STAFF REPORT

DATE: February 10, 2022

TO: Bicycling, Transportation and Street Safety Commission (BTSSC)

FROM: Brian Abbanat, Senior Transportation Planner
Jennifer Donofrio, Bicycle / Pedestrian Coordinator

SUBJECT: City of Davis / ROAM Smart Lock Secure Bike Parking Pilot Project

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Recommendations

1. Receive presentation on planned pilot project in Davis using ROAM-developed bicycle locks installed on Davis bike racks.
2. Provide comments and feedback.

Fiscal Impact

The recommended actions themselves do not have any fiscal impact. The City is providing staff time use of public bike racks for the pilot project.

Background and Analysis

Staff Note: The City and ROAM (a private start-up company) have been partnering on the development of an ultra-secure, publicly available smart lock that is designed to mount to the City's standard "lightning bolt"-style bike rack. The purpose of this partnership is to help reduce barriers to bicycling by reducing bicycle theft.

The section below provides more information about ROAM, their vision for more secure bike parking, and the Davis pilot project, specifically.

Team

ROAM is based in San Francisco, CA. It was founded in 2021 by senior product-development entrepreneurs who believe there is no time left for scientific solutions to emerge to resolve important topics like global warming - and that society must use the technology available today to make an impact. More people riding more often is one of the fastest and most effective paths to this end. ROAM has developed this solution in the belief that it can significantly reduce greenhouse gases - and while doing so, truly reduce bike theft.

- CEO - John Butler (Global Board, Tesco/dunnhumby)
- Strategy - Francis Kim (UBER AI Chief of Staff)
- Design - Maximillian Burton (Founder of Matter, sold to Accenture)
- Engineering - Gregor Berkowitz (CTO, Unagi Scooters, founder of MOTO, sold to Cisco)

ROAM Vision

ROAM's vision is to install networks of publicly shared, smart, secure bike locks in every major global city within 5 years. We believe systematically reducing bike theft will result in more people riding their own bikes more often, which in turn, will have a major and near-term impact on traffic congestion and global warming. Personal bike locks are not a systemic approach to resolving bike theft and therefore are largely a societal failure.

ROAM research has shown bikers are willing to pay for a publicly shared lock and that municipalities will allow shared locks to exist on their streets. Governments and Universities have also expressed a willingness to pay for the locks, subscriptions or both as a way to subsidize secure bike parking. We estimate the most densely-populated global cities, universities, corporate campuses, planned communities, restaurants, stadiums and other points of interest could implement ROAM locks quickly and with no additional public land requirement and minimal change to the streetscape.

Mission: Eliminate Bike theft

Converging technologies that enable the creation of reliable, connected, remotely controllable devices create an opportunity to disrupt, expand and improve the bike security industry. Personal bike locks today slow thieves down, but do not prevent bike theft overall. ROAM intends to prevent theft at scale, not simply for the individuals able to afford expensive locks. This will require partnerships that are atypical in business, sometimes working with what might be seen as competition for ROAM's market in the following industries:

- Personal bike lock companies
- Shared mobility companies
- Bike registration (in countries where the government does not provide registry, like in the US).
- Bike insurance that covers replacement. Bike insurance in the US does not usually cover replacement.
- Secure bike parking spaces (bike cages, secure bike areas such as indoor parking etc.)

A networked lock device, used at scale, as a part of the "streetscape" has promise to truly increase bike security, and grow the bike security market overall. ROAM will establish partnerships with best-in-class lock manufacturers, insurers and bike registries. ROAM will be a new route to market for products and services to build a bigger, stronger bike security market. In so doing, it will also create a quantum level higher value for consumers and create a real reduction in bike theft.

As with the shared bike and scooter industries, cities, universities, merchants or consumers will neither desire nor have the capacity to work with a high number of shared lock vendors. ROAM intends to move quickly to eliminate consumer confusion and inefficiencies cities might encounter with multiple solutions by:

- Establishing lock designs that are recognizable and useable by all people
- Creating strong partnerships with municipalities, doing our pioneering work with the City of Davis, CA.
- Integrating secure lock products directly with bike rack manufacturers

- Integrating designs with land-owners (e.g. universities, planned communities and corporate campuses)

People are already biking more

Several favorable tail-winds favor of a rapidly growing bike security market:

- Double digit growth in the use and sales of personally owned bicycles
- Growth in bike lane infrastructure investment
- Shifting attitudes toward bike commuting and toward greater use of personally owned bicycles.
- Merchant support for bike delivery personnel (restaurants, bars, grocery stores etc.)

What we've learned through research

ROAM's consumer research testing shows individuals are willing to pay for a publicly shared lock. A statistically significant consumer test showed 16.3% landing page conversions for a $5 per month / $60 per year subscription offer to join ROAM's shared lock network with bike insurance up to $1,500.

ROAM's research into US municipalities has shown that cities:

- will allow shared locks to exist on their streetscapes
- will spend time collaborating in design development to improve the lock's usability
- are interested in subsidizing (while they may be unclear about how to pay for it:
    - the operational costs of larger scale lock testing.
    - hardware costs once the locks are produced at scale.
    - subscription costs to make publicly shared locks available and equitable for all to use.

City of Davis Pilot

The City of Davis is an ideal city within which to form a partnership and create a pilot. A city dedicated to bike riding - alongside a recent drive to eliminate persistent bike theft creates a need to operate differently. Our municipal partners are openly engaging with ROAM in product development and helping us to connect to the wider community to ensure ROAM takes on as much public direction as is possible to ensure the product will help people to ride more, reduce bike theft and ultimately help people in lower income brackets for whom a secure bike lock is not available. We are hoping that the University of California Davis will also join this pilot as there are a significant number of bike racks (~30,0000) on the campus. Student riders compose a large percentage of riders.

ROAM has signed an MOU and begun a pilot with the City of Davis, California which will:

- quantify consumer behavior using observation.
- quantify consumer willingness to pay using an app designed for use with the lock.
- collaborate with key community stakeholders to refine lock designs.

- define a scalable business model with municipalities and universities.

Other partners include the University of California Davis Institute for Transportation Studies who will assist in a public impact study and the UC Davis Department of Design on a student-led project.

The pilot in Davis is expected to expand from 10 to 100 to around 500 bike locks over 4Q 2021-2Q 2022.

Pricing Models

Consumer-driven: Consumers pay subscriptions to ROAM to cover hardware costs. In all foreseen models, we expect consumers to pay some amount to allow us to balance supply and demand as well as ensure locks are used for discrete periods of time.

Organization driven: Cities, universities, corporate campuses and merchants purchase locks outright as a service to their citizens, students, employees and customers. The City of Davis is seeking ways to make ROAM entirely free for everyone in their city. It will be possible to make ROAM free of charge through technology integrations with Student IDs and Fast EBT.

Hybrid: Consumers pay subscriptions to ROAM and organizations subsidize lock installation and maintenance.

Partnership: Davis + ROAM

ROAM brings significant expertise in consumer research, product design, market development, municipal partnerships alongside an expert multi-disciplined team of designers, engineers, entrepreneurs and strategists.

ROAM is now discussing a partnership with one of the world's largest lock companies to work with us to be one or all of the following: Primary lock wholesaler, R&D collaborator, joint venture partner. Ideally, our manufacturing partner would be an investor in ROAM and would take a seat on our board.

Further Information

See the presentation for detail on:

- Product Design
- Customer Journey
- Sample Unit Economics

Davis + ROAM Milestones

The following list outlines current discussions between Davis and ROAM and provides general timelines for Davis lock testing, pilot progress and Davis + ROAM partnership discussions.

What	Who	How	Completed
Test devices shipped	Lock Manufacturer		Jan 5
Technical deep dive	ROAM		Feb 16
Davis BTSSC Meeting	ROAM + Davis	Public forum	Feb 10
Qualitative Testing in Davis	John	in Davis, CA	Mar 10
UC Davis Student Project Final	UCD	Live 3rd Street	Mar 10
Units for 100 lock test	Davis		mid-May
Units for 500 lock test	Davis		mid-June

Attachment(s)

1. Presentation

ROAM

Shared Infrastructure for Owned Micromobility

John Butler, CEO
johncbutler@gmail.com

ROAM - Story

ROAM began as an idea about how to help address traffic congestion and global warming.

We have worked hard to create public and private partnerships that will help us deliver a simple outcome: getting more people on more bikes more often.

We believe systematically reducing bike theft will result in more people riding their own bikes more often, which in turn, will have a major and near-term impact on traffic congestion and global warming.

ROAM

Personal bike locks are not a systemic approach to resolving bike theft and therefore are largely a societal failure.

ROAM’s is collaborating with government and community stakeholders to understand the benefit of installing networks of publicly shared, smart, secure bike locks that will systemically reduce bike theft.

We believe everyone has a right to a secure place to park their bicycle.

Bike theft is persistent problem

80% of thefts unreported

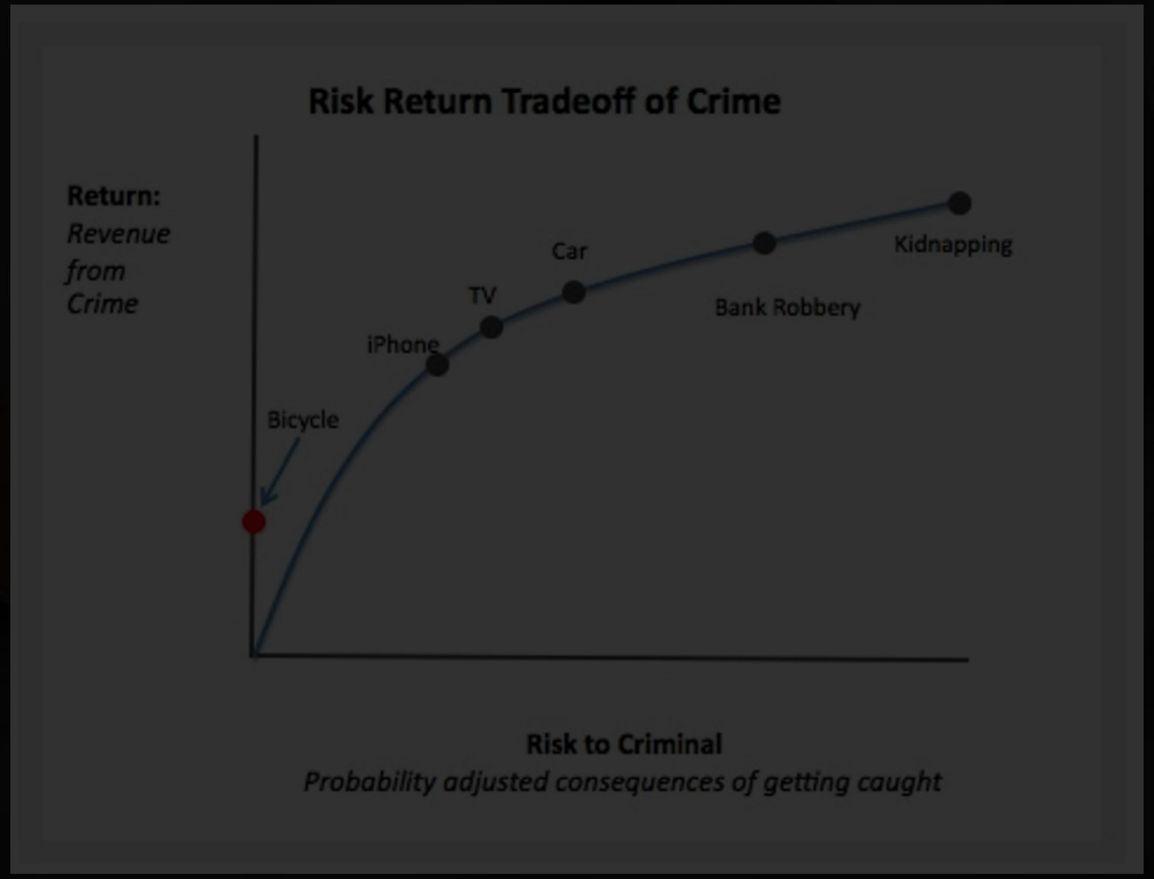
98% of thefts go unsolved

24% US theft increase (2020)

$500 value of average bike

$1 billion in stolen bikes (US)

2m bikes are stolen per year



Personal bike locks keep the risk return in thieves' favor.

Riders who want to ride, don’t

- 55% are “very concerned” their bike will be stolen
- 54% chance a University student’s bike will be stolen
- Bikes are stolen 4X more than cars
- Most insurance does not fully cover bike replacement cost

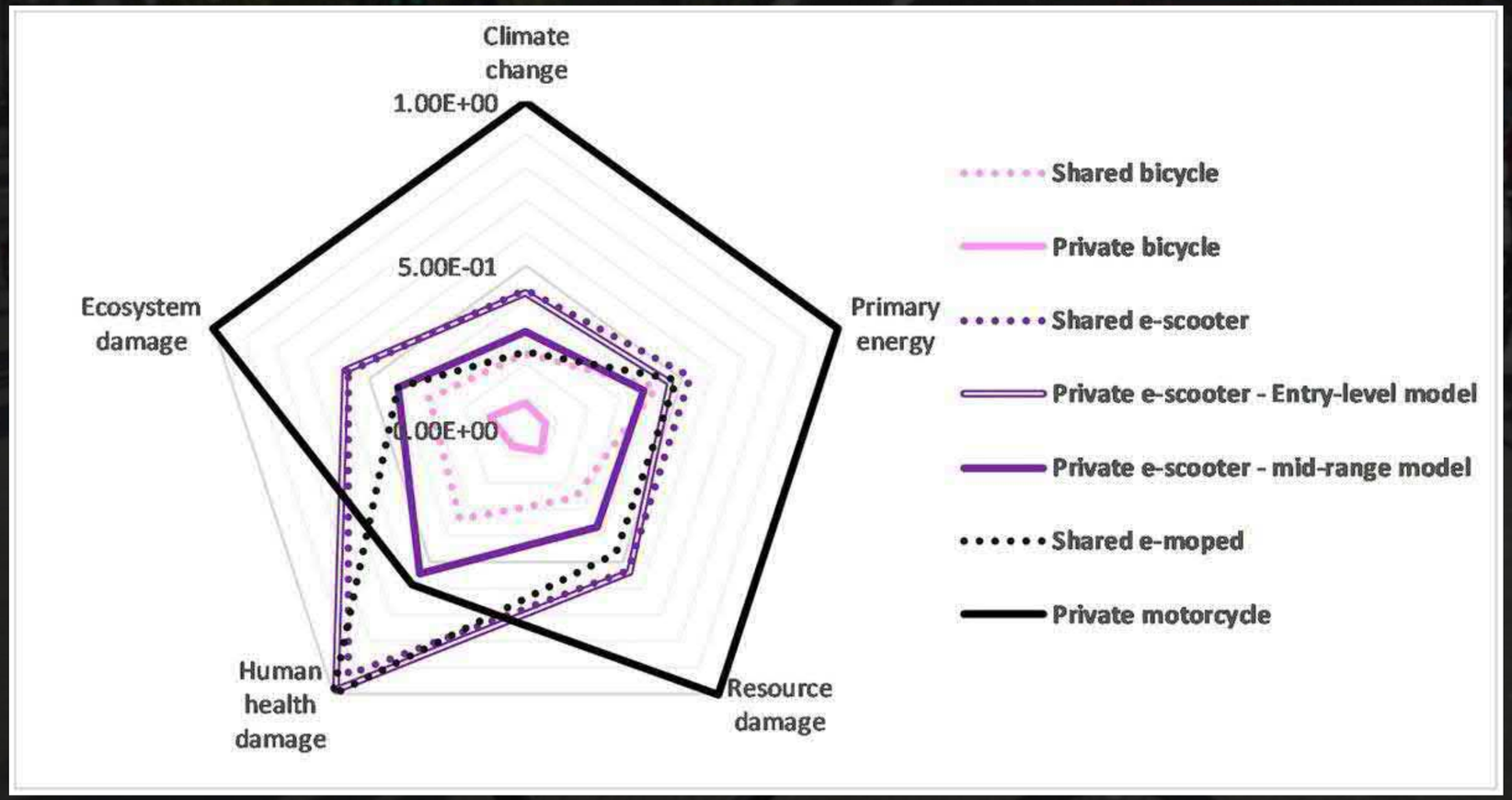
Bike ridership is essential to climate goals

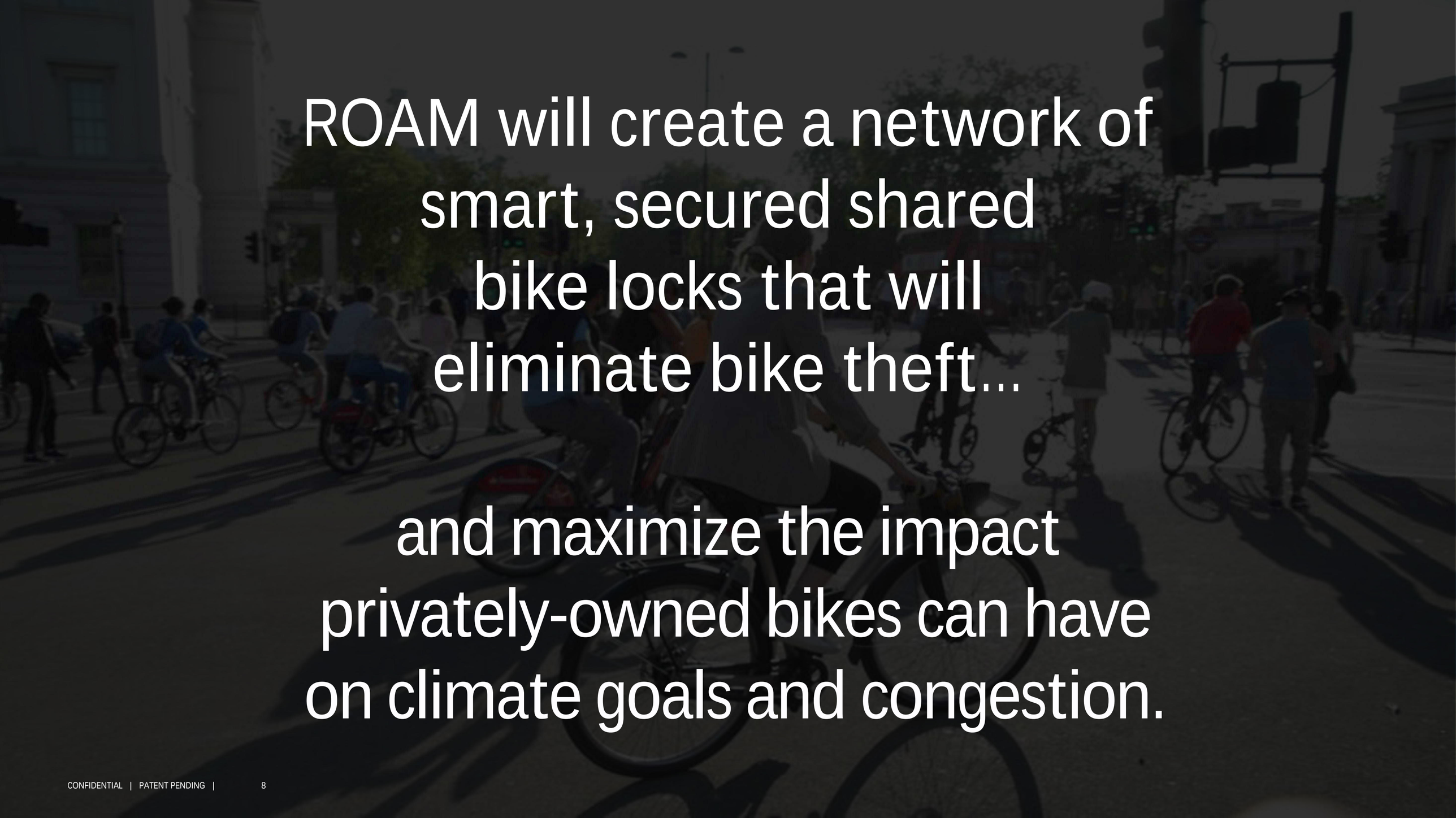
The US must reduce vehicle miles traveled by 770 billion to meet 2050 climate targets.

<u>Personally owned bikes</u>

- Available anytime
- Lowest operating cost per mile
- Used 38X more than shared bikes (5bn vs. 138m)

Personally-owned bikes are the lowest climate impact transportation option





ROAM will create a network of smart, secured shared bike locks that will eliminate bike theft...

and maximize the impact privately-owned bikes can have on climate goals and congestion.

ROAM

a network of smart, secure, shared bike locks

Smart

- Operable by phone
- Reservable

Secure

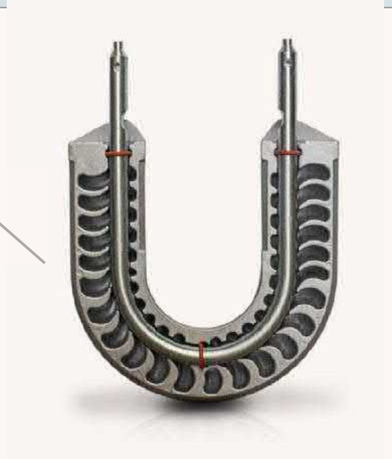
- 25X longer to breach than personal locks (active security)
- Tamper sensors alert riders and the nearby community
- Automatic
  - Bike registration
  - Insurance

Shared

- Available to everyone
- Located throughout a City on existing public and private racks
- Data for municipal / university use

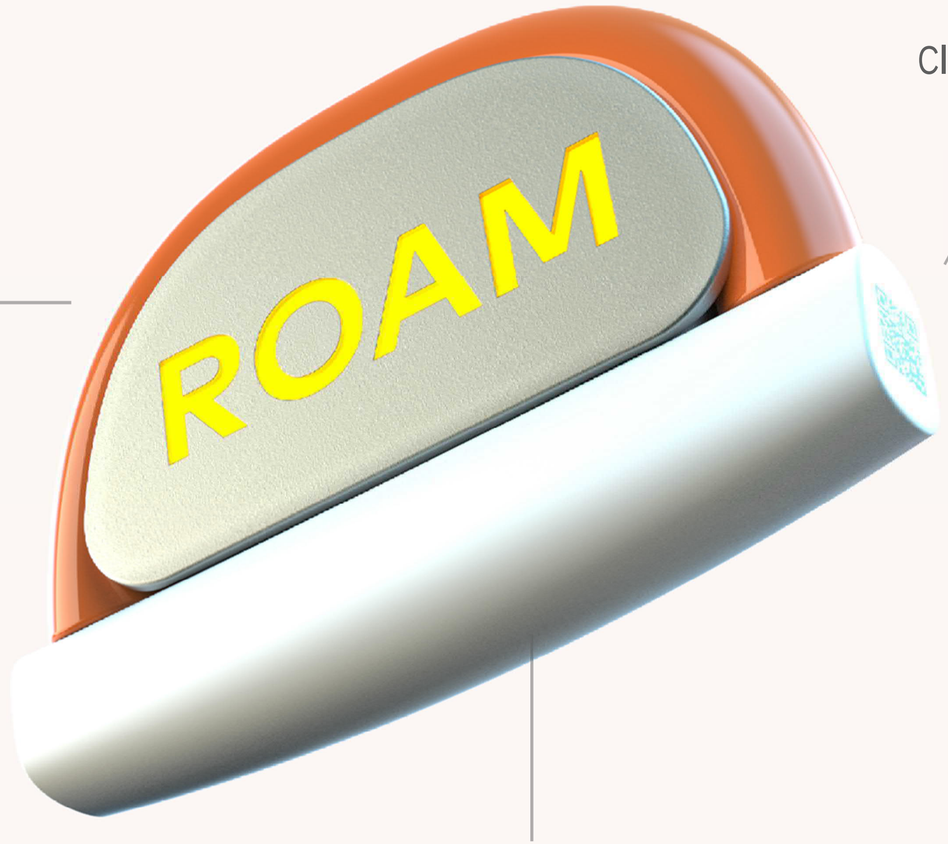
ROAM Lock Features

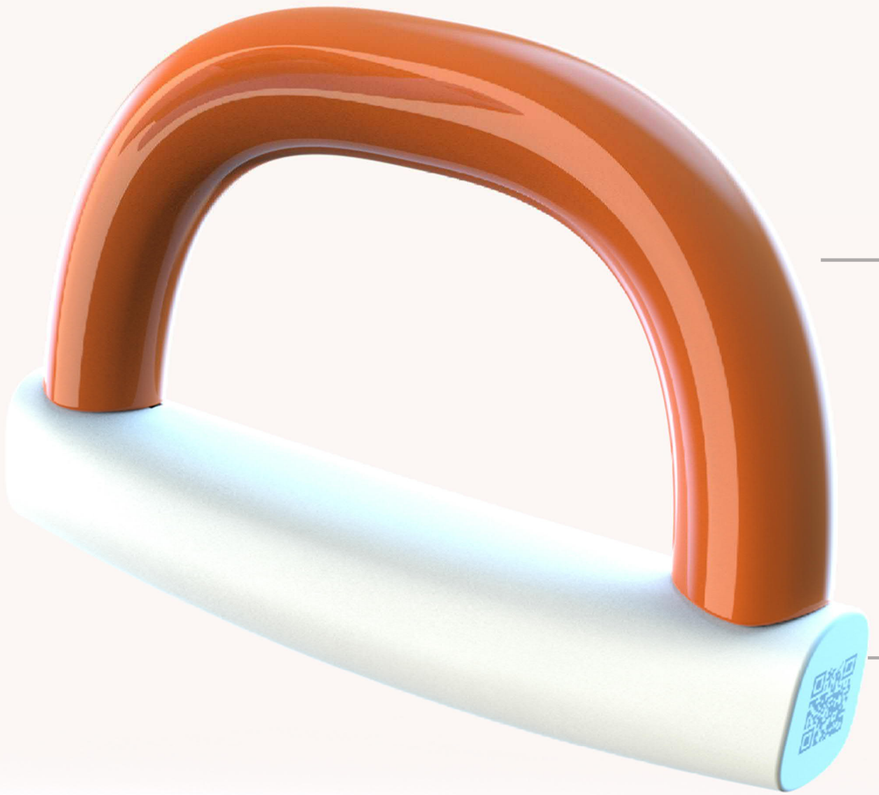
Design increases breach time by 25x.



Cloud connected

Audible alarm and flashing lights when disturbed





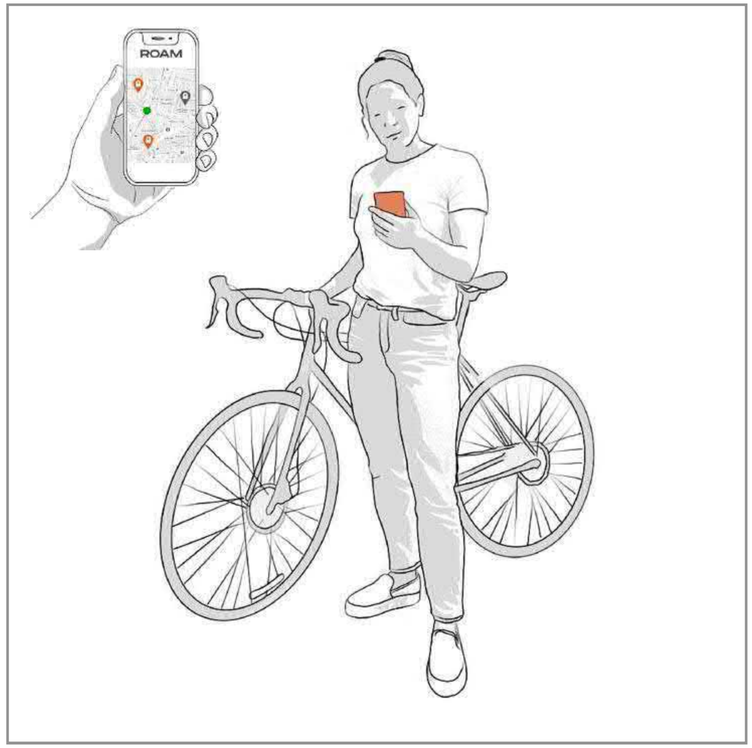
Protective coating protects bikes

Secures to all types of existing public and private bike racks

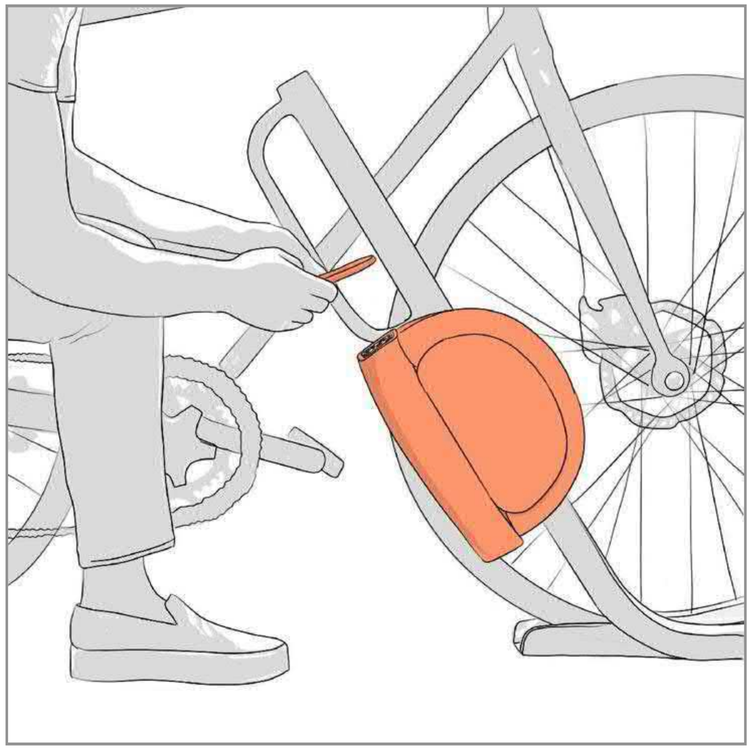
QR code for registration + unlocking

Public Rack Attachment

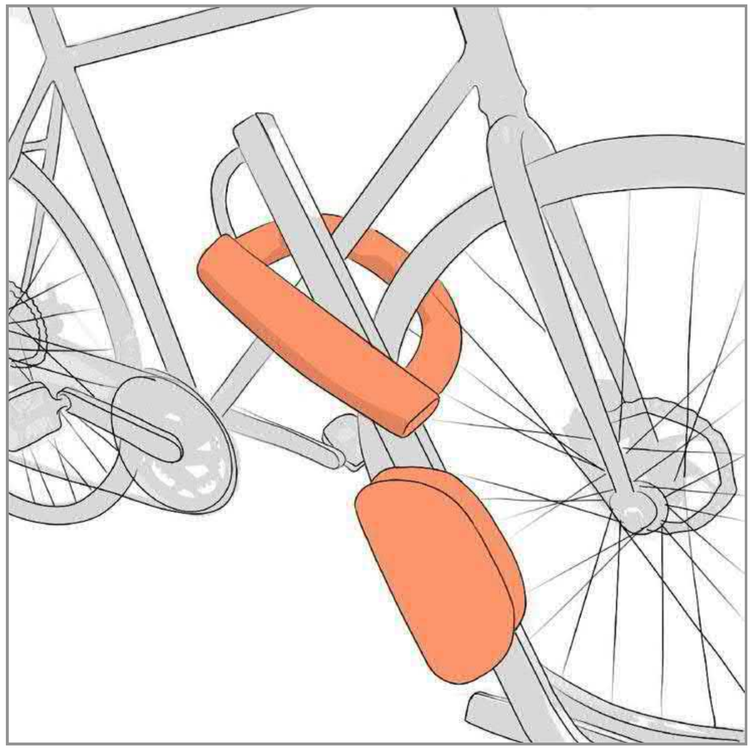
ROAM Biker Journey



Register Bike
Choose Insurance
Identify Secure Bike Space
Reserve



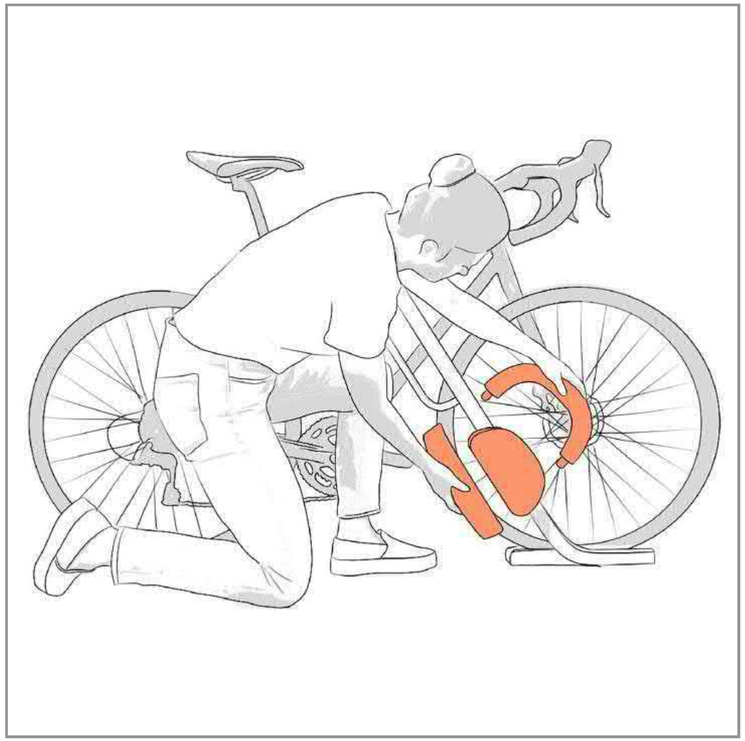
Unlock



Lock

ROAM Biker Journey

Have a nice day!



Replace lock

End session

Signed pilot MOU with City of Davis, CA

Pilot in Davis, CA

City of Davis (Signed MOU)

Agreement to place ROAM locks on all 2,500 public bike racks and collaborate in lock design development.

UC Davis Design Student Project

Will integrate ROAM into the streetscape on March 10th

Project to use environmental graphics to help people navigate to bike parking

UC Davis (MOU in discussion)

- 30,000 bike racks
- Place locks at dormitories and lecture halls

UC Davis Institute for Transportation Studies

Collaboration on Impact Design Study

Deliverables by 4Q 2022

- completed consumer and municipal tests
- first
  - municipal revenue from hardware purchase
  - consumer revenue from subscriptions
- functioning
  - shareable lock
  - consumer app
  - insurance product
- manufacturing design for scaled production
- Signed pre-sales orders with 5 - 10 cities
- Defined consumer ACV + municipal willingness to pay for hardware
- Bike registry integration (Project 529 + Bike Index)

Team

Execution

John Butler
CEO

John is founder of Skyline, an incubator of public impact startups. He has served on the Board of Tesco/dunnhumby in the UK and held C-level roles in top London agencies Wunderman, TBWA\ and Grey.

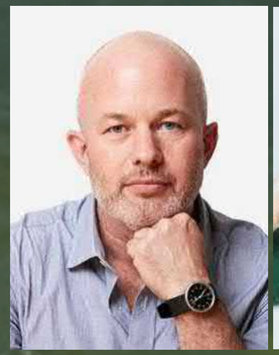
Gregor Berkowitz
CTO

Gregor co-founded MOTO (acquired by Cisco in 2010) a product innovation and development firm with clients including Apple, Microsoft, Intel, Apple, Panasonic, Kodak, Samsung, Logitech, Virgin, Vulcan Ventures.

Francis Kim
Head of Strategy

Francis is a product strategist, early stage advisor and mobility enthusiast who has served in product, analytics and strategy roles at high growth startups Uber, Index (acq. Stripe), LimeWire, and ProfitLogic (acq. Oracle).

Design



Max Burton
Head of Design

Max is the founder of the new design studio Industrial Craft and is a leading product designer. Over 35 years, he has led work for some of the most prestigious global brands including Nike, Disney, Sony, Microsoft, Intel, Logitech, Virgin and Google.

Hannah Fink
Industrial Designer

Hannah is an industrial designer at Industrial Craft with a background in furniture and fitness equipment design. Her process is rooted in exploring form through physical model making and prototyping.

Ben Lorimore
Industrial Designer

Ben is an industrial designer at Industrial Craft, a new design studio and store. He believes love, empathy and warmth are fundamental to the human experience and explores such themes in his passion for design.

Contact: johncbutler@gmail.com