerns, seeking additional evidence & inputs – Section I
 Strong issues with reservations – Section II

New issue proposed by IWG members – Section III

Appendix II: Draft List of Disclosure Topics for Public Comment

The following table comprises issues that are likely to be presented for Public Comment on October 7, 2015, based on SASB’s review of IWG comments and additional research. Note, these issues are not final and are subject to change.

	Electric Utilities	Gas Utilities	Water Utilities	Waste Management	Engineering & Construction Services	Home Builders	Real Estate Owners, Developers & Investment Trusts	Real Estate Services
Environment	<ul style="list-style-type: none"> GHG Emissions & Energy Resource Planning Air Quality Coal Ash & Spent Fuel Water Management 		<ul style="list-style-type: none"> Energy Management Effluent Quality Management Water Scarcity 	<ul style="list-style-type: none"> Landfill Gas Management Operational Energy & Fleet Fuel Management Land Use & Ecological Impacts Air Quality* 	<ul style="list-style-type: none"> Ecological Impacts of Construction Waste Management for Construction Materials 	<ul style="list-style-type: none"> Ecological Impacts of Construction Waste Management for Construction Materials 	<ul style="list-style-type: none"> Energy Management of Buildings Water Management of Buildings Connectivity of Properties 	
Social Capital	<ul style="list-style-type: none"> Land Use & Community Relations 		<ul style="list-style-type: none"> Drinking Water Quality Fair Pricing & Access 	<ul style="list-style-type: none"> Community Relations* 	<ul style="list-style-type: none"> Community Relations Structural Integrity & Safety 		<ul style="list-style-type: none"> Design for Tenant Health 	
Human Capital	<ul style="list-style-type: none"> Workforce Health & Safety* 			<ul style="list-style-type: none"> Workforce Health & Safety Labor Relations 	<ul style="list-style-type: none"> Workforce Health & Safety 	<ul style="list-style-type: none"> Workforce Health & Safety 		
B. Model & Innovation	<ul style="list-style-type: none"> Downstream Energy Stewardship 	<ul style="list-style-type: none"> Downstream Emissions Management 	<ul style="list-style-type: none"> Climate Change Risk Exposure* Downstream Water Efficiency 	<ul style="list-style-type: none"> Materials Recovery & Landfill Diversion 	<ul style="list-style-type: none"> Exposure to Shifting Energy Markets* Environmental & Climate Change Services Lifecycle Impact of Buildings 	<ul style="list-style-type: none"> Environmental Considerations in Design Environmental & Social Considerations in Site Selection 	<ul style="list-style-type: none"> Management of Tenant Impacts Climate Change Risk Exposure 	<ul style="list-style-type: none"> Performance on Sustainability Services Contractor Management
Leadership & Governance	<ul style="list-style-type: none"> Public Safety* Management of the Legal & Regulatory Environment Grid Resiliency 	<ul style="list-style-type: none"> Health, Safety & Emergency Management Management of the Legal & Regulatory Environment* Distribution Network Resiliency 		<ul style="list-style-type: none"> Management of the Legal & Regulatory Environment 	<ul style="list-style-type: none"> Business Ethics Bidding & Consulting Integrity 	<ul style="list-style-type: none"> Supply Chain Management* Wood Sourcing* 		<ul style="list-style-type: none"> Transparent Information & Avoidance of Conflict of Interest

* indicates topics with pending decisions

Appendix III: Sample Accounting Metrics

The following table lists the metrics, as they stand currently, for the sustainability topics determined by SASB to likely constitute material information for companies in the Electric Utilities industry, following IWG feedback. This table provides sample metrics for reference only. The accounting metrics are currently being revised, and final metrics put forward for public comment may be different from the ones outlined below.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Greenhouse Gas Emissions & Energy Resource Planning	Gross global Scope 1 emissions, percentage covered under a regulatory program	Quantitative	Metric tons (t) CO ₂ -e, Percentage (%)	IF0101-01
	Description of long-term and short-term strategy or plan to manage Scope 1 emissions, emission-reduction targets and an analysis of performance against those targets	Discussion and Analysis	n/a	IF0101-02
Air Quality	Air Emissions for the following pollutants: NO _x (Excluding N ₂ O, SO _x , particulate matter (PM), Pb, and Hg, percentage of each in or near areas of dense population	Quantitative	Metric tons (t), Percentage (%)	IF0101-03
Water Management	(1) Total water withdrawn and (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative	Cubic Meters (m ³), Percentage (%)	IF0101-04
	Number of incidents of non-compliance with water quality permits, standards, and regulations	Quantitative	Number	IF0101-05
	Discussion of water management risks and description of management strategies and practices to mitigate those risks	Discussion and Analysis	n/a	IF0101-06
Coal Ash & Spent Fuel Management	Amount of total waste and secondary materials generated from operations, percentage hazardous, percentage recycled	Quantitative	Metric tons (t), Percentage (%)	IF0101-07
	Number of coal combustion residual impoundments (CCR), broken down by EPA Hazard Potential Classification and EPA structural integrity assessment	Quantitative	Number	IF0101-08
	(1) Total amount of spent radioactive fuel stored on site (2) total storage capacity	Quantitative	Metric tons (t)	IF0101-09

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Land Use & Community Relations	Number of permit and/or licensing (1) denials (2) modifications (3) approvals, and amount of generation or transportation capacity affected by each ⁵	Quantitative	Number, Megawatts (MW)	IF0101-10
	Discussion of community engagement processes to identify and mitigate concerns regarding project environmental and community impacts	Discussion and Analysis	n/a	IF0101-11
Downstream Energy Stewardship	Percentage of load sales served by smart grid technology	Quantitative	Percentage (%)	IF0101-12
	Customer electricity savings from efficiency measures, percentage required by regulations	Quantitative	Megawatt hours (MWh)	IF0101-13
	Discussion of efforts to improve energy efficiency and demand response	Discussion and Analysis	n/a	IF0101-14
Management of the Legal & Regulatory Environment	Discussion of controls over managements relations with public utility commissions	Discussion and Analysis	n/a	IF0101-15
	(1) Number of open cases stemming from allegations of overcharging (2) number of cases resolved, percentage resulting in a settlement	Quantitative	Number, Percentage (%)	IF0101-16
	(1) Number of customers in markets subject to renewable portfolio standards (RPS), (2) progress towards RPS requirement	Quantitative	Number, Percentage (%)	IF0101-17
	(1) Number of customers served by net metering standards, (2) energy purchased through net metering	Quantitative	Number, Megawatt hours (MWh)	IF0101-18
Grid Resiliency	(1) Number of data security breaches, (2) number of customers affected, and (3) percentage involving confidential information	Quantitative	Number, Percentage (%)	IF0101-19

⁵ Note to IF0101-10—The registrant shall discuss permit or license modifications that resulted in significant deviations from the registrant’s original application.

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
	(1) System Average Interruption Duration Index (SAIDI) (2) System Average Interruption Frequency Index (SAIFI) (3) Customer Average interruption Duration Index (CAIDI)	Quantitative	Number, Minutes	IF0101-20



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