



2021 IMPACT REPORT

WITH OUR FRIENDS, THIS YEAR WE...

- pg. 3 passed the nation's first Industrial Symbiosis Bill
- pg. 4 unveiled the Pacific Northwest's first Renewable Hydrogen Action Plan
- pg. 5 launched a campaign to build a Clean Materials jobs engine
- pg. 6 expanded our Innovation Lab to help more communities innovate

...AND MORE!

Artwork by Chloe de Campos

THIS MOMENT IS A TRANSFORMATIVE OPPORTUNITY FOR OUR COMMUNITIES AND OUR PLANET

When we launched CSI some six years back, we couldn't foresee or even hope for passage of a bipartisan federal infrastructure bill that invests over a trillion dollars: \$1,200,000,000,000!

But that happened in late 2021. It's not only a big f***in' deal, it's a transformative opportunity for our communities and our planet.

Now the question turns to: *How can we spend this money smart, to generate the most possible long-term value we can for our communities?*

CSI's mission is more timely and urgently needed than ever: 'to catalyze state-of-the-art sustainable infrastructure solutions that help communities of every kind thrive economically, socially, and environmentally.

Every community is unique, but infrastructure challenges and opportunities are top priorities in every one of them. And communities of all kinds are wrestling with tough challenges shared by many others. CSI helps local, state, and federal leaders – across the political and geographic spectrum – invest in smart solutions with wide applicability.

We've made big progress together in 2021. My thanks to each of you for all the generous support you've shared to make CSI's success possible. This Impact Report highlights CSI's biggest breakthrough progress – on industrial symbiosis, renewable hydrogen, clean materials, and through our Innovation Lab.

All the exciting stuff you'll read about here positions CSI for even greater impact in 2022.

Many billions in infrastructure investment decisions will be made in our local communities beginning this year. These decisions will define our communities for decades to come and present enormous opportunities to build a sustainably thriving future by getting the most value from these investments.

CSI is mighty, but we'll never be big enough to help all our communities step up to this unprecedented moment. We can help build a culture of infrastructure innovation, and scale investment in best practices, smart policies, and local capacity to ensure all our communities can innovate their way to a better future.

Thanks for helping CSI build a brighter future for the Pacific Northwest & beyond!



Rhys Roth

CSI Founder and Executive Director

BIPARTISAN LEADERSHIP DELIVERS POLICY BREAKTHROUGH

Washington State adopted the nation's first 'Industrial Symbiosis' program with the passage of SB 5345 in the 2021 legislative session, the fruition of bipartisan leadership and CSI support over the course of three years of collaborative effort.



"...it is important that we look for creative ways to support industry growth. **Industrial Symbiosis is an idea whose time has come.** It addresses the critical need of industrial businesses to reduce costs and increase profitability, and the public need to improve environmental performance."

SENATOR SHARON BROWN



Industrial Symbiosis (IS) is a ground-breaking, triple-bottom-line approach to economic development, where one industry's waste – energy, water, or materials – becomes another industry's valued resource. The concept of IS was born in Kalundborg, Denmark and evolved over several decades into a network of over a dozen major facilities capturing and reusing waste resources. Today, for this city of only 17,000 residents, IS generates \$28 million in annual economic value, saves nearly a billion gallons of water annually, and cuts climate pollution by over 600,000 tons a year.

CSI helped bring IS to the attention of bipartisan Washington state lawmakers in 2017, 2018, and 2019 through tours of Denmark put on by i-SUSTAIN and made possible with the generous support of the Scan Design Foundation.

Back home, CSI worked with these State Legislators – over two dozen in all – to build support and momentum for IS action and leadership. In 2018, the Legislature commissioned a CSI-produced guide to industrial symbiosis for economic development efforts in Raymond, WA. In 2019, CSI contributed to a state-commissioned study of IS options, which in turn led to the unanimous passage of the new program in 2020 – only to have it vetoed in the face of plummeting state revenues in the early days of the pandemic.

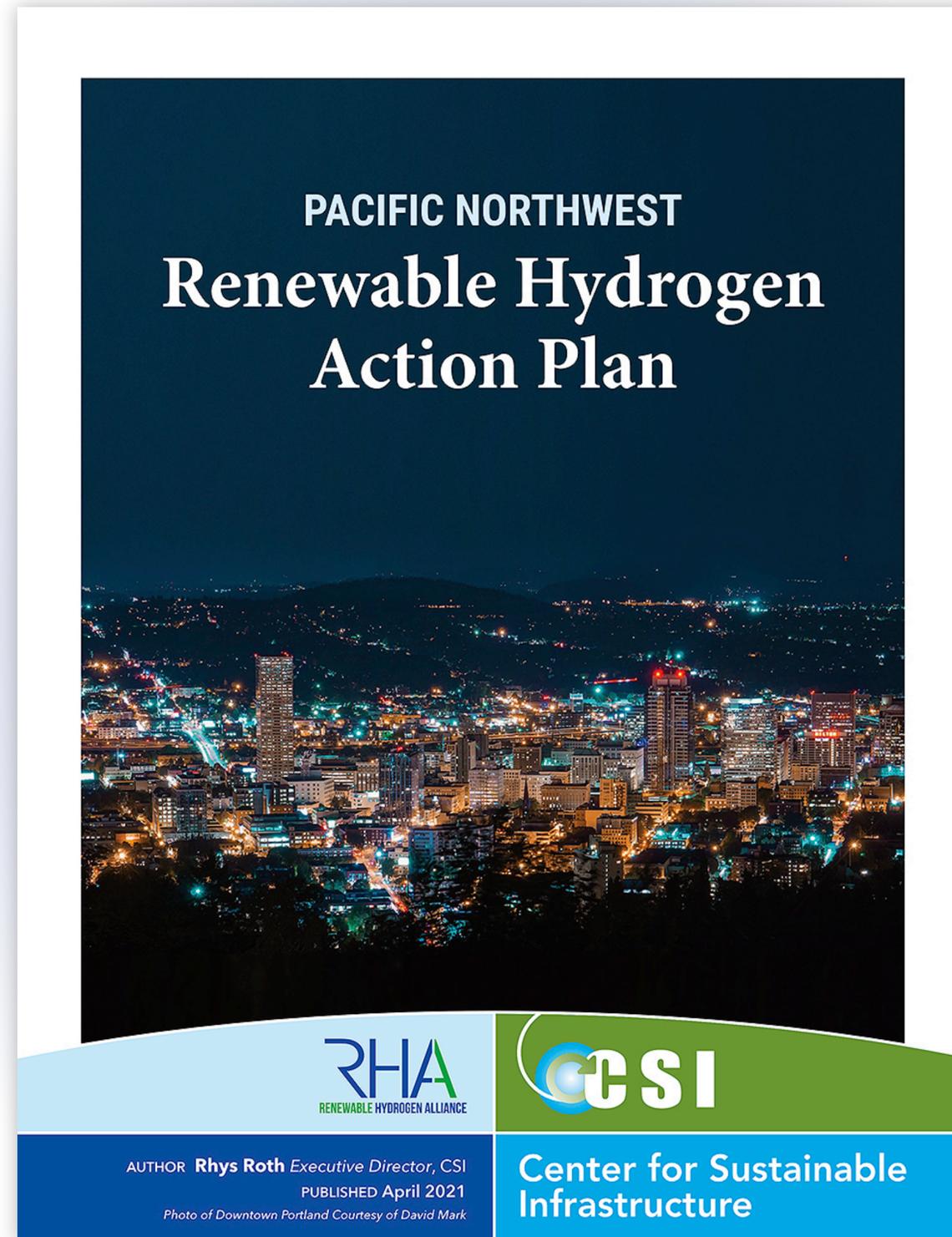
But **despite that setback triggered by Covid, legislators came back in 2021 to pass SB 5345.** Passage was led by prime sponsor, Sen. Sharon Brown, R-Kennewick, with strong support from the bi-partisan coalition of legislators who – inspired by Denmark's example – worked across party lines to deliver this groundbreaking new IS law for the benefit of Washington communities.



PACIFIC NORTHWEST RENEWABLE HYDROGEN ACTION PLAN

In May 2021, CSI and the [Renewable Hydrogen Alliance](#) unveiled the Pacific Northwest's first Renewable Hydrogen (RH2) Action Plan, built from interviews and consultations with 50 of the region's RH2 thought leaders and innovators.

[The Pacific Northwest Renewable Hydrogen Action Plan](#) posits that the time has come for non-fossil hydrogen to provide carbon-free solutions for industry segments that are especially hard to electrify or decarbonize, such as aviation, marine, manufacturing, heavy transportation, seasonal energy storage, backup power and fertilizer. Recommendations fall into two categories:



1ST RECOMMENDATION: *Invest in and Build RH2 Deployment Hubs*

RH2 Deployment Hubs connect RH2 production with robust demand, supported by infrastructure to store and deliver RH2 to maximize customer convenience and satisfaction.

2ND RECOMMENDATION: *Create a long-term RH2 Roadmap*

To realize the region's full clean energy potential, we need a long-range roadmap that integrates RH2 into the PNW energy mix and creates a supportive ecosystem for RH2 production and use.

Inspired by our plan, the prime sponsor of Washington's groundbreaking Climate Commitment Act of 2021, [Sen. Reuven Carlyle](#), launched an effort to set Washington on a long-term course for global leadership in RH2.

And at the local level, just this year...

- Port of Seattle began studies of RH2 as a future vehicle and maritime fuel source
- Tacoma Power became the first utility in the nation to offer a special rate to electrolytic RH2 producers
- Douglas PUD and Lewis County's Twin Transit secured \$4M in state funding to build RH2 fueling stations in Wenatchee and Chehalis

After cohering stakeholders in common purpose, writing the action plan, and catalyzing legislation, we are seeing new momentum and action on the ground for accelerating this promising piece of the climate puzzle.

CLEAN MATERIALS: A NEW JOBS ENGINE FOR THE NORTHWEST

In 2020, CSI's blueprint report [From Waste Management to Clean Materials](#) detailed a clear pathway to create tens of thousands of clean materials jobs across our region by 2040, along with urgently-needed improvements for the health and well-being of people and the planet.

This past year, CSI launched a robust effort to build and cohere a vibrant “clean materials” industry in the Pacific Northwest, following the clean energy playbook of the past 20 years. Growing a new clean materials sector is a multi-year enterprise, but we’ve made significant progress in the past year.

For example:

MAY 25 Co-hosted with the CleanTech Alliance, we kicked off our May 25 event, [Clean Materials: A New Economic Engine](#), with a message from US Senator Jeff Merkley.

"This is exactly the kind of clean materials, whole-system thinking that is not only going to help our planet but also create millions of good-paying jobs."

Jeff Merkley
U.S. Senator

MAY 25

Sustainability pioneers Dave Chen, Christine Ervin, and Nancy Floyd followed with an op-ed in the [Portland Business Journal](#).

"We believe that 'clean materials' can be the new clean energy, and that the Pacific Northwest will prosper by accelerating this emerging market... While transforming energy is fundamental to addressing climate change, it's about half of the solution. That's why we see mounting interest today in tackling the rest of the picture: what we make and how we make, use and dispose of it."

JUNE 16

Event #2 in the Discussion Series, [Micro Businesses, Macro Opportunity](#), focused on the role our smallest businesses can play in the emerging clean materials economy. Six key leaders explored how this often-overlooked part of our economy can access opportunity and accelerate the promise of clean materials: good jobs, healthier communities, a sustainable planet, and broadly shared prosperity.

JUNE 23

[Fortune Magazine](#) leaned on CSI's expertise to inform its analysis of Amazon's climate initiative, which shines a spotlight on the company's far-reaching supply chain emissions.

NOVEMBER 16

The culminating event for 2021, [From Discussion to Action](#), homed in on action – concrete strategies to grow our clean materials industry into the Pacific Northwest's next job-creating economic powerhouse. And we explored exciting new initiatives to galvanize this emerging clean materials industry and put the PNW at the forefront of change and innovation in one of the world's most important sectors.

SEPTEMBER 21

In the third event, [Cleaning the Chain](#), we learned what some of our largest businesses are doing to drive positive change throughout their supply chains.

"Ideally, there would be a fully transparent and optimized supply chain based on cost and carbon efficiency. When I choose a supplier, I would like to be able to have full visibility into the embodied carbon throughout the full value chain... then I'll be able to account for the carbon intensity of that supply chain in my investment and procurement decisions at any point."

Vanessa Miler-Fels
Microsoft's Director of Energy Innovation and Impact

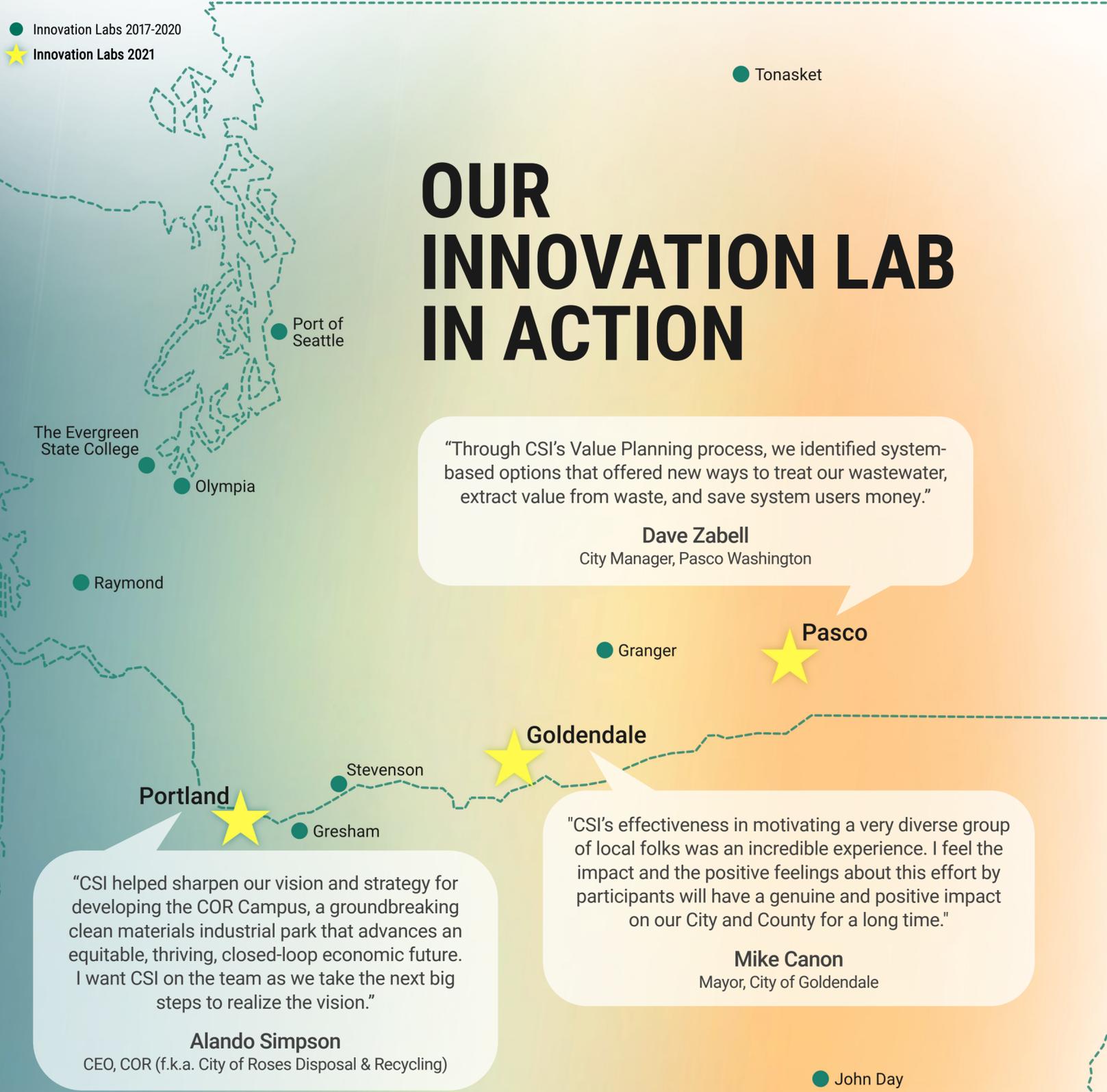
THESE ARE THE FACES OF THE CLEAN MATERIALS REVOLUTION



U.S. SENATOR JEFF MERKLEY, NICOLE BASSETT, ALANDO SIMPSON, TERRY MCDONALD, METRO CLLR. JUAN CARLOS GONZÁLEZ, CHRISTINE ERVIN, NANCY FLOYD, DAVE CHEN, MAUD DAUDON, LISA SMITH, YUMIKO DAMASHEK, JESSE FOSS, WA SENATOR MONA DAS, KATHLYN KINNEY, RACHELLE AMES, MOJI IGUN, NICO ONODA-MCGUIRE, VANESSA MILER-FELS, AYLA OLVERA, LISA BROWN, MARCUS BARAM, DAVID ALLAWAY

OUR INNOVATION LAB IN ACTION

● Innovation Labs 2017-2020
★ Innovation Labs 2021



"Through CSI's Value Planning process, we identified system-based options that offered new ways to treat our wastewater, extract value from waste, and save system users money."

Dave Zabell
City Manager, Pasco Washington

"CSI's effectiveness in motivating a very diverse group of local folks was an incredible experience. I feel the impact and the positive feelings about this effort by participants will have a genuine and positive impact on our City and County for a long time."

Mike Canon
Mayor, City of Goldendale

"CSI helped sharpen our vision and strategy for developing the COR Campus, a groundbreaking clean materials industrial park that advances an equitable, thriving, closed-loop economic future. I want CSI on the team as we take the next big steps to realize the vision."

Alando Simpson
CEO, COR (f.k.a. City of Roses Disposal & Recycling)

CSI's [Innovation Lab](#) brings community leaders and local infrastructure decision-makers proven tools and expertise to develop innovative, locally-tailored solutions to deliver bigger, broader community benefits through smarter infrastructure investments.

2021 PROJECT HIGHLIGHTS

1. Building Infrastructure that Builds Community Training Sessions

CSI teamed up with the Willamette Partnership to pilot training workshops for the people who help communities plan their infrastructure investments. The trainings gave them tools to reimagine the role infrastructure can play in building a better future. The trainings – for professionals in the Pacific Northwest and Great Lakes regions – distill the experience and best practices of CSI's Innovation Lab to get the most value from infrastructure planning, design, and implementation.

2. Regional Economic Diversification Summit (REDS) with Klickitat County

CSI helped local agencies around Goldendale create an integrated, coordinated strategy for economic and community development. Built on a positive vision, the strategy centers on: Clean Energy; Resilient, Affordable Infrastructure; and Livability – with several projects in each pillar. The effort culminated in a highly successful REDS, a virtual event that drew over 60 participants, half from federal and state funding agencies, to learn about and offer support to the community.

3. Value Planning with the City of Pasco

Pasco enlisted the CSI Innovation Lab to help them reimagine their strategy to modernize their aging and overloaded industrial wastewater treatment facility that serves their booming local food processing industry. CSI's world-class technical team helped stakeholders develop an integrated strategy that addresses current deficiencies and enables future growth through a series of distributed solutions. This portfolio of solution strategies...

- enables more efficient, data-driven, whole-system management
- leverages anaerobic digestion to produce renewable gas and utilizes algae cultivation to remove nitrogen pollution
- allows the City to phase in facility upgrades more affordably, while meeting water quality standards and enabling the food processing sector to grow in Pasco.

OUR VISION

CSI's mission is to catalyze state-of-the-art sustainable infrastructure solutions that help communities of every kind thrive economically, socially, and environmentally.

Our powerful proposition: Pivoting to sustainable infrastructure is one of the biggest levers we have to tackle our toughest challenges – from climate change to inequitable prosperity to crippling cultural divisions – and together build a thriving future for everyone.

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SUPPORT OUR WORK



Make the gift that's right for you! Support CSI's work to build a brighter future for our communities and our planet.

DONATE

ENGAGE & PLUG IN



Help us help you! Tell us your action ideas and what you want to know. How can we help bring innovative solutions to your community?

[Contact us!](#)

A HUGE THANK YOU TO OUR 2021 SPONSORS & FUNDERS!



Center for Sustainable Infrastructure

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