



NW CCC
NORTHWEST
CONSTRUCTION
CONSUMER
COUNCIL

Sustainability and the Impacts on Construction



**LEAD
WITH EQUITY**



**REDUCE
CARBON
POLLUTION**



**1,000,000
TREES**
PLANT 1 MILLION
TREES BY
2020



**PREPARE
FOR CLIMATE
IMPACTS**



**CREATE A
CLEAN ENERGY
FUTURE**



**WORK
WITH THE
COMMUNITY**



King County

Owners Perspective: Implementing Sustainability Goals in Your Project

Nori Catabay
Green Building Team Program
Manager

Liz Korb Matson
Capital Project Manager

96



97



98



99

King County Strategic Plan

Goal:

Environmental Sustainability – safeguard and enhance County’s natural resources and environment.

Objective:

Minimize County’s operational environmental footprint

Green Building and Sustainable Development Ordinance 17709

The intent of this policy is to ensure that the planning, design, construction, remodeling, renovation, maintenance and operation of any King County-owned or financed capital project is consistent with the latest green building and sustainable development practices.

In April 2011, King County Executive Dow Constantine proposed a series of actions that will reduce climate emissions from county operations, save energy and money, and promote joint efforts with cities to reduce community-scale green house gas emissions.



100

Green Building Ordinance

- Platinum for Scorecard and LEED projects
- Minimum Performance Requirements
 - Meet SCAP and Energy Plan requirements for emission and energy reductions
 - 85% C&D diversion rate by 2025, Zero Waste of Resources by 2030
 - King County Stormwater Design Manual
- Green Operations and Maintenance



101

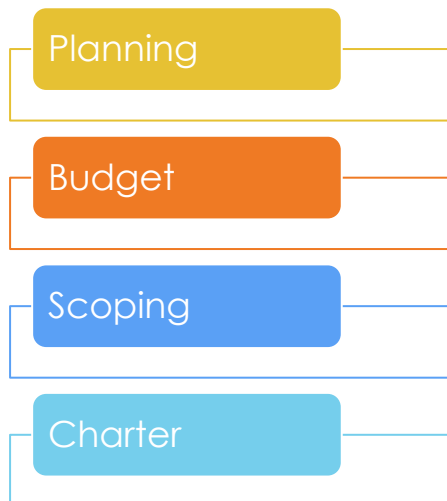
Project Delivery Resources

- Green Building Certifications
- Capital Project Management Manuals
- Carbon Calculator and Mitigation Strategies Handbook
- Life Cycle Cost Analysis and Social Cost of Carbon
- Ecocharrettes
- GHG Mitigation Report
- Energy Modeling
- Sustainable Material Databases

102

Working Together

Awareness Upstream



Integration Across Disciplines



103

Performance Measures

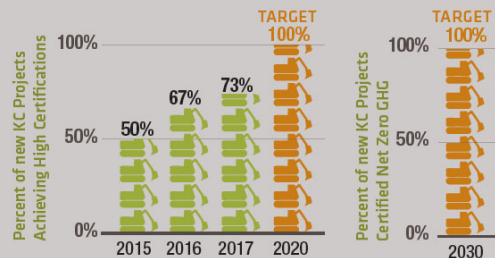


KING COUNTY OPERATIONS GOAL

King County-owned buildings and infrastructure will be built, maintained, and operated consistent with the highest green building and sustainable development practices.

County-Owned Capital Projects Achieving Highest Possible Certification Levels

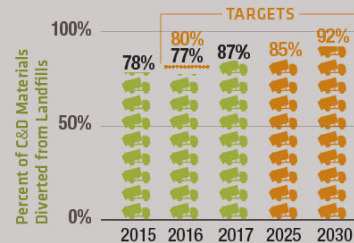
Target: 100% of projects achieve Platinum by 2020
Target: 100% of new projects certified net zero GHG emissions by 2030



The number of completed projects achieving Platinum-level status has increased 23% compared to 2015 performance data.

County Project Construction and Demolition (C&D) Materials Diverted from Landfills

Target: 80% by 2016, 85% by 2025, zero waste of materials by 2030



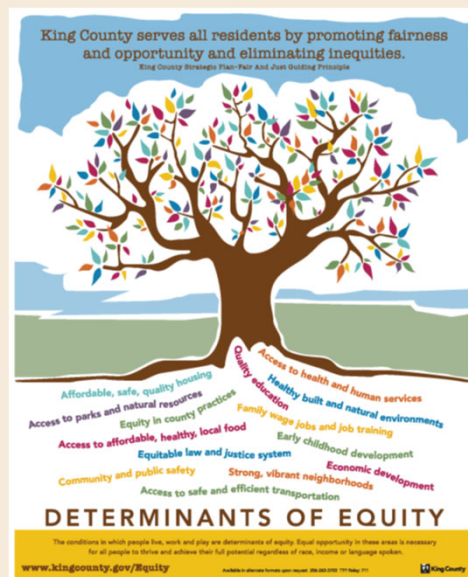
On average, King County construction projects met the 2016 target milestone of 80% C&D diversion.

104

Equity and Social Justice

The condition in which people live, work and play are determinants of equity. Equal opportunity in these areas is necessary for all people to thrive and achieve their full potential regardless of race, income or language spoken.

- Healthy built and natural environments.
 - Access to safe and efficient transportation.
- Strong, vibrant neighborhoods.
- Family wage jobs and job training.

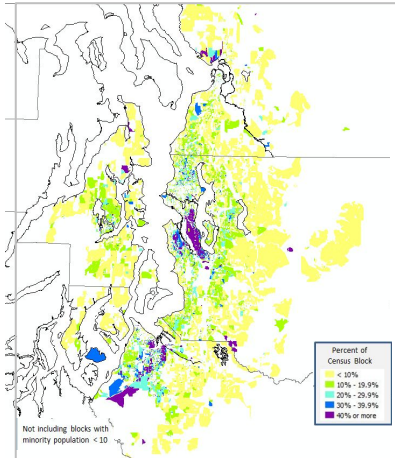


Building for a Healthy Environment in King County

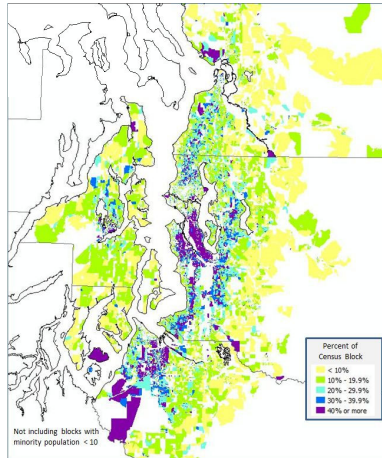
105

Equity and Social Justice

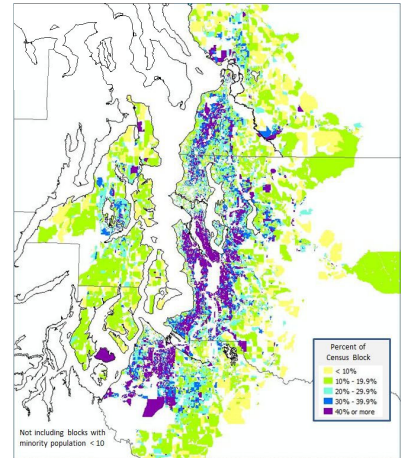
Census 1990,
% Persons of
Color



Census 2000,
% Persons of
Color



Census 2010,
% Persons of
Color



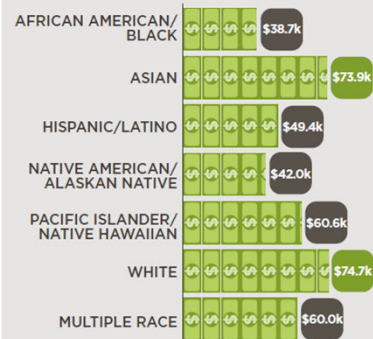
106

Equity and Social Justice

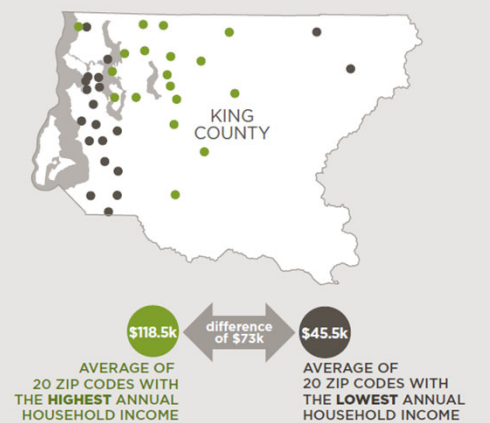
King County HH Income by Race & Place

BY RACE

■ ABOVE KC AVERAGE
— KC AVERAGE: \$71,175
■ BELOW KC AVERAGE



BY PLACE



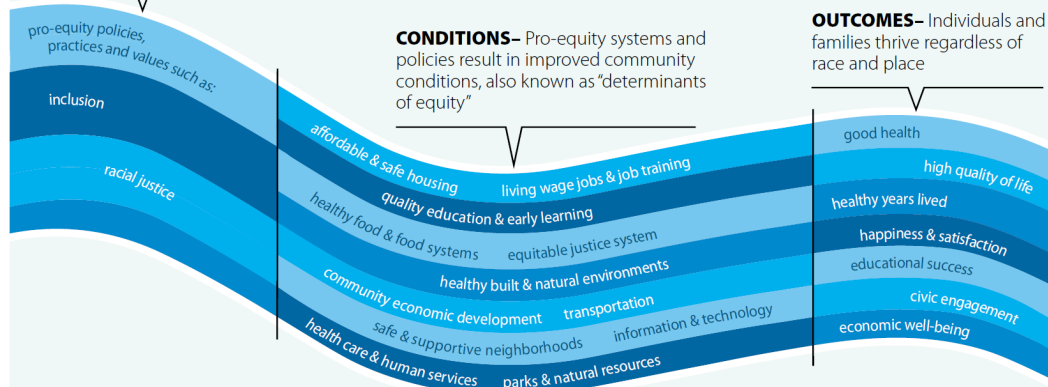
107

Equity and Social Justice

Healthy Stream Creates Equity

PRO-EQUITY POLICIES, PRACTICES & SYSTEMS–

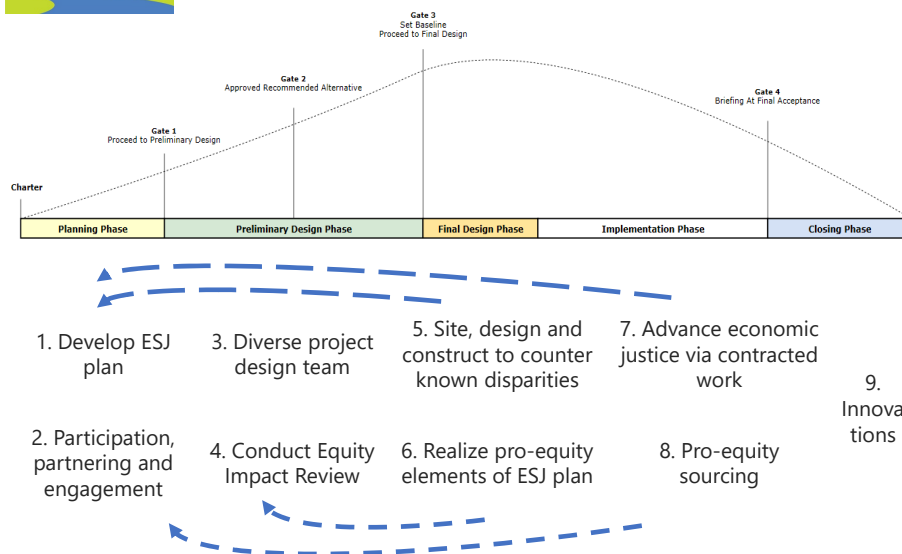
For greatest and most effective impact, King County is focusing “upstream” to address root causes and be pro-equity



108



Exemplary ESJ practices throughout capital project development lifecycle

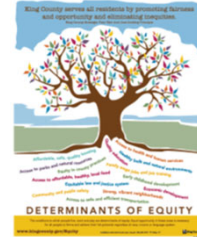


109

Equity and Social Justice

Triple Bottom Line Approach

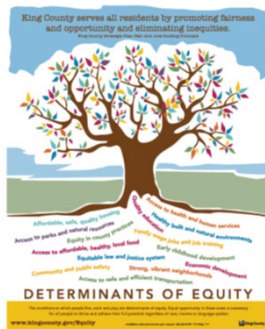
- Financial Stewardship
- Equity and Social Justice
- Sustainability



26 ESJ points out of
81 Scorecard points
= 1/3 of total points

110

Equity and Social Justice



Procurement

RFPs and Contracts
Evaluation Criteria
Experience
Scope of Work
Deliverables
Level of Effort
Budget

***“Approach to Work** - The County will evaluate the Proposer’s narrative describing their approach to completing the Scope of Work as identified in the RFP. The proposal should identify and propose approaches to successfully address critical project issues including: 1) conceptual design challenges; 2) opportunities for technical innovation; 3) **integration of equity and social justice elements into design**; 4) sustainable design and certification; 5) permit and other regulatory requirements; 6) process for incorporation of employee input into design; and 7) up to two other elements the Proposer believes will constitute challenges to successful project completion.”*

111

King County Strategic Climate Action Plan



2015 SCAP

SECTION 1: Reducing Emissions

- Transportation & Land Use
- Buildings & Facilities Energy
- Green Building
- Consumption & Materials Management
- Forests and Agriculture

SECTION 2: Preparing for Impacts

We work at two scales:



Community



Government Operations

112

Our Goal

Priority Action: Develop 10 Net Zero Energy and Living Building Challenge projects by 2020.



Your plan is the best that I've seen. It has bold interim and bold final targets, and it proposes policies that would move the county powerfully in the right direction.

Denis Hayes, President, Bullitt Foundation, Co-Founder of Earth Day

Awesome! But let's be honest. Reality. Challenges.

113

Challenges

- Diversity of facilities
- 24/7 operations
- Major consequences if systems don't work
- Few models for what we manage



114

So how did we move forward?

- **Strong direction** from Executive to pilot these approaches across our agencies and lines of business.
- **Understanding** that combatting climate change will require fundamental changes in how we design and manage built environment.
- **Empowerment of employees** to surface barriers and policy issues.

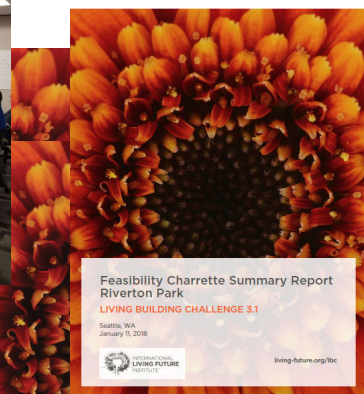
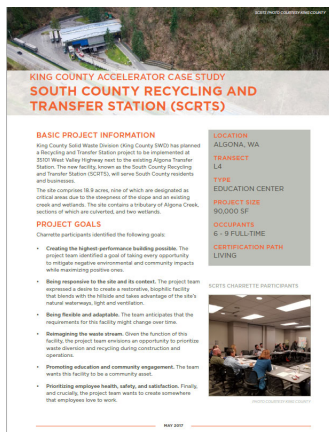
115

So how did we move forward?

- **Partnership** with ILFI and Bullitt Foundation to support “Living Building Accelerator.”
- **Shared resources** for feasibility assessments and technical assistance.
- **“We can figure this out attitude”** of staff and partners.

116

Extensive Collaboration



117

King County Priorities Mirror LBC

LIVING BUILDING CHALLENGE				Crosswalk of Living Building Challenge Imperatives with King County Policies/Priorities and LEED Certification	
PLACE	LIVING BUILDING CHALLENGE			KC Policies or Priority	LEED
	BUILDINGS	RENOVATIONS	LANDSCAPE + INFRASTRUCTURE		
PLACE	SCALE JUMPING	SCALE JUMPING	SCALE JUMPING	01. LIMITS TO GROWTH	GMA, Critical Area Ord, Flood District
				02. URBAN AGRICULTURE	Food Access, Kitchen Cabinet
				03. HABITAT EXCHANGE	Open Space, Land Conservation
				04. HUMAN POWERED LIVING	SCAP, Alternative Transportation, EV Infrastructure, Employee Transit Pass, Healthy Incentives
WATER			SCALE JUMPING	05. NET POSITIVE WATER	SCAP, NPDES
ENERGY			SCALE JUMPING	06. NET POSITIVE ENERGY	SCAP
HEALTH & HAPPINESS				07. CIVILIZED ENVIRONMENT	Healthy Incentives, Indoor Air Quality
				08. HEALTHY INTERIOR ENVIRONMENT	EPP, No Smoking, Green O&M
				09. BIOPHILIC ENVIRONMENT	Work Place Environment
MATERIALS			SCALE JUMPING	10. RED LIST	ESJ, EPP, LHVMP, Healthy Materials, IAQ, Work Place Environment, Water Quality, Product Stewardship
				11. EMBODIED CARBON FOOTPRINT	EPP, ESJ, FSC Certified Wood
				12. RESPONSIBLE INDUSTRY	Regional Sourcing, Economic Development
				13. LIVING ECONOMY SOURCING	SCAP, C&D Diversion Targets, Zero Waste of Resources, SWD Comp Plan
EQUITY				14. NET POSITIVE WASTE	
				15. HUMAN SCALE + HUMANE PLACES	ESJ, Air Quality
				16. UNIVERSAL ACCESS TO NATURE + PLACE	Government is exempted
			SCALE JUMPING	17. EQUITABLE INVESTMENT	ESJ, Star Communities
BEAUTY				18. JUST ORGANIZATIONS	1% for the Arts
				19. BEAUTY + SPIRIT	Communication and Marketing
				20. INSPIRATION + EDUCATION	

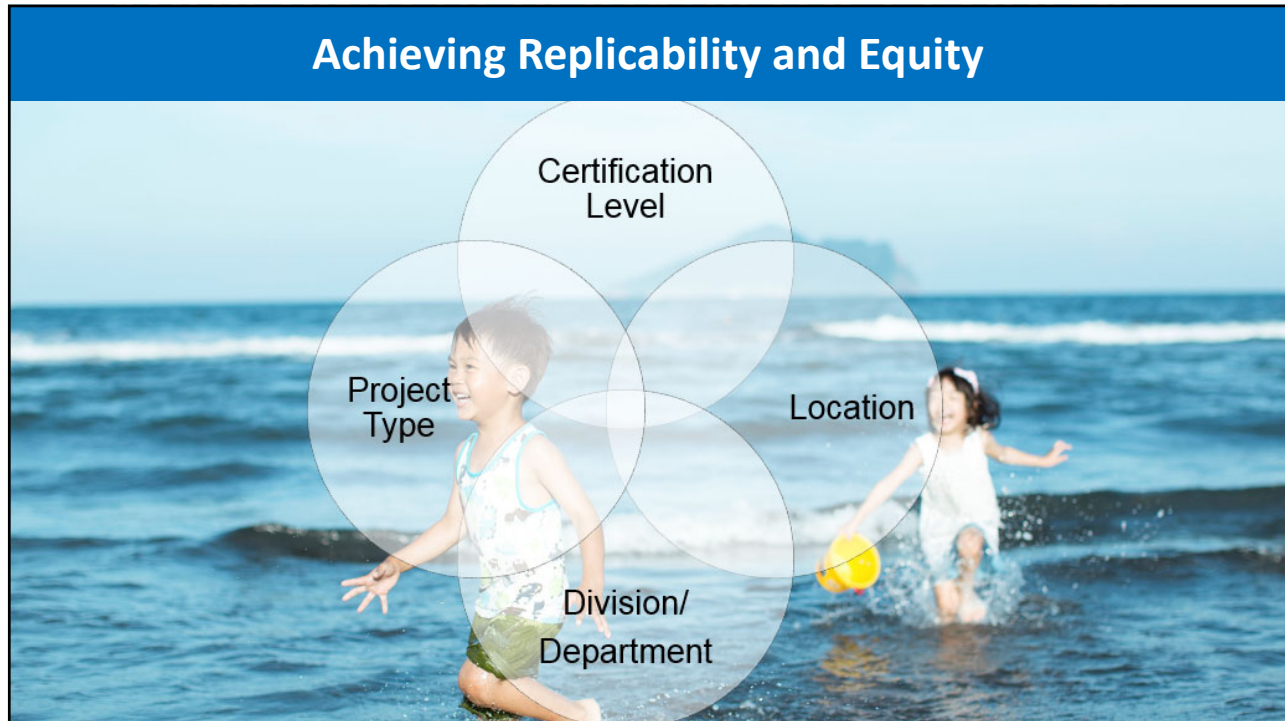
118

Countywide Approach


The collage features various King County initiatives and programs, including:

- King County Land Conservation Initiative**: A map showing green space and trails.
- Local Food Initiative**: A 2017 annual report cover.
- Orca**: A blue and white logo.
- Green Direct**: A wind turbine with the text "A clean energy partnership."
- Red2Green**: A logo with a red and green leaf.
- Mindful Materials**: A logo with a green leaf.
- Living Building Challenge Imperatives**: A logo with a red flower.
- Limits to Growth**: A logo with a green leaf.
- Urban Agriculture**: A logo with a green leaf.
- Net Positive Water**: A logo with a green leaf.
- Net Positive Energy**: A logo with a green leaf.
- Red List**: A logo with a red leaf.
- Embodied Carbon Footprint**: A logo with a green leaf.
- Human Scale + Humane Places**: A logo with a green leaf.
- Universal Access to Nature + Place**: A logo with a green leaf.
- Beauty + Spirit**: A logo with a green leaf.
- Inspiring + Education**: A logo with a green leaf.
- Just.**: A logo with a green leaf.
- The Social Justice Label**: A logo with a green leaf.


119




120



ZEROENERGY
CERTIFICATION



Petal
Certification



LIVING
BUILDING
CHALLENGE

SCAP Priority Action: By 2010, identify 10 Net Zero Energy or Living Building Challenge projects.

- 16 projects identified, 9 projects registered
- 1 official certified Zero Energy Project
- **6 divisions:** Parks, Wastewater, Transit, Solid Waste, Housing Finance, Airport
- **Project types:** Office/Workshop, industrial, affordable housing, infrastructure, classroom, comfort station, bus station, storage facility

121



King County Parks North Utility Maintenance Facility
Marymoor Park, Redmond, WA

- 2007 LEED Certified building
- Energy retrofit project achieved Zero Energy certification 2019
- Two-building complex: office/shop building and parking/maintenance “hangar”



122



Crew building break room:

Energy upgrades included replacing all lighting with high-efficacy LED lamps and upgrading the HVAC system with a premium efficiency variable refrigerant flow heat pump system.

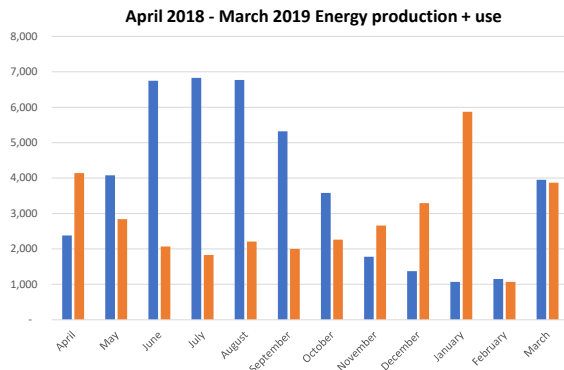


Crew building workshop:

Facility is meeting net-zero energy status, despite installation and use of a new plasma cutter to fabricate metal bollards and other equipment for park facilities.

123

Project is meeting “**Net Zero + 25%**” goal:
generating 25% more energy than it consumes



Aerial view of solar panel installation

■ 2017-2018 Solar Energy Production (45,030 kWh)
■ 2017-2018 Facility Consumption (34,110 kWh)

124

South County Recycling and Transfer Station

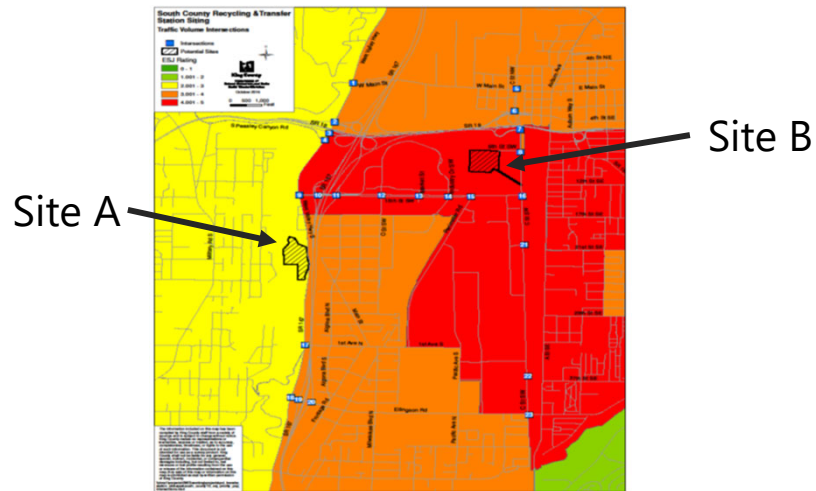


- **Type:** Industrial/office
- **Location:** Algona
- **Status:** Design Phase
- **Description:** Will design, permit and construct a new transfer and recycling facility to replace existing Transfer Station
- **Bullitt Foundation Grant:** Provided technical assistance from ILFI for ZE/LBC Feasibility Assessment



125

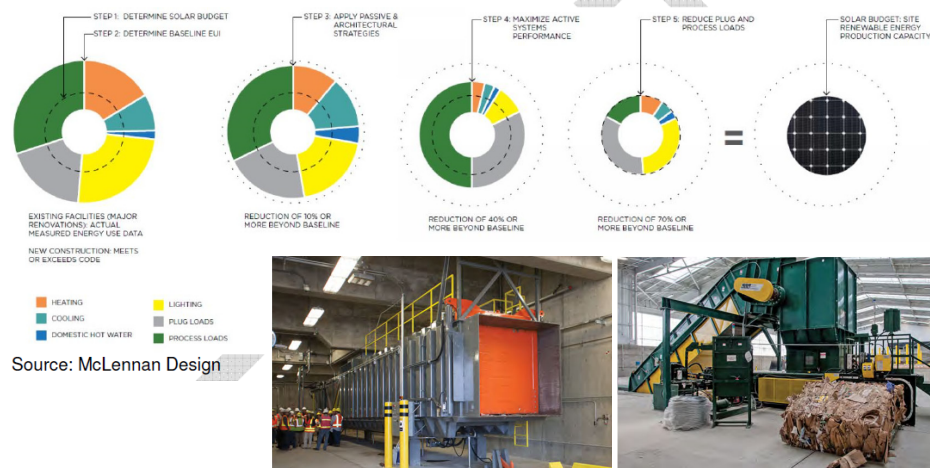
South County Recycling and Transfer Station Siting Equity Impact Review



126

Energy Strategies for Industrial facility

Figure 4-2. Path to Net Positive Energy Diagram, Hypothetical Project



127



128