TRAIN2B=QUAL

CHANGE MAKING FOR GENDER EQUALITY IN RAIL:
GENDER RESPONSIVE DESIGN FOR RAIL STATIONS AND INFRASTRUCTURE

Online: Thursday, 7 March 2024 | 13:00 - 15:30 (CET)

UIC
INTERNATIONAL UNION OF RAILWAYS

FERROVIE DELLO STATO ITALIANE

FGC Ferrocarrils de la Generalitat de Catalunya

INFRABEL
Right On Track

RFI
RETE FERROVIARIA ITALIANA
GRUPPO FERROVIE DELLO STATO ITALIANE

Agenda

13:00 – 13:15 Welcome and Introduction to TRAIN-2B-EQUAL

13:15 – 13:25 Setting the scene: ITF Gender Analysis Toolkit for Transport: Tools for gender analysis in transport projects

- Magdalena Olczak, Manager, OECD – International Transport Forum

13:25 – 13:45 Keynote: what is gender-inclusive design and why is it relevant for rail?

- Sherin Francis, Associate Director for Transport Planning, Jacobs

13:45 – 14:30 Practical Examples from UIC members on Gender-inclusive design

- *Gender audit on train stations by FGC* - Marina López, Station Manager, FGC

- Design principles of the Umeå Station Tunnel - Linda Gustafsson, Umea City, Sweden

- Security Platform presentation on Crime Prevention Through Environmental Design (CPTED) - Hendrik Vanderkimpen, Eurostar

- Urban Diversity Design on the vision for HSR California – Janet Attarian, Smith Group

14:30 – 15:00 Related concepts - Connection to stations and intermodality – station surroundings and walking/ cycling/ other transport connections

- Bronwen Thornton, CEO, Walk21

- Gonçal Cerda Beneito, PhD candidate, ATER, École d'Urbanisme de Paris, Université Gustave Eiffel

    15:15 – 15:30 Conclusions & Next Steps

- Wrap up of the webinar

- Next webinars, How to join the Opt-in
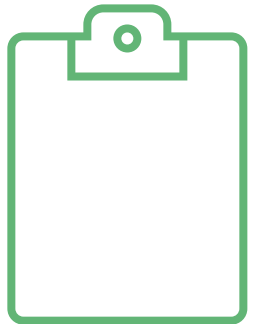
Gender Equality at UIC

UIC TRAIN2B=QUAL TEAM

Lucie Anderton

Head of Sustainability, UIC

Maria GUSAROVA

Senior Advisor, Passenger Department – Station Managers Global Group, UIC

Laura PETERSEN

Senior Security Research Advisor, UIC

Meryem BELHAJ-CLOT

Deputy HR Director and Head of HR Development, UIC

UIC Sustainability Platform

Chair from July 2022 until June 2024

Kara Oldhouser
Director of Sustainability
Amtrak

Main objectives:

ADVOCATE
Build collaborative partnerships and be the voice of the global railway community to advocate for rail as the backbone of sustainable mobility

COLLABORATE
Provide a trusted platform for the railway sustainability community to connect

SOLVE
Provide practical solutions for sustainability challenges for a future railway

Sectors:

- Air Quality
- Circular Economy
- Energy & CO_2
- Noise & Vibration
- SLU
- (new) Gender Equality

UIC Security Platform

Chair from July 2022 until June 2024

Mr. Manoj Yadava
General Director RPF
Indian Raiways

Co-chair – will become chair in July 2024

Mr Xavier Roche
Security Director
SNCF

Main objectives

Sharing experience among UIC members
identify best solutions to address security threats and adapt them to each specific situation

Ensuring coherence between different security policies
to help the development of international traffic

Elaborating recommendations
regarding technologies, human factors and organisation

Addressing new threats and developing innovative solutions
managing and participating in EU funded projects dealing with rail security

UIC Passenger Department – Station Managers Global Group (SMGG)

Chair
Mr. Fabrice Morenon
Director of International Affairs
SNCF Gares & Connexions

Vice-Chair
Mr Paul Van Doninck
Strategist
Jernhusen

Main objectives

Incubator for new projects relating to stations
Facilitation of the exchange of best practices between actors and experts

Different working groups supporting the technical exchanges between experts
Station & Urban Design, Facility Management & Operation, Retail & Commercial Affairs, Small Stations…

Promotion of train stations as intermodal & sustainable hubs
Broaden the scope of railway station activities to offer greater added value for customers and cities

UIC Talent & Expertise Development Platform

Chair

Miguel Viana
Training and Development Director
Infraestruturas de Portugal - IP

Main objectives

Promoting excellence in railway training
Through best practice models

Identifying new challenges
For talent development and training on an international level

Highlighting research findings
Which bring innovation and have practical applications for the industry

Enhancing cooperation Among Railway Training Centres
In-depth cooperation among the railway training centres

Attracting, developing, and retaining railway talent
while advocating for gender equality and fostering an inclusive environment

Working Groups

Education, Innovation & Research

Railway Training Centres Network

Railway Talents

Magdalena Olczak-Rancitelli

Manager, Gender Coordinator, International Transport Forum

UIC Webinar: Gender- Responsive Design for Rail Stations and Infrastructure

ITF Gender Analysis Toolkit for Transport:
Tools for gender analysis in transport projects
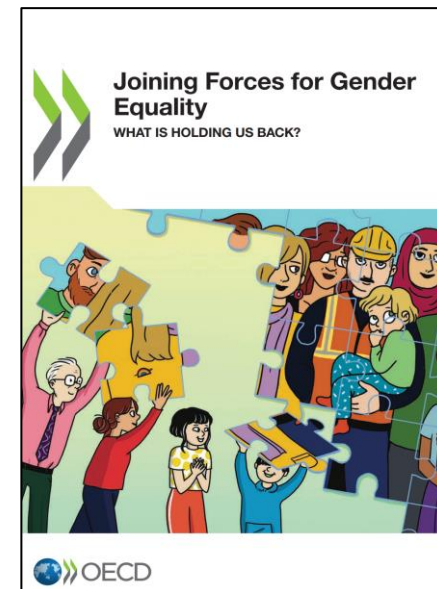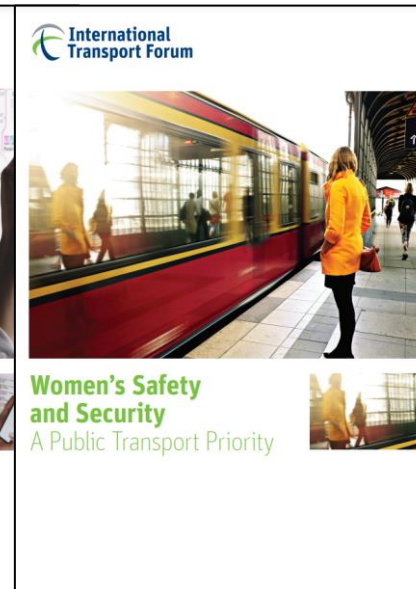
Magdalena Olczak-Rancitelli, Manager, ITF

7 March 2024

International Transport Forum (ITF)

- Intergovernmental platform and think tank for transport, at the OECD

- Fosters a deeper understanding of the role of all modes of transport in economic growth, environmental sustainability & social inclusion
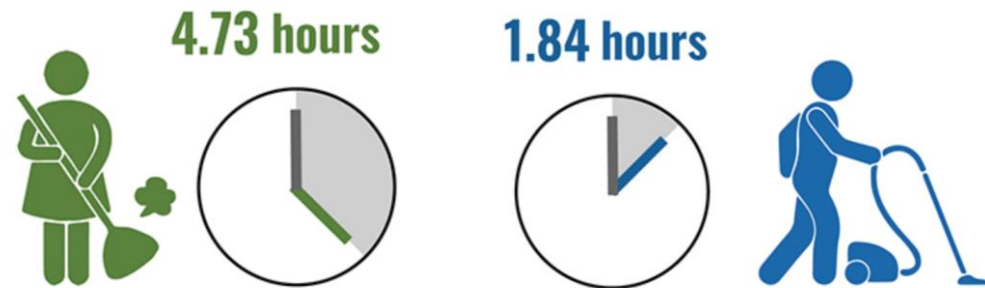
- 66 member countries

ITF Work on Gender: Research, analysis and policy dialogue

ITF Work on Gender: Recent thematic focus

Accessibility & Equity

Innovation & Skills

Climate change
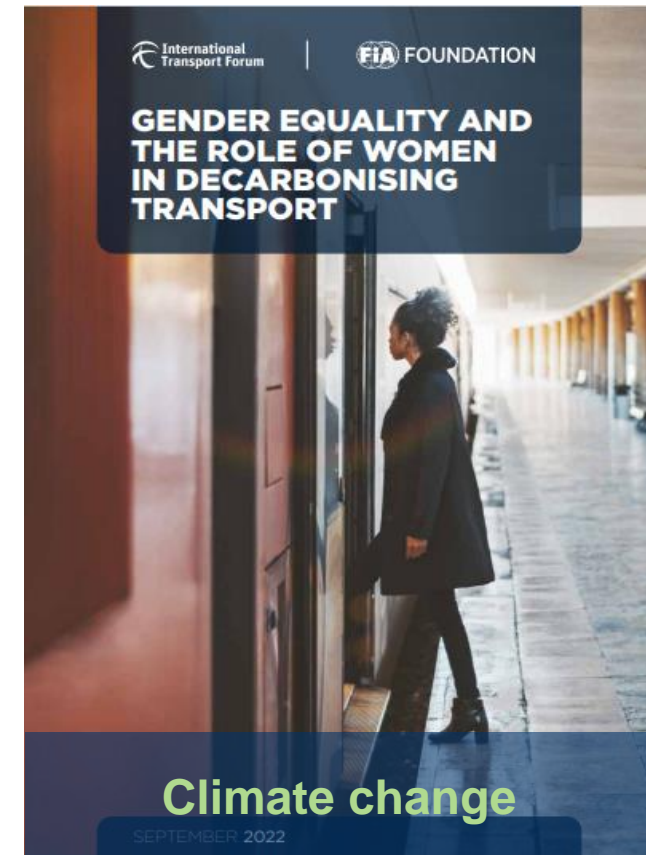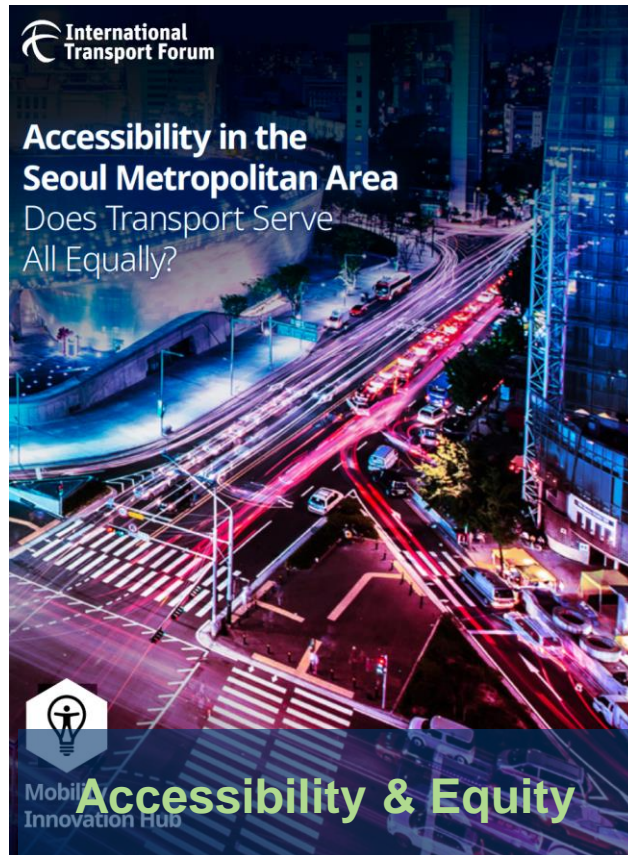
Why do gender and diversity matter for transport policy?

4.73 hours   **1.84 hours**

Women spend more than 2,5x much time on unpaid care and domestic work than men

Do **transport systems increase or reduce inequalities** in our societies?

Transport policies do not generate the same outcomes for individuals:
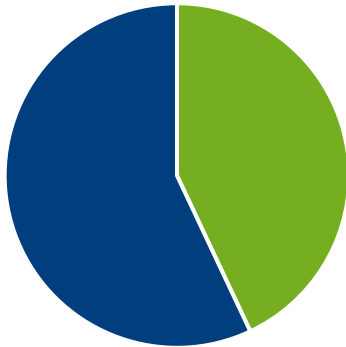
- Socio-demographic factors and differences in **individual travel preferences & constraints influence travel behaviour**

- Transport workforce is highly gendered due to **issues cutting across socio-economic factors, education and labour laws**, etc.

Source: OECD SIGI 2023

International Transport Forum
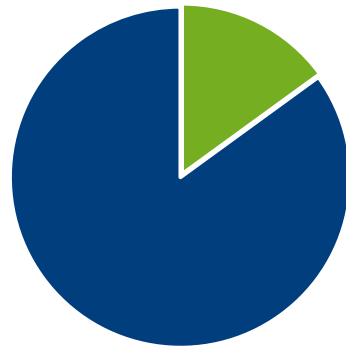
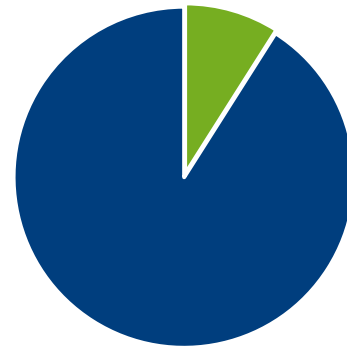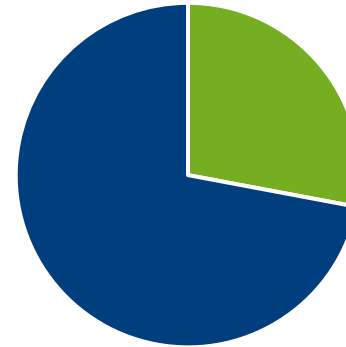# What can policymakers do?

% of the world population that are:

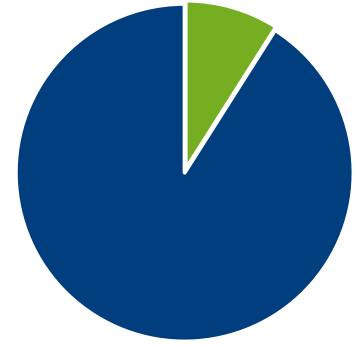**women (50%)**   living in rural areas (43%)   experience some form of disability (15%)   living in poverty (9%)   under 15 (26%)   over 65 (9%)

Source: World Bank 2022

What can policymakers do?

- **Gender analysis** is a systematic analytical process to identify, understand & describe gender differences and their relevance in a specific context

- Analysis of how the same policies would affect women and men differently

- Requires gender-disaggregated or gender-sensitive data

- Identifies constraints, opportunities, and pathways to narrow gender gaps

ITF Gender Analysis Toolkit for Transport Policies

www.itf-oecd.org/gender-toolkit

ITF Gender Analysis Toolkit

The Gender Checklist
Does your transport project or policy reflect the perspectives of different genders? Answer 12 questions for a gender score.

The Gender Indicators
Do you want to measure how gender-balanced your transport policy or project is? Pick the indicators that are most relevant for your work.

The Gender Questionnaire
You need to find out what transport-related gender data exist and which policies are in place? Use this survey template.

How do we implement the Toolkit?

Three main approaches

- Self-guided implementation

- A "light touch" approach

- An "in-depth" approach

ITF pilot projects

- Vision-led transport planning

- Transport network resilience to critical events

- Impacts of artificial intelligence on skills required in the transport sector

- Investigating the role of informal transport

- Improving accessibility for people with disabilities

International Transport Forum

Thank you!

Email: magdalena.olczak@itf-oecd.org
www.itf-oecd.org/itf-work-gender-transport

OECD

What is gender inclusive design and why is it important for rail?

Sherin Francis and Angela Lopez Garces

March 2024

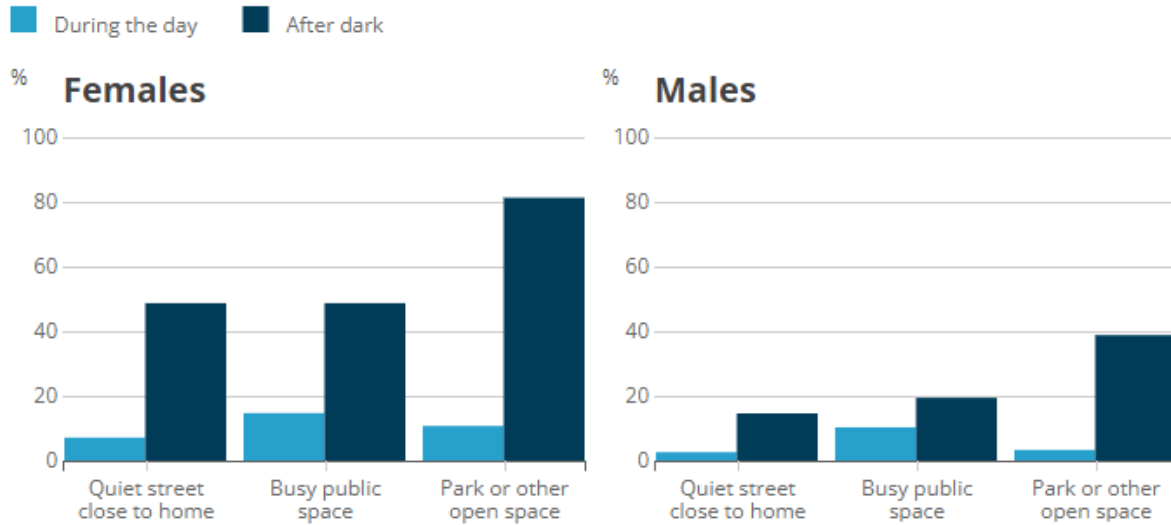# What is gender inclusive design and why is it important for rail?

1. Insights into the experience of women rail passengers
2. The role of design on improving women's mobility and experience
3. Gender bias in railway design:
   1. Station forecourt
   2. Concourse spaces
   3. Platforms and train – platform interface
   4. Rolling stock
4. Concussions and recommendations

Insights into the experience of women rail passengers

Proportion of adults who felt "very or fairly unsafe" walking alone, by setting, and sex, Great Britain, 2 to 27 June 2021

■ During the day   ■ After dark

Females

Males

Source: Office for National Statistics – Opinions and Lifestyle Survey

WHEN MAKING MOBILITY DECISIONS, WOMEN…

- Highly value access to quality infrastructure
- Highly value access to mobility resources
- Are more negatively impacted by waiting times, crowding and disruption
- Have limited time and money to travel, resulting in trip chains, multipurpose

Men are more likely to use rail than women (in England, Wales and Scotland) – Women's Budget Group 2019

Over a third of women have been victims of sexual harassment or sexual offences while commuting by train or tube – British Transport Police, 2023
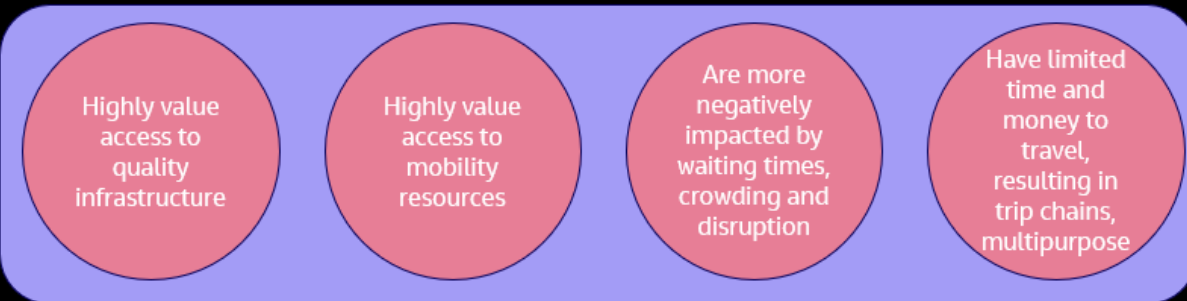
Women have more reasons to use the toilet than men, because of menstruation. Yet, this and many other bodily functions are never recognised as important in transport planning – Greed (2016)

Women have more accidents than men while boarding or alighting, especially women over 50 – Rail Safety and Standards Board (2016)

Women experience anxiety while waiting for a vehicle at stops / stations – Chowdhury, S and van Wee, B (2020)

Women deem crowding [in public transport] less satisfying and more important than men – Börjesson , M and Rubensson, I (2019)

Role of design on improving women's mobility and experience

WHAT GENDER INCLUSIVE DESIGN CANNOT INFLUENCE

- Whole end-to-end experience
- The shape of the rail network, will not connect origins and destinations better
- Affordability of rail journeys
- Capacity and frequency challenges
- Space constraints

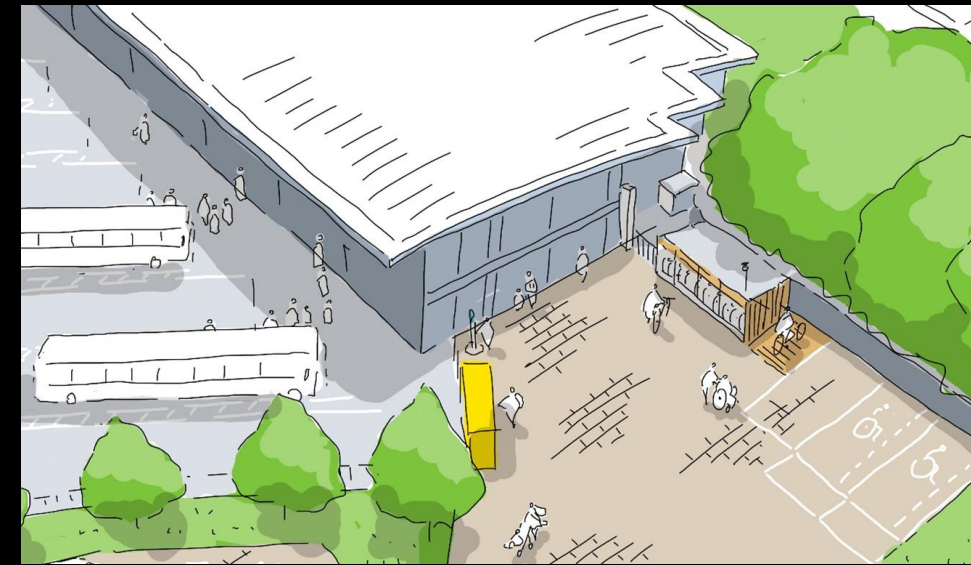## WHAT GENDER INCLUSIVE DESIGN CAN INFLUENCE

- Quality of rail infrastructure
- Access to parking provision or cycle storage
- Levels of crowding and perceived waiting times
- Level and feeling of safety and security
- Off peak and non-commuter experience
- Children inclusivity

WHY IS IMPORTANT FOR RAIL

- Increased demand contributes to
  - higher revenues
  - higher benefits
- Could benefit other groups, including:
  - other genders
  - people with mobility restrictions
  - children and the elderly
- Improve passenger satisfaction and enhanced experience

Gender bias I – Station access

- Multi-modal interchange connectivity: presence of bus stop facilities, waiting areas, and adequate signage.

- Accessibility, level and underpass and convenient crossing facilities

- Bike storage: Location of storage facilities and availability of surveillance

- Interchange penalty: timetables and cost of tickets

- Waiting times: multi-modal journeys

Unlike male travelers, they [women] do not appreciate the presence of hedges and greenery outside stations – Coppola, P and Silvestri, F (2021)

Waiting times before and after COVID (in min)
Over 22% of Resource Poor Women waited more than 10 min for a bus on average in Delhi, India. (Shah S, Rajiv R, Lokre A, 2022)

Bike storage at bus and rail station interchange entrance with lighting and CCTV (Jacobs, 2024)

Pre-COVID

- <=5
- 16-20
- >30
- 6-10
- 21-25
- Don't know/NA
- 11-15
- 26-30

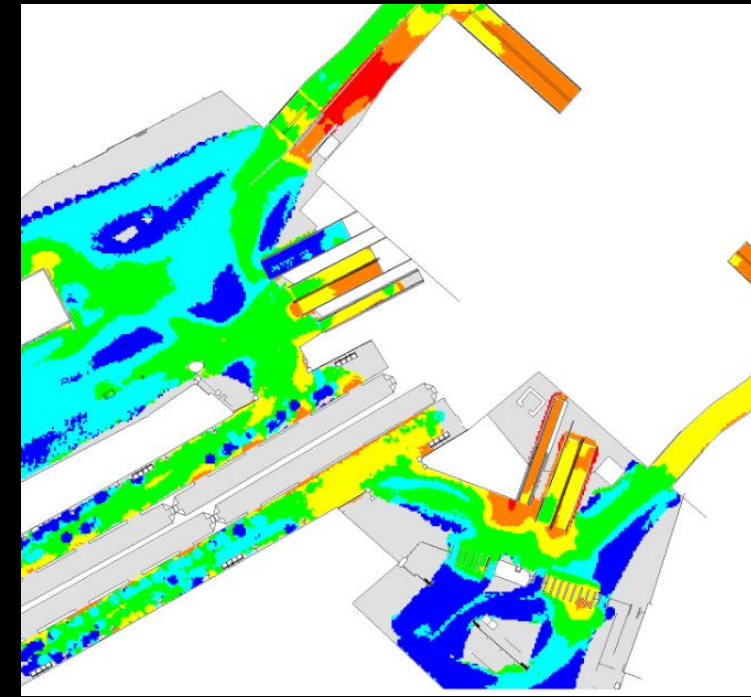42%
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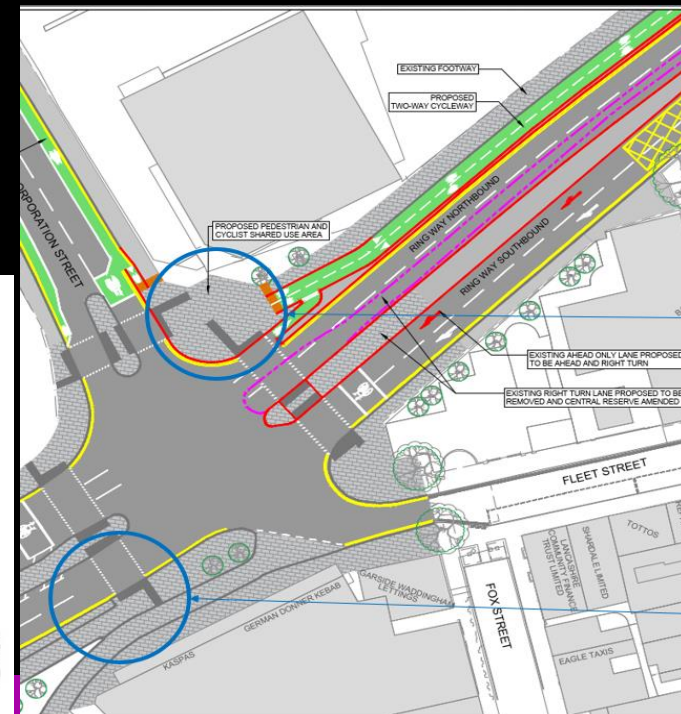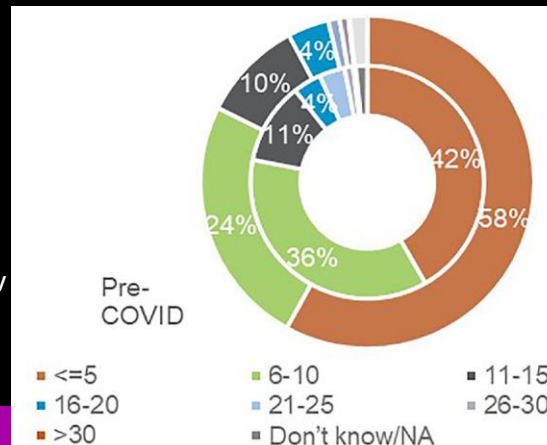
- Conflicting movements between pedestrians and cyclists (NB and EB/WB movements);
- Would be better to continue cycle track on the carriageway than blend into shared space;
- Audible indicators;
- Women/disabled less comfortable to use zebra crossings.

- Recommend cycle connections across junction to Corporation St South and Railway St;
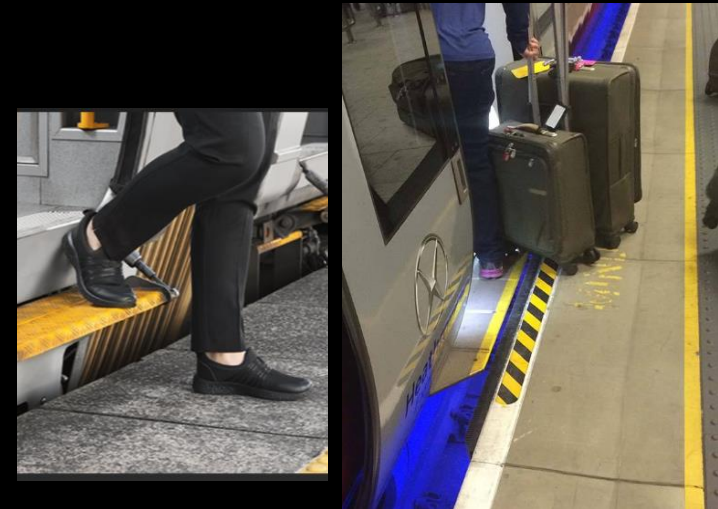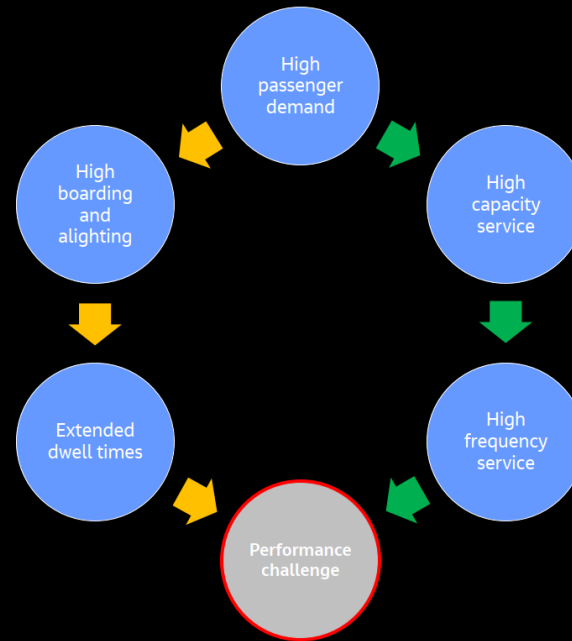- Lighting and visibility for connection.

Gender bias II – Concourse areas

- Lack of step free access route or it is long and convoluted

- Few wide aisle gates located at either side of the gateline tend to experience longer queues

- Lack of toilets, not enough toilets, not appropriate toilets

- Design does not welcome children which makes it difficult for some women to travel by train

- Escalators and stairs could present some challenges – work better for the stronger passengers and those without mobility restrictions

- Queuing areas tend to be crowded; navigation and wayfinding easier for taller people

- Lack and/or poor condition of help points - 54% of stations are completely unstaffed in the UK (2020)

Hey, Miss Office Party
Save your best moves for negotiating the escalators in those 6 inch heels. 'Tis the season to travel safely.

See what happens if you don't at networkrail.co.uk/cctv

Passenger lift
Lift

Gender bias III – Platform and PTI

- Crowded waiting areas around platform entrance/exit

- Location of step free platform entrance/exit could be in the far end

- No clarity over what areas of the platform are covered by CCTV and are safer

- Gap between the train and the platform difficult to negotiate for shorter people

- Risks around attire and luggage getting stuck in doors

- Limited dwell times might be more difficult to negotiate

- Platform extensions might create remote spaces that might exacerbate the feeling of being unsafe

High passenger demand

High capacity service

High frequency service

Performance challenge

Extended dwell times

High boarding and alighting

Keep an eye on your child at all times

THE GAP

Apply the brakes!

southernrailway.com @SouthernRailUK SOUTHERN

Gender bias IV – vehicles

- Seated capacity can be prioritized over inclusive seating

- Grab handles work better for taller people; stanchions location might prevent even distribution of passengers along the train

- It might work for the commuter peak, but what about off peak and last train?

- Selective Door Opening arrangements mean having to walk from carriage to carriage

- Onboard visual travel information more important for women

On trains, women spoke of feeling safer sitting close to the drivers' cab or in busy carriages – Transport for Scotland (2023)

Women are on average shorter than men, and shortness make crowding more of a nuisance, making it hard to reach poles and grab handles, not having free sight lines when standing among taller people - Börjesson , M and Rubensson, I (2019)

Rolling stock designs including wider seats by the train doors to accommodate families or people with mobility restrictions were ruled out. The reason being that these wider seats only counted as one seat, reducing therefore overall "seated capacity" of the designs – Train modeler experience

Conclusions

- Current design practices introduce and perpetuate gender biases in the railway

- Gender biases are present in all aspects of station design

- Gender inclusive design can be a good way of attracting women into the railway and improving their experience

- Holistic approach targeting end to end journey works better for women

- There are some ideas as to what could work better for women, but we need to include a gender component in monitoring and evaluation to understand this better

- We need to evolve the use of current design tools and standards to focus on inclusivity

sherin.francis@jacobs.com

angela.lopezgarces@jacobs.com

Challenges imposed by the gender data gap and how to address them

Marina Lopez

Station Manager, FGC

Linda Gustafsson

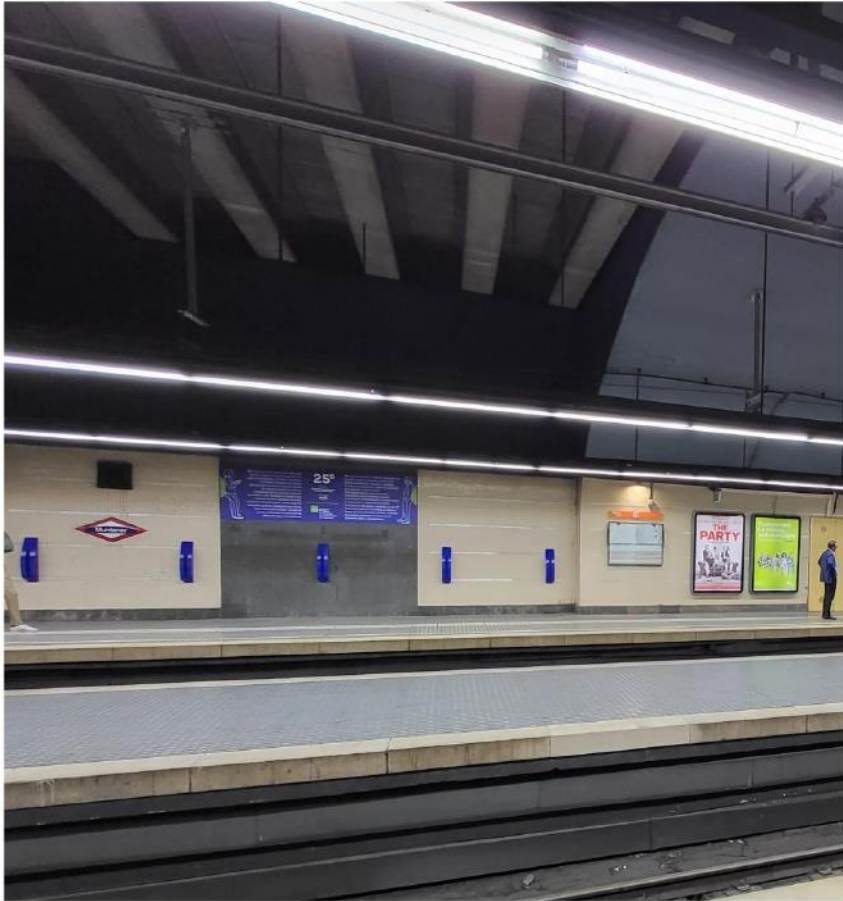*Gender equality committee at the City Council*
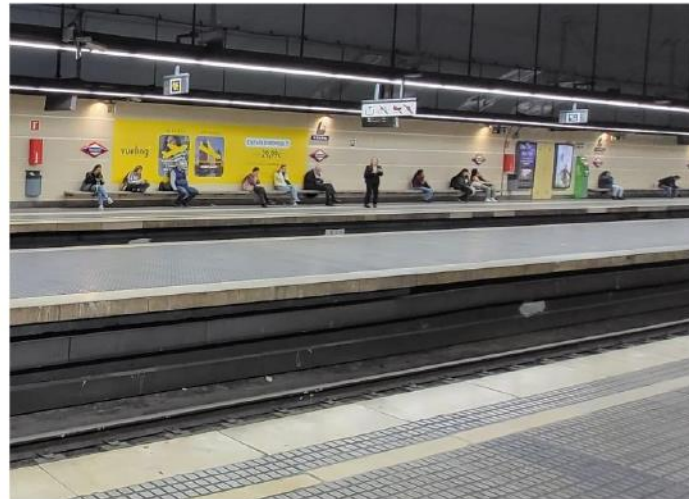
Janet L. Attarian

Principal at SmithGroup

Hendrik Vanderkimpen

Head of Security & Stakeholders Management, Eurostar

Gender responsive design for stations and infrastructure

Gender audit recommendations

UIC – TRAIN 2B EQUAL

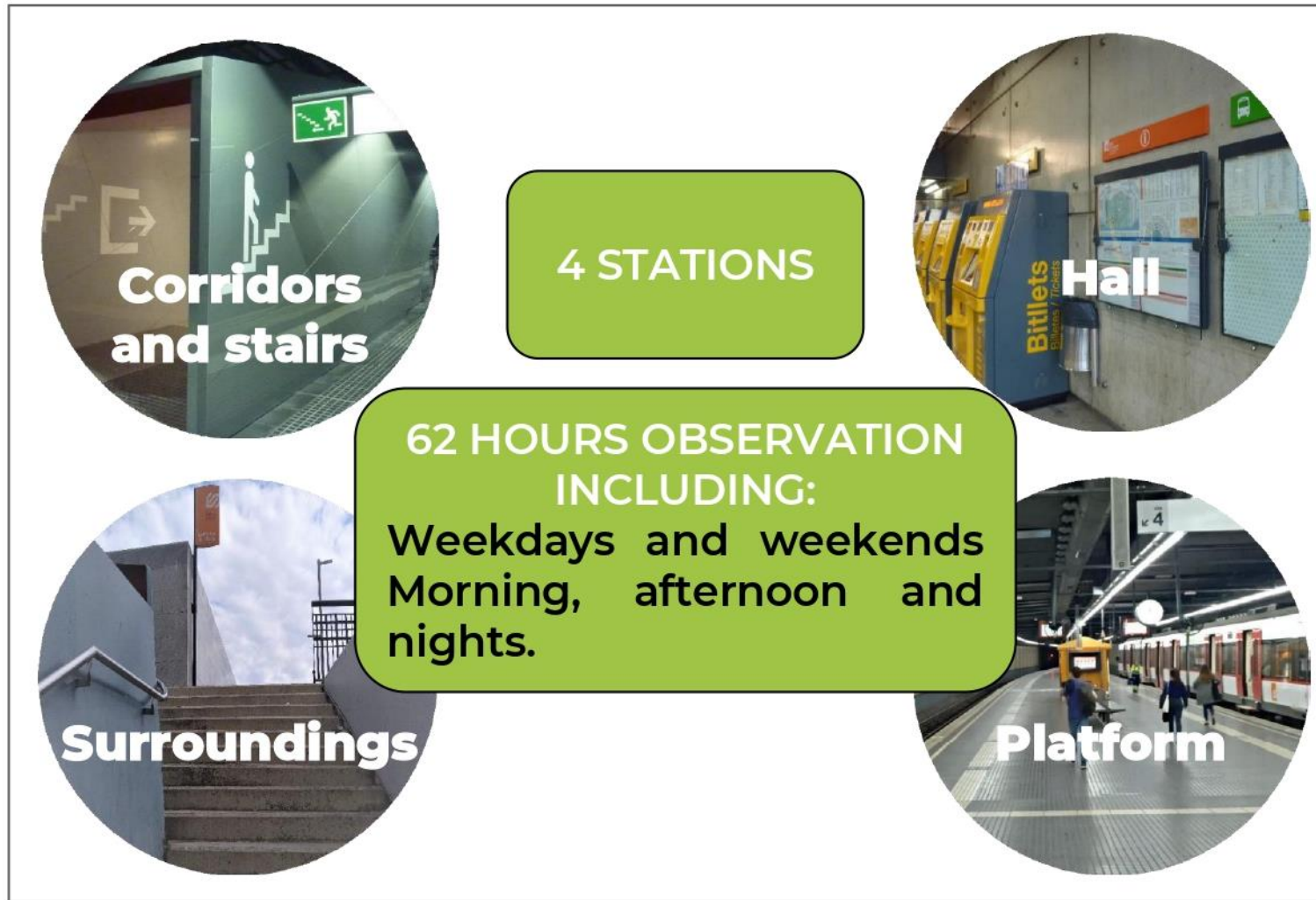Ferrocarrils de la Generalitat de Catalunya (FGC)

March 2024

1. Who are we?

- We are a **railway company** based in **Barcelona** owned by the Catalan Government.

- Besides **operating and managing railway infrastructure**, we also operate **mountain resorts.**

- Some of our figures:
  - +290 km of railway lines
  - +100 stations
  - +90 million passengers/year
  - +2,200 employees
  - 6 mountain resorts
  - 2 rack railways

2. Security audit with a gender perspective at FGC stations

Corridors and stairs

Hall

Surroundings

Platform

4 STATIONS

62 HOURS OBSERVATION INCLUDING:
Weekdays and weekends
Morning, afternoon and nights.

RECOMMENDATIONS BASED ON
6 PRINCIPLES

FGC
Ferrocarrils
de la Generalitat
de Catalunya

UIC
INTERNATIONAL UNION
OF RAILWAYS

2.1 SIGNAGED ENVIRONMENT. Know where you are and where you go. Non-sexist and inclusive signage. Visual, acoustic and tactile.

Change of reserved seats pictograms

Improvement of Doble door PRM instructions of use

New area maps: Easier and better info

Improvement of Intermodal signaling

Braille

Signaling routing adapted accesses
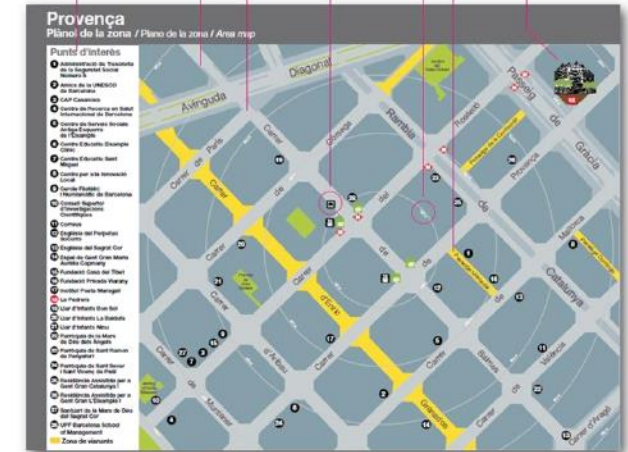
Increase size of letters and visibility

FGC
Ferrocarrils
de la Generalitat
de Catalunya

uic
INTERNATIONAL UNION
OF RAILWAYS

2.2. Visible environment. See and be seen.

✓ Design open spaces with high visibility of all people, equipment, access and exits.

✓ Using transparent materials, avoid obstacles, eliminate and reduce corners, install mirrors if not possible

✓ Improvement of lighting at stations to achieve good and homogeneous illumination

Watch out:

x Temporary closures for improvement works

x Commercial advertising surfaces

x Abrupt changes in light
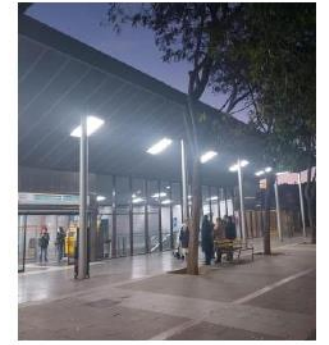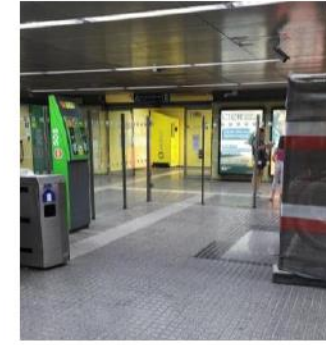
2.3. Guarded environment. Formal and informal guarding. Access to help, be able to escape, get help.

New design for information and emergency posts

- ✓ More visible
- ✓ Clearer, simpler information

Old design   New design

Promote informal guarding

Training gender perspective and diversity all staff and security guards

Clearly signal

point of attention

and information

Giving advertising space to campaigns against gender violence

Fer-li comentaris sexuals a l'espai públic **ÉS DELICTE**

2.4. Equipped environment. More equipment, accessible, clean and well-maintained increases users.

Put ischiatic supports and benches with back and armrests to make it more comfortable and easier for old people to get up
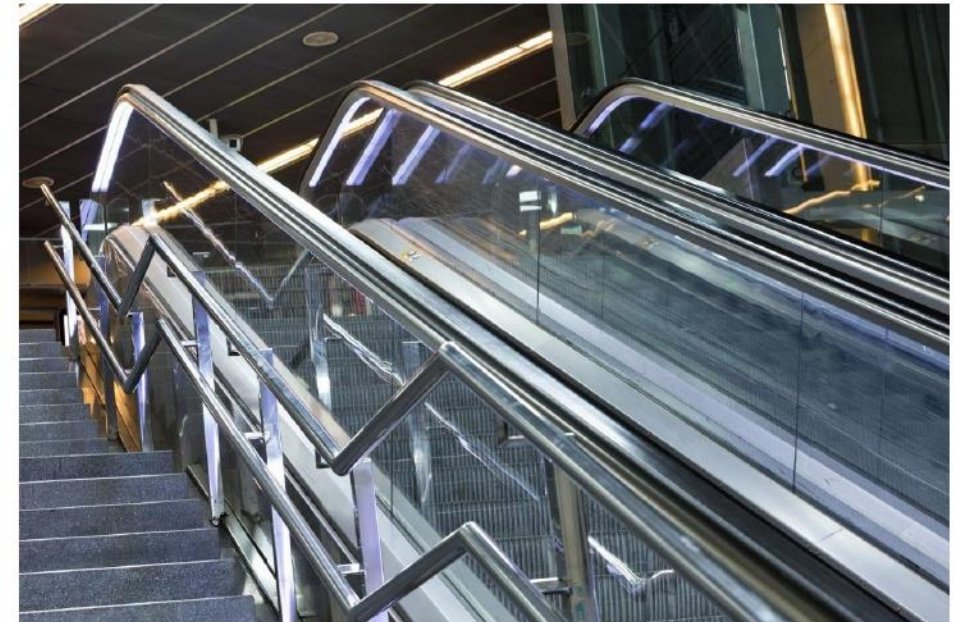
↑ Users

↑ Safety perception

Auto-opening button

Full equip, unisex, inclusive WC.

Doble heigh handrails

2.5. Living environment. Listen and be heard.

+

2.6. Community environment. Increase feeling of belonging, space appropriation, space care, solidarity and social network.

Giving advertising space to civic awareness campaigns

↑ Vitality

↑ People

↑ Help

↑ Safety perception

FGC
Ferrocarrils
de la Generalitat
de Catalunya

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3. Conclusion

1 The interrelationship and combination of these 6 principles help to increase women's perception of safety in their diversity at the stations.

2 Responding to these principles not only increases women's perception of security but also improves:

- Accessibility

- Daily activities

- People care

- The coexistence of diversity of people in public transport and train stations

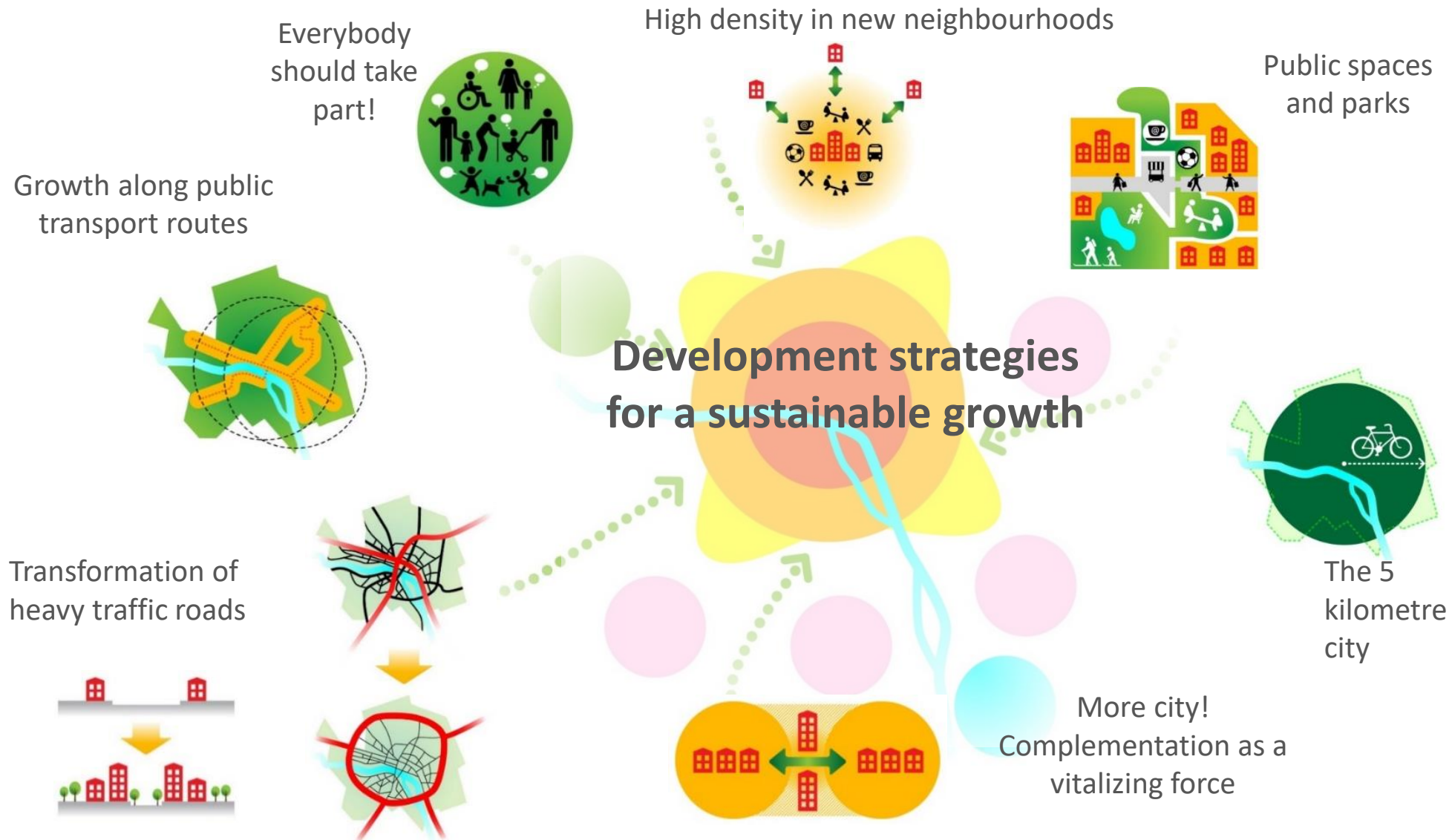# Thank you!

Marina López
Station Line L-A Manager, FGC

UMEÅ, Sweden
- working with gender equality to create space for everyone

Linda Gustafsson, gender equality strategist
City of Umeå, Sweden
linda.gustafsson@umea.se

UMEÅ KOMMUN

The comprehensive plan for a sustainable municipality

High density in new neighbourhoods

Everybody should take part!

Public spaces and parks

Growth along public transport routes

Development strategies for a sustainable growth

Transformation of heavy traffic roads

The 5 kilometre city

More city! Complementation as a vitalizing force

UMEÅ KOMMUN

Umeå Eastern railway station

"Ramble and Roam"
Artist: Astrid Sylwan, 2010

Passage under Umeå Central railway station

Photo: Philip Avesand

Planning a tunnel with a gender perspective

Artificial lighting that feels like daylight: Increased feeling of safety

Artwork Lev! Author Sara Lidman: Company of another woman

Broad passage with designated lines for bikes, walking, strollers and wheelchair: Increased feeling of security

No pillars in the tunnel: **Remember the choices not made!**

Roof extends no further than to have overview from both sides of tunnel: create overview

Exit in the middle: Increased feeling of security

All corners are rounded to not get the feeling that somenone can be hiding: Create overview

UMEÅ KOMMUN

Sara-tunneln – Sara Lidman – sällskapet

Planning for Gender –Responsive Design in California's Central Valley

UIC – Gender Responsive Design for Rail Stations and Infrastructure TRAIN 2B EQUAL Online Workshop

Janet L. Attarian AIA, LEED AP BD+C

California High Speed Rail Authority/SmithGroup

Connecting California

Program Highlights

- **Phase 1**
  - 494 Miles
  - San Francisco to Los Angeles/Anaheim
- **Phase 2**
  - After Phase 1 - Extends 300 Miles
  - Connections to Sacramento and San Diego

Travels at Approximately 220 mph

Up to 24 Stations

LEGEND

— Phase 1

— Phase 2

○ Station
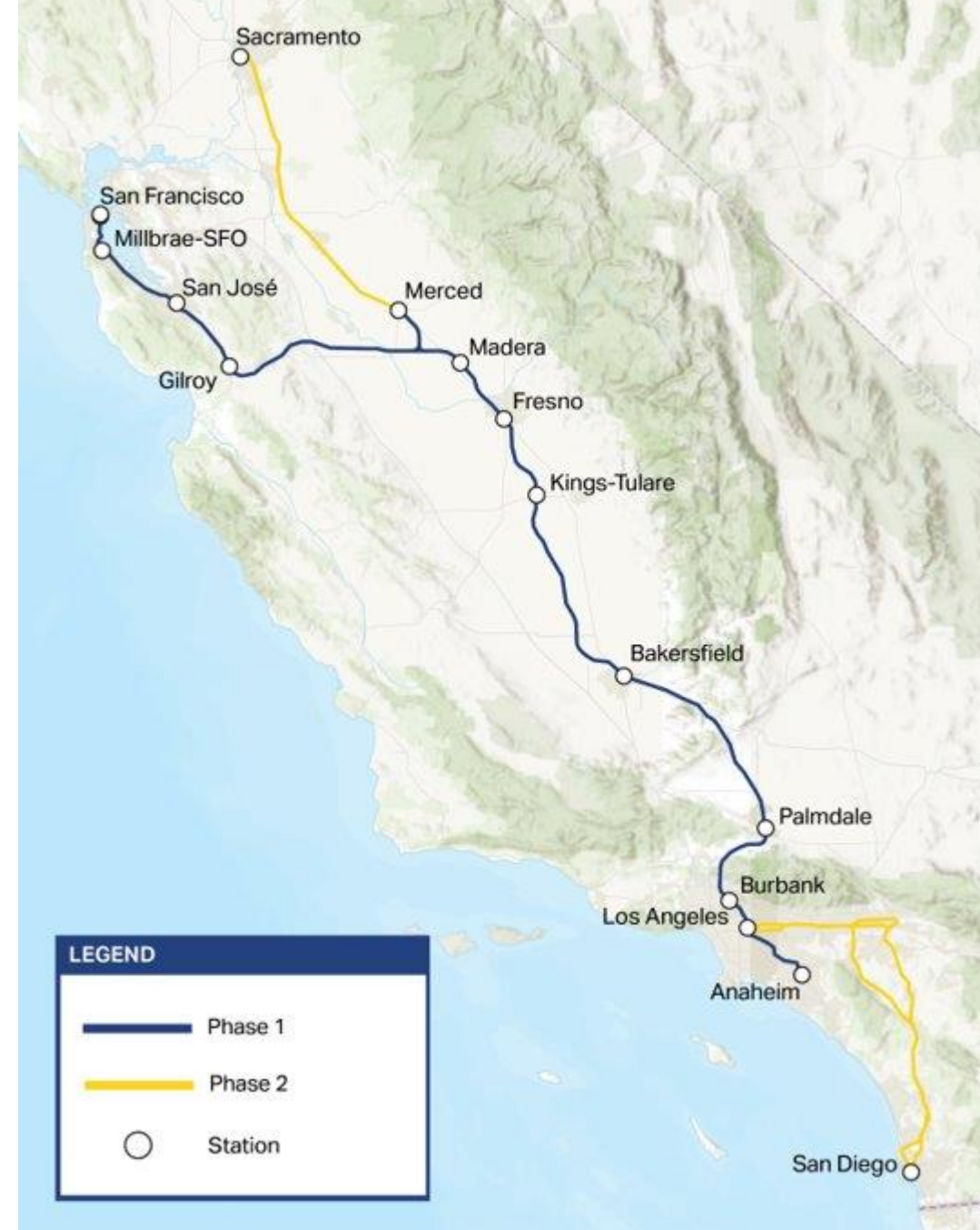
Where We Are Today
2024 Progress

- **Today:**
  - 119 Miles Under Construction
  - 52 miles Under Advanced Design (north into Merced and South into Bakersfield)
  - Environmentally Clearing Full 494 Miles Between San Francisco and Los Angeles Basin
    - Approximately 422 Miles Environmentally Cleared To-Date
    - Anticipating 463 Miles Environmentally Cleared in 2024
  - Statewide Bookend Projects
  - Station Design for four Central Valley Stations
    - Merced, Fresno, Kings/Tulare and Bakersfield

LEGEND

- 422 miles environmentally cleared
- 72 miles awaiting environmental clearance 2023-2025
- 119 Miles Under Construction
- 51 Miles Caltrain Electrification Connectivity Project
- Advanced Design Merced & Bakersfield Extensions
- ○ HSR Station
- 🚧 Connectivity Project

Program Update

Highlights

- **12,900+ Construction Jobs Created Since Construction Began**
  - In 2024, Record Number of Workers Dispatched Daily
  - 24 Active Construction Sites in the Central Valley
  - Average 70% Workers from Disadvantaged Communities
- **820 Small Businesses Employed**
  - 289 are Disadvantaged Business Enterprises
  - 100 Disabled Veteran Business Enterprises
  - Wealth Creation for Residents of Disadvantaged Communities
- **Leading In Sustainability**
  - Currently Using Tier IV Equipment on Construction
  - Will Reduce VMT by Taking 400k Cars Off the Road Annually
  - Will Run on 100% Renewable Energy
  - Recognized as a Platinum Sustainable Infrastructure Project

Central Valley Stations

Kings/Tulare

Improving the Quality of Life for Women

- ➤ **Job Opportunities**

- ➤ **Affordable Mobility Options**

- ➤ **Family Friendly Train Designs**

- ➤ **Safe And Welcoming Stations**

- ➤ **Equitable Design Guidelines**

- ➤ **Supportive Amenities In And Around The Stations**

- ➤ **Community Resilience**

WELL BEING INDEX OF WOMEN
CENTRAL VALLEY, CALIFORNIA

➢ California women, and **especially women of color in the Central Valley, face persistent barriers** to accessing economic security, physical and mental health care, and representation in elected positions that would greatly improve their lives, the well-being of their families and communities, and the state's economy

➢ One constant – **women living in the Central Valley fare worse compared to women in other regions of the state**

➢ More than **1 in 5 women live in poverty** in many counties in the Central Valley. In Tulare County, 23.9% of women live in poverty — the highest county poverty rate for women in California.

The California Women's Well-Being Index is a multifaceted, composite measure that consists of five "dimensions": Health, Personal Safety, Employment & Earnings, Economic Security, and Political Empowerment. Each dimension is composed of six indicators that have been standardized and combined to create dimension scores, on a scale from zero to 100, for each of California's 58 counties. The five dimension scores have been combined to create an overall Women's Well-Being Index score for each county.

34.5   74.6

SOURCE: California Budget and Policy Center, Women's Well-Being Index - California Budget and Policy Center (calbudgetcenter.org)
California Women's Well-Being Index Shows Women in the Central Valley Face Significant Barriers to Prosperity - California Budget and Policy Center (calbudgetcenter.org)

Jobs - Gender Inclusion in Contracting & Authority

NEWS RELEASE: California High-Speed Rail Authority Named Employer of Year by International Women in Transportation Organization

May 12, 2023

More than half of the Authority's total workforce is female – as well as most of the executive team

DIVERSITY, EQUITY AND INCLUSION
AS OF FEBRUARY 2024

822 Certified Small Businesses working on the high-speed rail program statewide

287 Certified Disadvantaged Business Enterprises

101 Certified Disabled Veteran Business Enterprises

6 Native American Owned Firms
44 Asian Pacific Owned Firms
43 African American Owned Firms
24 Asian Subcontinent Owned Firms
85 Hispanic Owned Firms
147 Woman Owned Firms

30% Small Business Requirement

10% Disadvantaged Business – including WBE's

3% Veterans Small Businesses

Affordable Mobility Options

Giving Women and Families Choices

➤ Access to Public Transit

➤ Defined Bike and Pedestrian Networks

➤ Micro-mobility Options

➤ Ridesharing and carpooling programs

➤ Community Transportation Programs

➤ Complete Streets

➤ Intermodal Hubs

➤ Safe Crossings

Housing + Tranportation Index

By taking into account the cost of housing as well as the cost of transportation, H+T provides a more comprehensive understanding of the affordability of place. Dividing these costs by the representative income illustrates the cost burden of housing and transportation expenses placed on a typical household. While housing alone is traditionally deemed affordable when consuming no more than 30% of income, the H+T Index incorporates transportation costs—usually a household's second-largest expense—to show that location-efficient places can be more livable and affordable. Learn more about the H+T Index

COST AS % OF HH INCOME

0   1   25   35   45   55   65   75

Not Just for the Future but for Today

- Central California
  » Electric bus fleets
  » New and revised train service
  » New Transit hubs
  » EV bus and vehicle charging

- Norther California
  » Peninsula Corridor Electrification Project

- Southern California
  » Rosecrans/Marquardt Grade Separation Project
  » Los Angeles Union Station and Link US
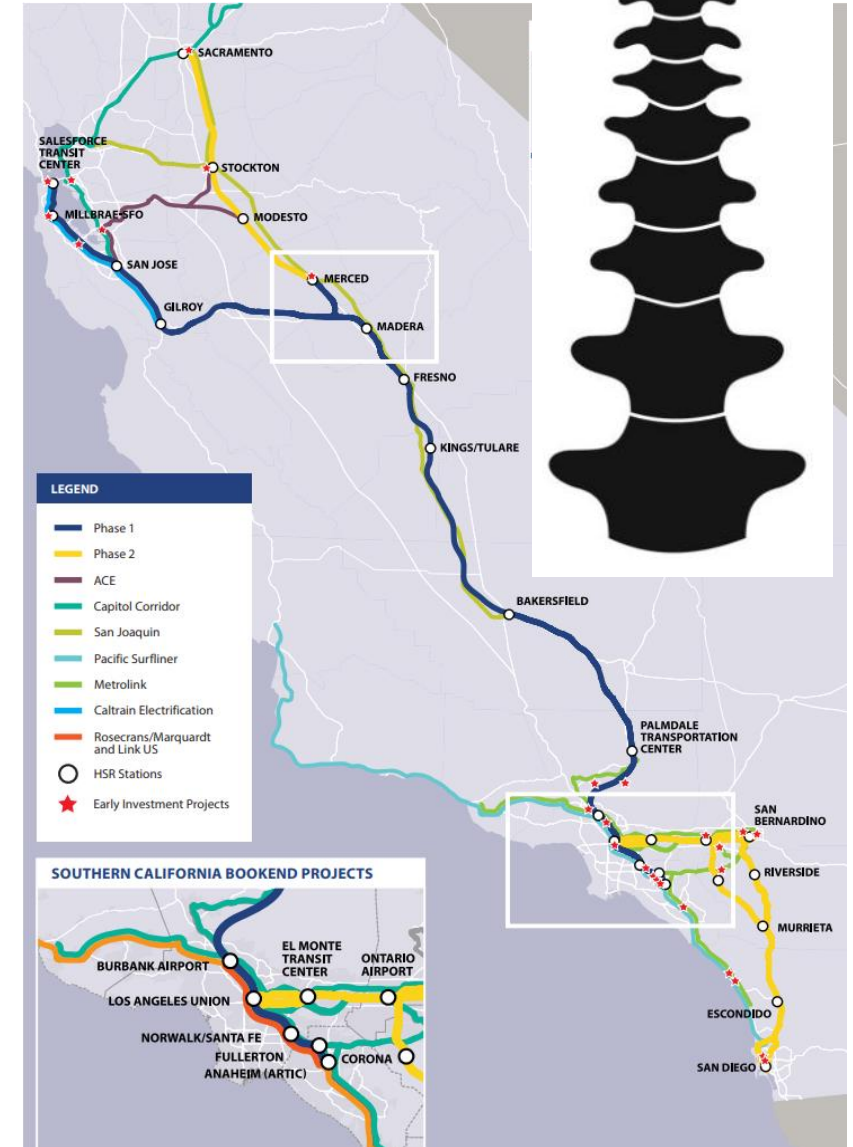
Family Friendly Train Designs

Safe And Welcoming Stations

Equitable Design Guidelines

➢ **Wayfinding** – Spaces that are **easy to find and navigate**. Including signage, intuitive layouts, good lines of site, and clear directions.

➢ **Ergonomics** – The design of fixtures, furniture and overall layout that **prioritize the well-being, accessibility, and convenience** of the users

➢ **Culture** – Design spaces the respect the social and cultural aspects of users and **foster a sense of belonging and respect** for all individuals

➢ **Access** – Designing spaces that can be accessed throughout the day and align with hours of operation, **prevent exclusivity while providing safety and privacy**

Dignity and Equity

Material Quality, Maintenance

Location, Distribution, Signage

Safety, Privacy, Universal Access

Equitable Design Guidelines

- Smaller all-gender bathrooms
- Accessible to a wide range of abilities
- Comfortable to a wide range of cultures
- Well, maintained and cleaned
- Provide Lactation rooms

- Plan for a diverse set of stakeholders
- Identify women and family issues and needs
- Map passenger journeys

- Consider a wide range of ages and user types
- Ensure universal access
- Go beyond minimums and design for comfort
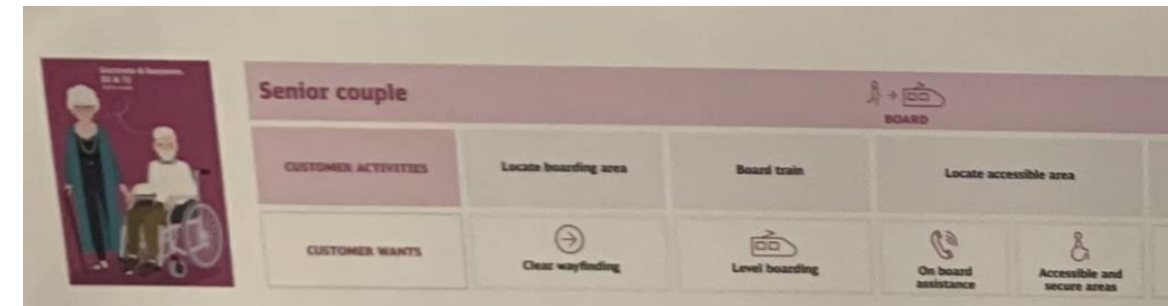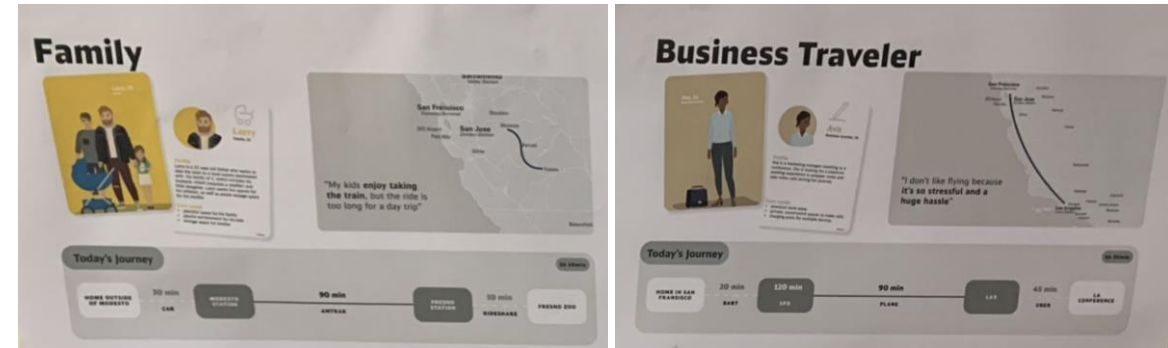
Supporting Amenities In And Around Stations

What women need from their cities

ACCESS

HEALTH

W

COMMUNITY

Supporting Amenities In And Around Stations

- COMPLETE STREETS
- PROTECTED CYCLETRACKS
- ROBUST TRANSIT

MOBILITY

HEALTH

ACCESS

W

PUBLIC SPACE
- PERSONAL SAFETY
- QUALITY AMENITIES
- DIVERSITY

LAND USE
- QUALITY CHILD CARE
- RETAIL OPTIONS
- HOUSING VARIETY

COMMUNITY

Bakersfield Station
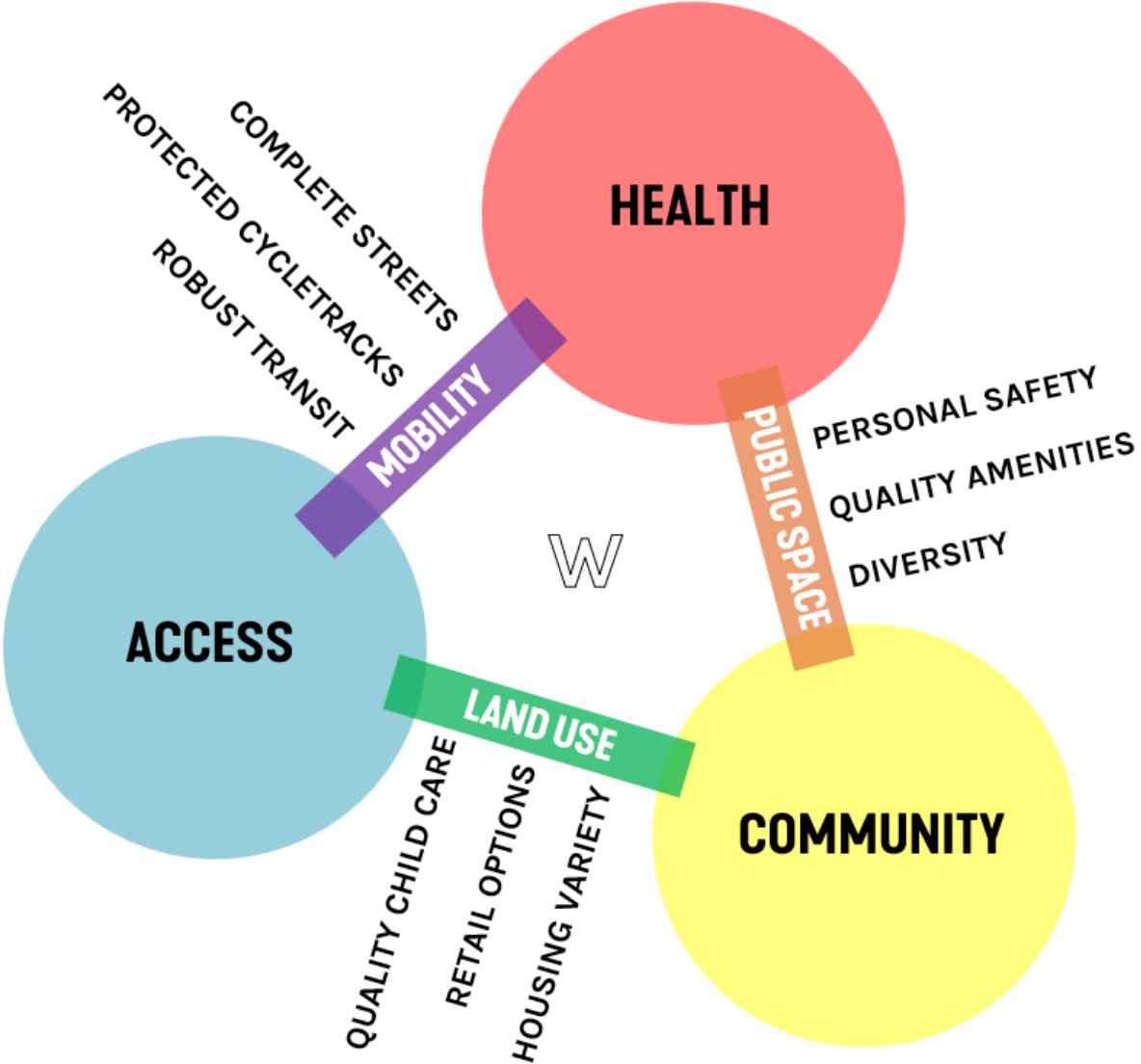
Creating Community Resilience Hubs

➢ **Locally generated power**– The stations, EV charging, and EV bus charging, and track and train system will all be powered by locally generated green power

➢ **Refuge** – The stations can serve as cooling stations during heat waves and shelters during major events.

➢ **Heat Stress** – Passenger journeys from transit to train are being designed to minimize passengers experience of heat stress under future climate conditions

➢ **Access** – Multiple forms of mobility and shared use vehicles will be co-located at stations and connected to walkable districts and bicycle facilities

➢ **Community Partnerships** – HSRA is working with a large range of CBO and Government partners to create community and deliver a range of services

MID CENTURY HIGH EMISSIONS 2035-2064

END OF CENTURY HIGH EMISSIONS 2070-2099

Change in Temperature (°C)

WILDFIRES, 2012 - 2021
FOREST LAND
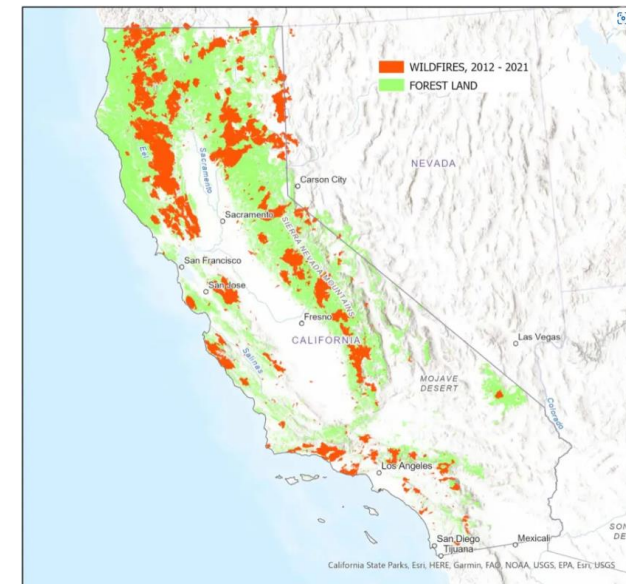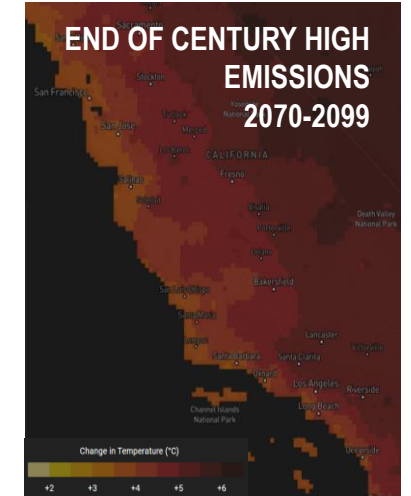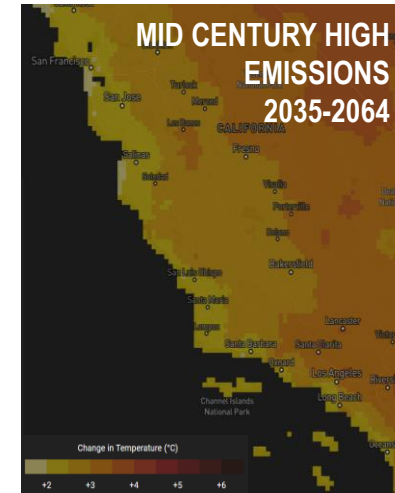
California forestland and wildfires, 2012 – 2021. Jim Schmidt

Bakersfield: CBO Workshop: Emerging Themes + Partnerships
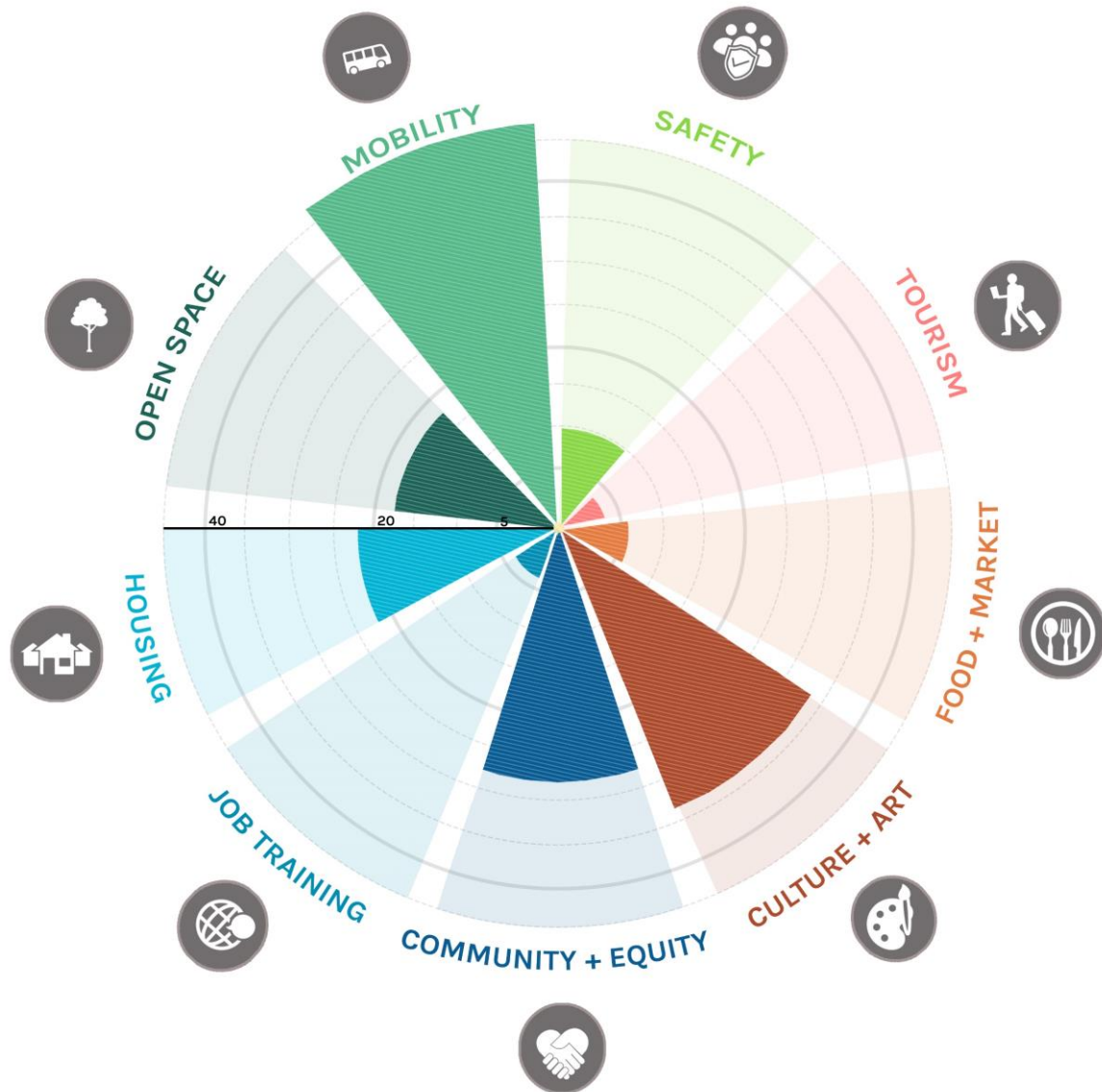
» **Connect to Kern River Parkway Trail**

» **Promote Urban Vitality with Food and Events**

» **Celebrate Bakersfield's Culture & History**

» **Leverage Design Justice to Better Serve Disadvantaged Populations and Small Businesses**

Stay Connected
Social Media, Newsletters and Websites

 @CaliforniaHighSpeedRail   **@CaHSRA**

 /CAHighSpeedRail   **@CaHSRA**   **/California-high-speed-rail-authority**

Visit the California High Speed Rail Authority website at *hsr.ca.gov*
and Build HSR California at *BuildHSR.com*

Crime prevention trough environmental design

Hendrik Vanderkimpen

Head of Security

07 Mars 2024

Environmental criminology

Publication by Rashmi Maniyan (Anna University, India, September 2023)

The Impact of Urban Design in minimizing Women's Fear of Crime

➢ India has reported a total of **428.278** cases of **Crime Against Women** in 2021, showing an increase of **15.3%** over 2020 (371.503 cases) according to National Crime Records Bureau (NCRB) report 2021, this includes Indian Penal Code(IPC) crimes such as Theft and Robbery, Kidnapping & Abduction, Rape, Assault on women.

➢ In that **43.414** cases of **Crime Against Women** were registered in 2021, in 19 Metropolitan Cities, which shows an increase of **22.9%** over 2020 (NCRB, report 2021).

➢ As per United Nations Office on Drugs and Crime (UNODC), Crime prevention is defined as **"the strategies and measures that seek to reduce the risk of crimes occurring, and their potential harmful effects on individuals and society, including fear of crime, by intervening to influence their multiple causes."**

Environmental criminology

The Impact of Urban Design in minimizing Women's Fear of Crime

Public spaces during different period of a day
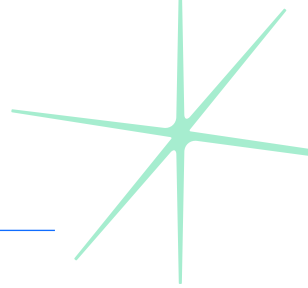
	Unsafe	Fairly Safe	Moderately safe	Safe	Safest
1. How safe you feel in a public space during day?	0%	1.9%	22.9%	**44.8%** (108 responses)	30.5%
2. How safe you feel in a public space during night which is crowded?	1%	17.1%	**40%** (97 responses)	28.6%	13.3%
3. How safe you feel in a public space during night which is lonely?	**41.9** (102 responses)	25.7%	19%	8.6%	4.8%
4. How safe you feel to use a public transport during night?	19%	22.9%	**25.7%** (62 responses)	23.8%	8.6%

Environmental criminology

The Impact of Urban Design in minimizing Women's Fear of Crime

Types of Crime

49.5%
12.4%
12.4%
18.1%

- Physical attack
- Burglary
- Chain snatching
- Theft
- Kidnap
- Sexual assault

Safe spaces

33.3%
16.2%
12.4%
38.1%
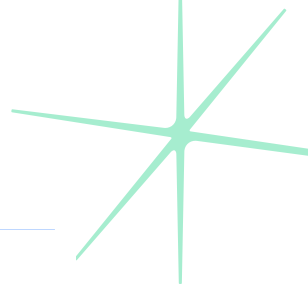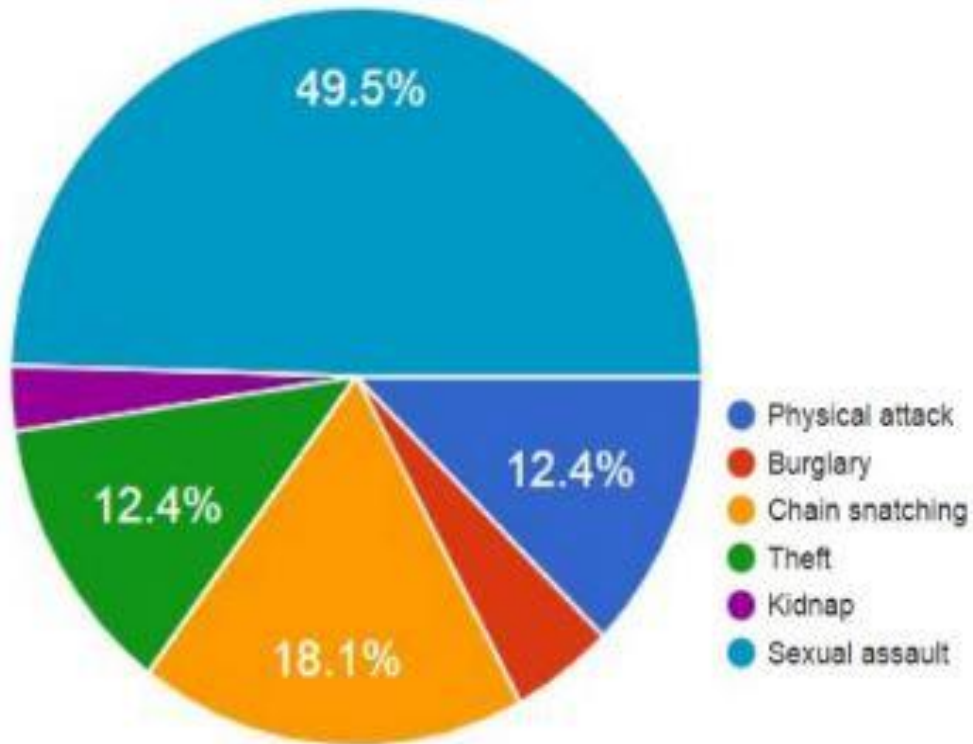
- Pleasant and well maintained
- Cctv monitored
- Busy streets
- Well illuminated spaces
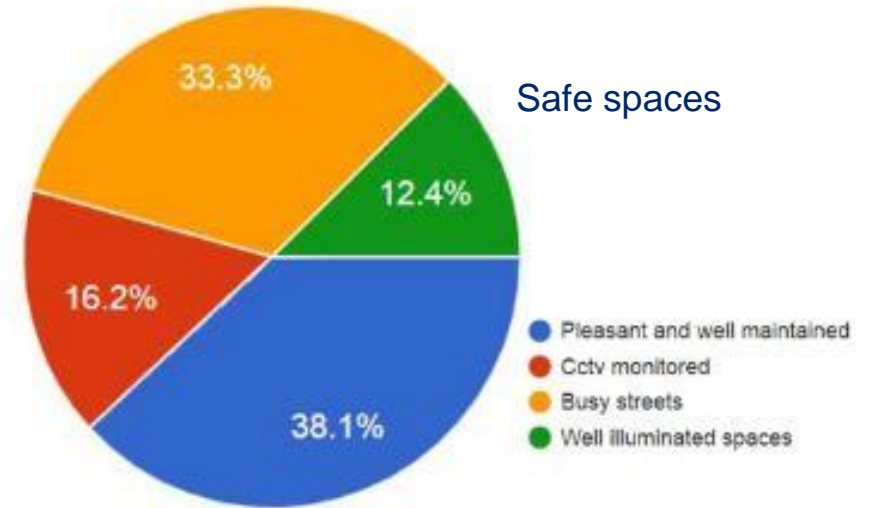
Precautionary measures

23.8%
24.8%
8.6%
42.9%

- Avoid visiting lonely spaces
- Avoid using public spaces during night
- Using tracking systems
- Avoid travelling alone
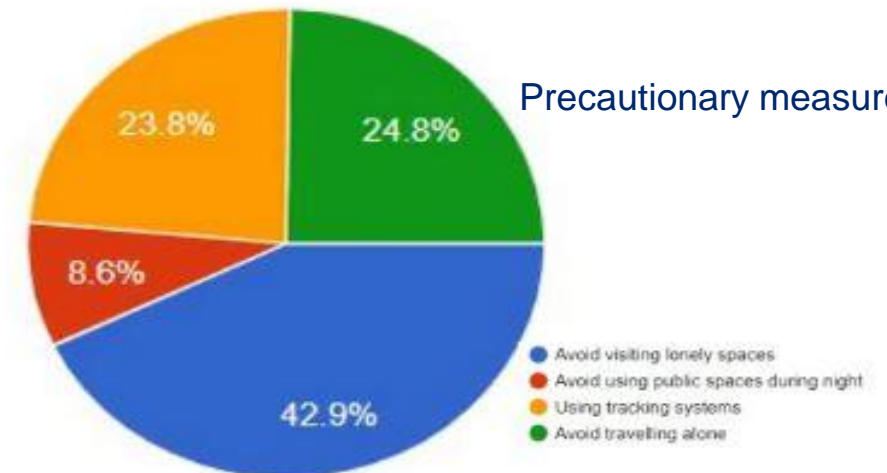
The design and effective use of the building and its surroundings can limit the (fear of) crime and improve the quality of life:

"A multi-disciplinary approach, drawing on criminology, planning and environmental psychology, and is specifically located within the field of environmental criminology [...]. It is concerned with identifying conditions of the physical and social environment that provide opportunities for criminality, and the modification of those conditions in order to reduce such opportunities" (Cozens, 2008).

Environmental criminology
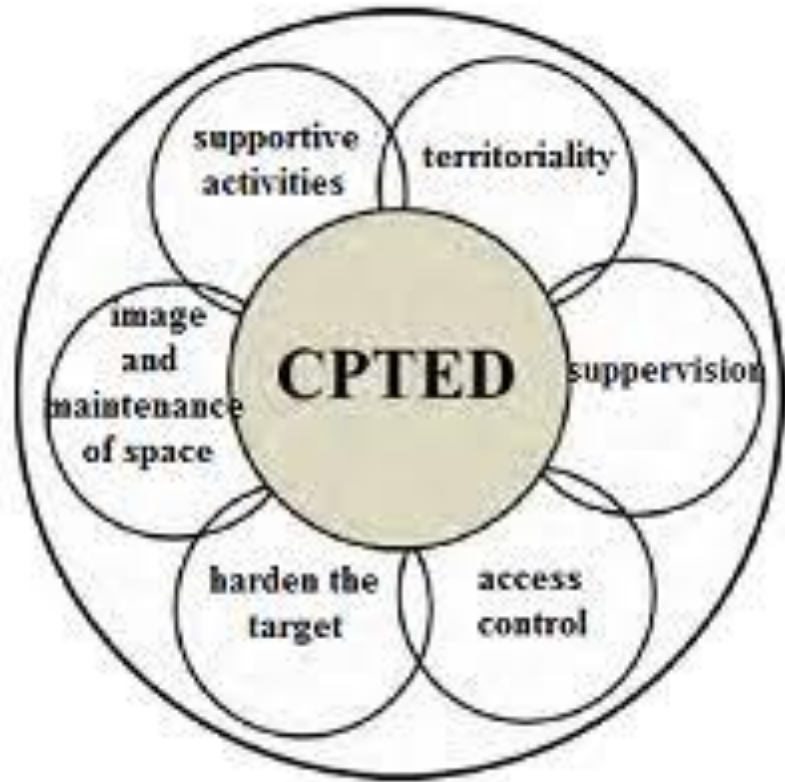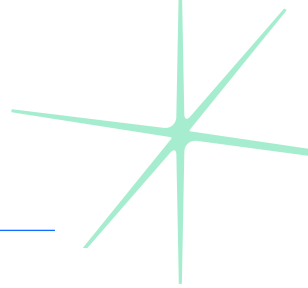
CPTED, second generation dynamic integrated model (Source: Paul Cozens, 2015; adapted from Cozens, 2014)

Introduction to CPTED- First Generation
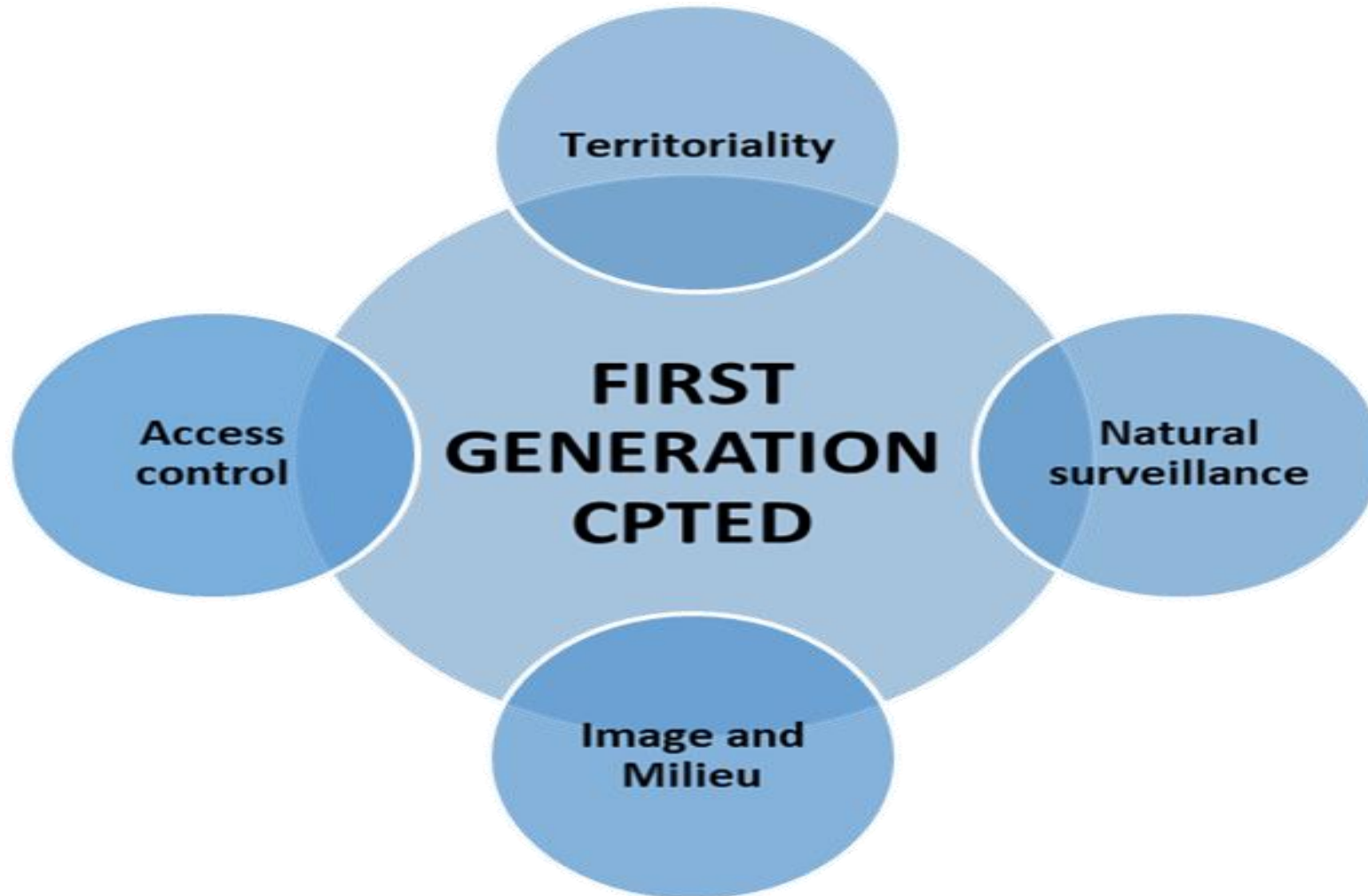
Environmental criminology

Introduction to CPTED- First Generation Examples


TERRITORIALITY

- Definition & limitation of time and space, in such a way that public and private spaces are clear for everyone
- **Creating an environment in which 'intruders' can more easily be identified**

SUPERVISION

Best practices
- Presence and visibility of staff (Securail and train staff)
- CCTV

Environmental criminology

ACCESS CONTROL

Controlling entrances reduces the risk of criminal offenses because a clear distinction is made between public and private space.

Best practices
Controlling access to car parks and bicycle sheds

MAINTENANCE

Indicates that the space is owned by someone and being monitored.

Best practices
Graffiti policy:

Environmental criminology

SUPPORTIVE ACTIVITIES

An activity program increases the use of an environment for safe and controlled activities. This creates natural supervision.

Best practices
- Live performances in stations
- Information touch screens

WIDER AREA

Studies the wider embedding of, for example, a station building in the environment (street, district, municipality,...) → station accessibility
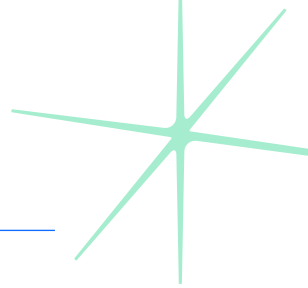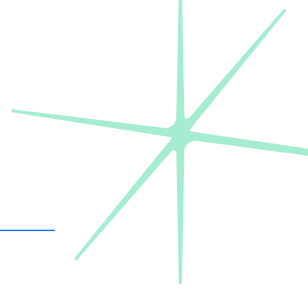
Environmental criminology
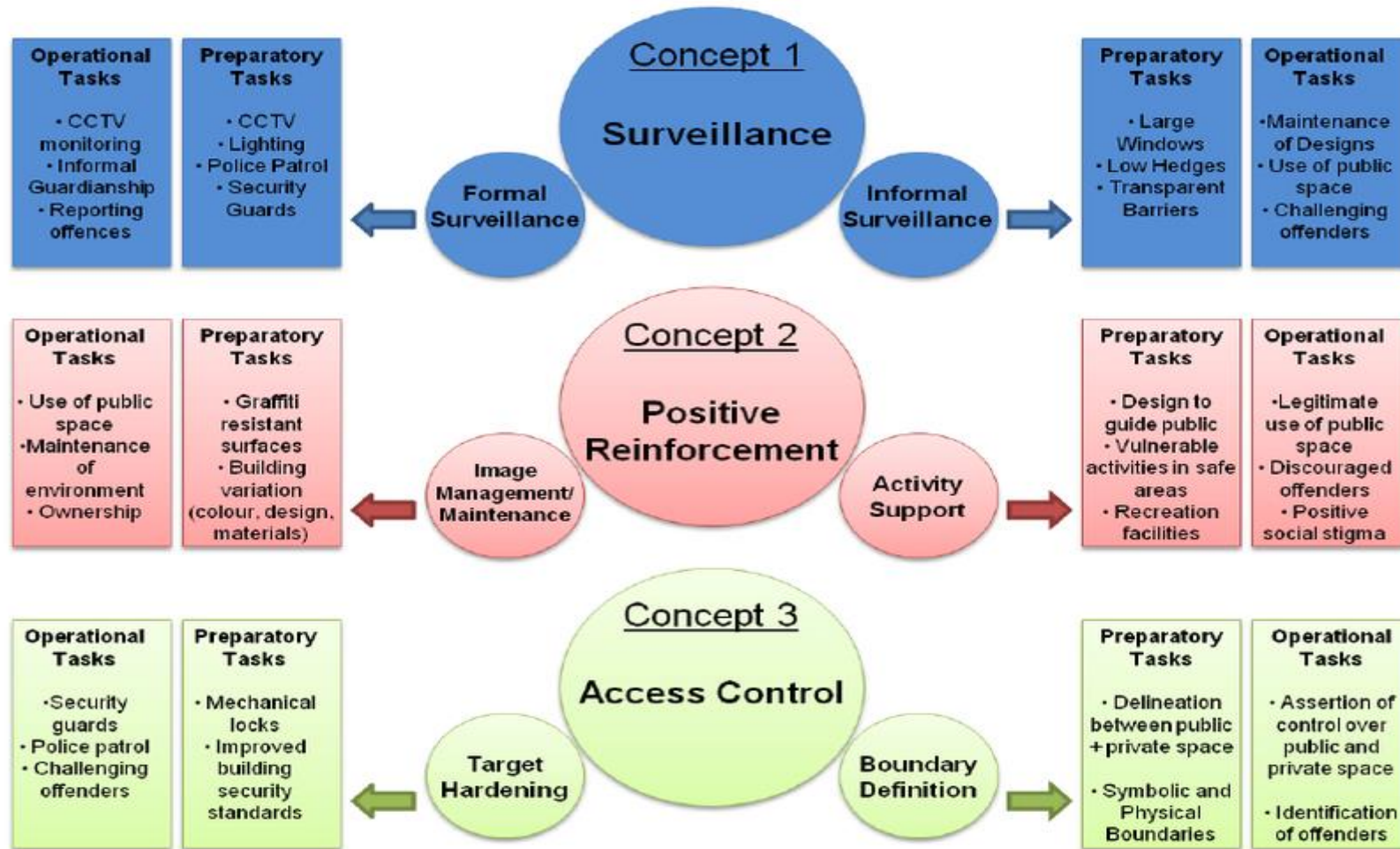
Environmental criminology
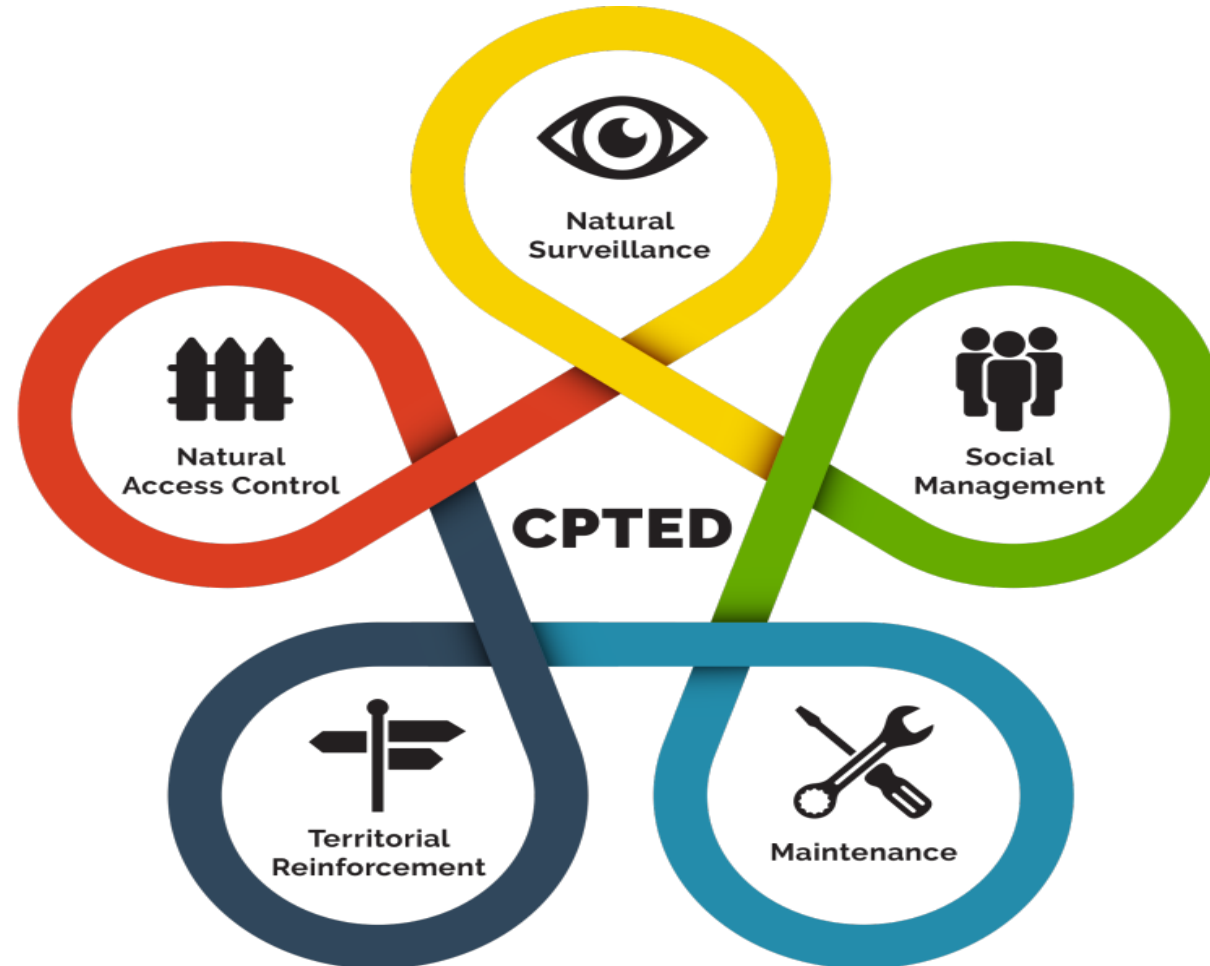
Introduction to CPTED- Second generation
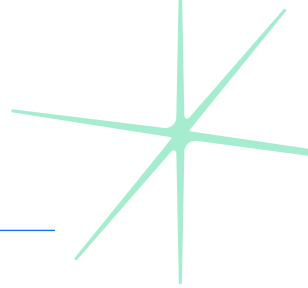
Introduction to CPTED- Second Generation
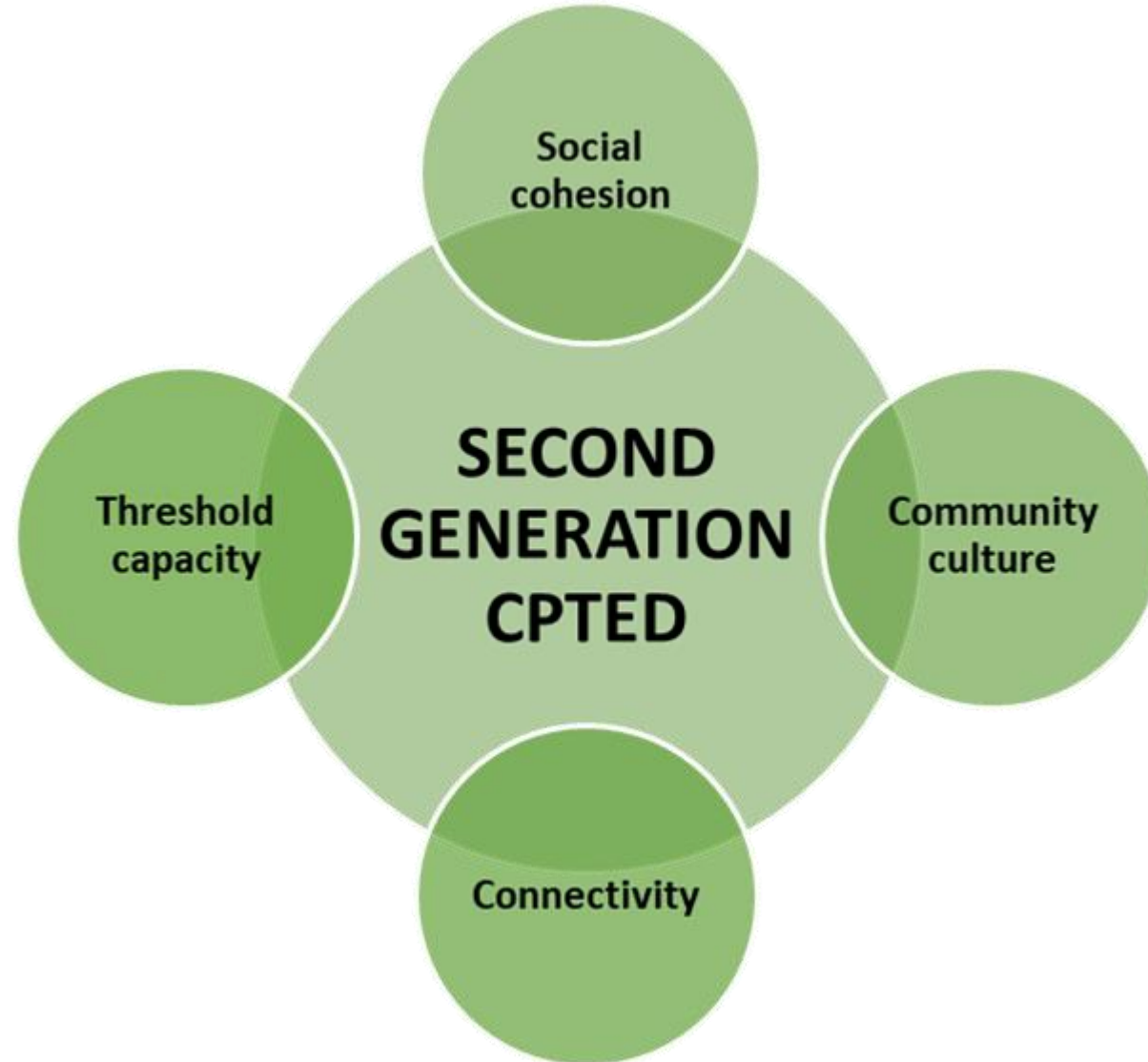
Environmental criminology

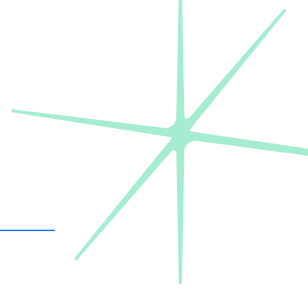## Introduction to CPTED-Second generation concepts

Social cohesion:

➢ Is about nurturing an environment where there exists a mutual respect and appreciation of the similarities and differences between people and groups within a community (public transport).

➢ It is central to second-generation CPTED and also focuses on recognizing, supporting, and celebrating community diversity.

➢ A socially cohesive community values diversity, shares a common vision and a sense of belonging, and works to develop positive relationships between people from different backgrounds.

Community connectivity:

➢ Partnerships within the community can be nurtured by community connectivity. Such connections are the foundation to coordinating activities and programs with and between government and nongovernment agencies.

➢ In theory, a more empowered, well-connected, and integrated community will have a stronger sense of place.

➢ This connectivity can help to encourage and maintain community self-policing to potentially discourage crime and deviant behavior. Example: Brussels-Midi station (approach on 3 pillars)

Environmental criminology

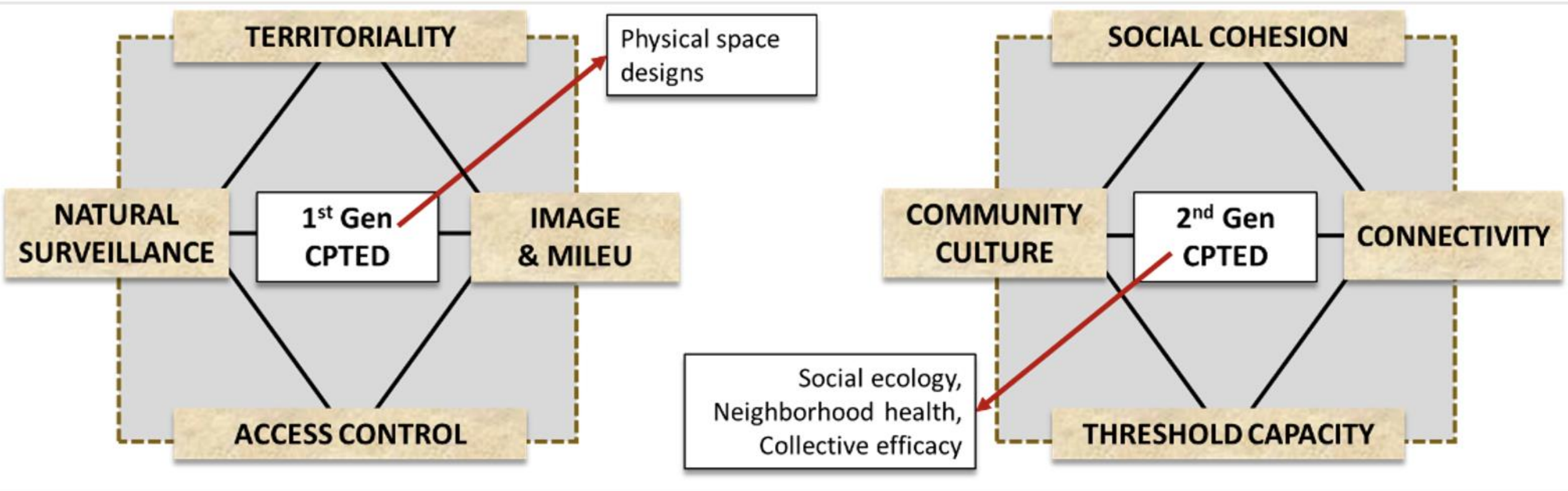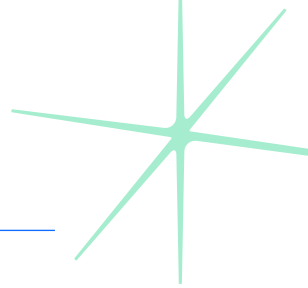## Introduction to CPTED-Second generation concepts

==Community culture:==

➢ Is present when residents come together and share a sense of place and partly explains why they display any territoriality.

➢ This is about the community setting up and participating in festivals, cultural events, youth clubs, and commemorating significant local community events and people.

➢ A strong sense of community can encourage the neighborhood to adopt positive outlooks and behaviors, including self policing.

==Treshold capacity:==

➢ Finally, neighborhoods (stations) can be regarded as ecosystems with a finite carrying capacity for certain activities and land uses.

➢ It (Cozens and Love) is important to recognize and manage this threshold capacity in order to maintain the local community ecosystem by promoting human-scale and pedestrian-oriented land uses and activities.

➢ For example, where the size and density of development do not inadvertently promote anonymity, the threshold capacity has not been exceeded. Where neighborhood ecosystems exceed their threshold capacity, this is referred to as the tipping point (Saville 1996) where the functionality of the neighborhood is affected. This can result in increased levels of crime and fear of crime. For example, where there is a high concentration of bars in a city center or in the stations area, at some point, the density of patrons and increases in offending can exceed the ability for police and emergency services to function effectively.
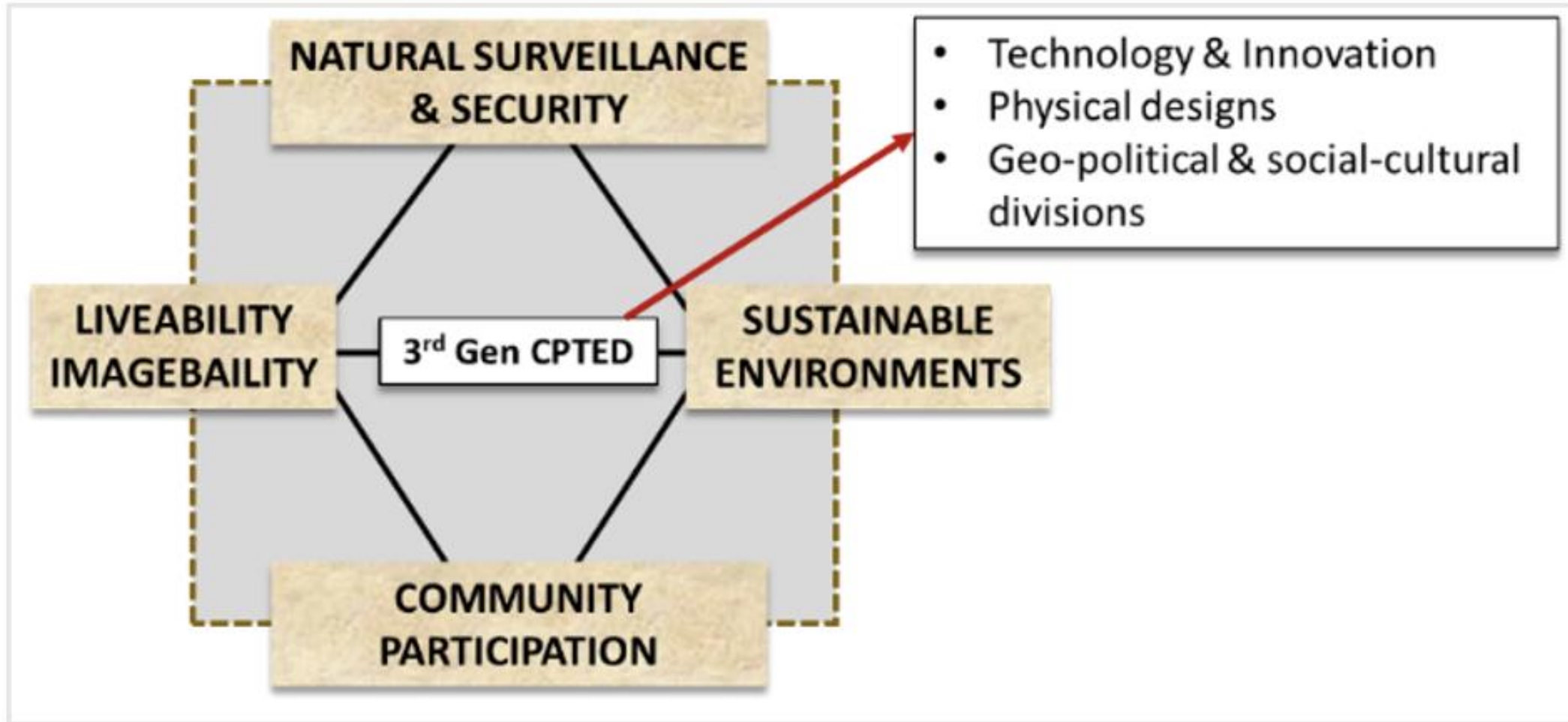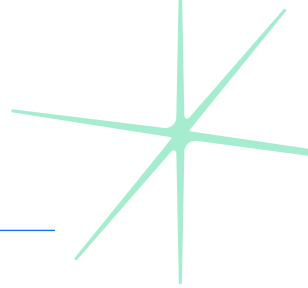
Introduction to CPTED- First & Second Generation

Environmental criminology
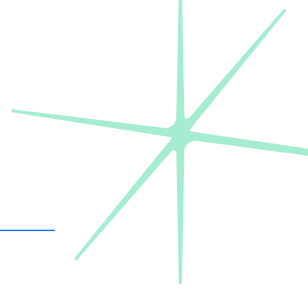
Environmental criminology

Overview

CPTED->	1st Generation	2nd Generation	3rd Generation
Primary concept	Territoriality	Sense of Community	Green strategies
With focus on	Architecture & Physical designs	Social ecology, neighborhood planning & collective efficacy, small-scale environments termed as proximal orientation	Social innovation & sustainability driven by local communities
Initiation	1970s	1997	2010s
Proponents	Ray Jeffrey concurrently Newman & Rand (Defensible theory) as a start-off from Jane Jacob's 'eyes on the street' theory	Greg Saville & Gerry Cleveland	First mention in Joint report by United Nations Interregional Crime and Justice Research Institute (UNICRI) and Massachusetts Institute of Technology (MIT) in 2011 led by the architect and professor Carlos Ratti
Crime addressal	Physical designs to discourage occurrence of crime	Positive social relations between residents, Neighborhood watch initiatives to control crime	Technological aids for surveillance, and cybernetically enhanced beyond just basic safety objectives
Main components	• Territoriality • Natural surveillance • Image and Milieu • Access control	• Social cohesion • Community culture • Connectivity • Threshold capacity	• Surveillance & security • Sustainable environments • Liveability & Imageability • Community participation
Timeframe for implications	Short-time frames	Longer periods	Longer periods

eurostar

Merci
Thank you
Danke
Dank je wel

eurostar

TRAIN2B=QUAL

UIC
INTERNATIONAL UNION
OF RAILWAYS

Bronwen Thornton

CEO, Walk21Foundation

Gonçal Cerda Beneito

PhD candidate, Laboratoire Ville Mobilité Transport (Université Gustave Eiffel - École des Ponts Paristech
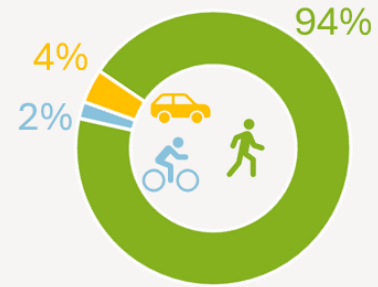
Worth the walk

Catchments and connectivity are part of the journey
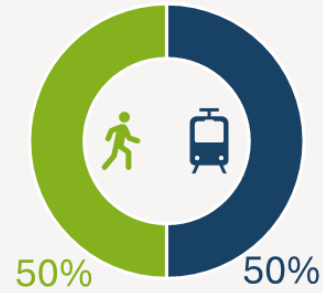
Bronwen Thornton
CEO Walk21 Foundation

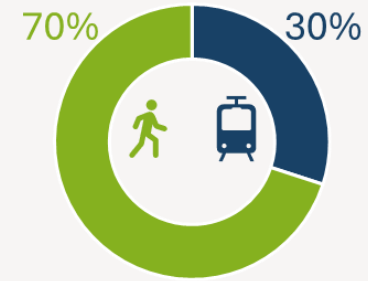**LinkedIn:** @Walk21Foundation
Visit: Walk21.com

WALK21

How people access public transport
94%
4%
2%

Travel time as pedestrian / passenger
50% 50%

Experience of a public transport journey
70% 30%
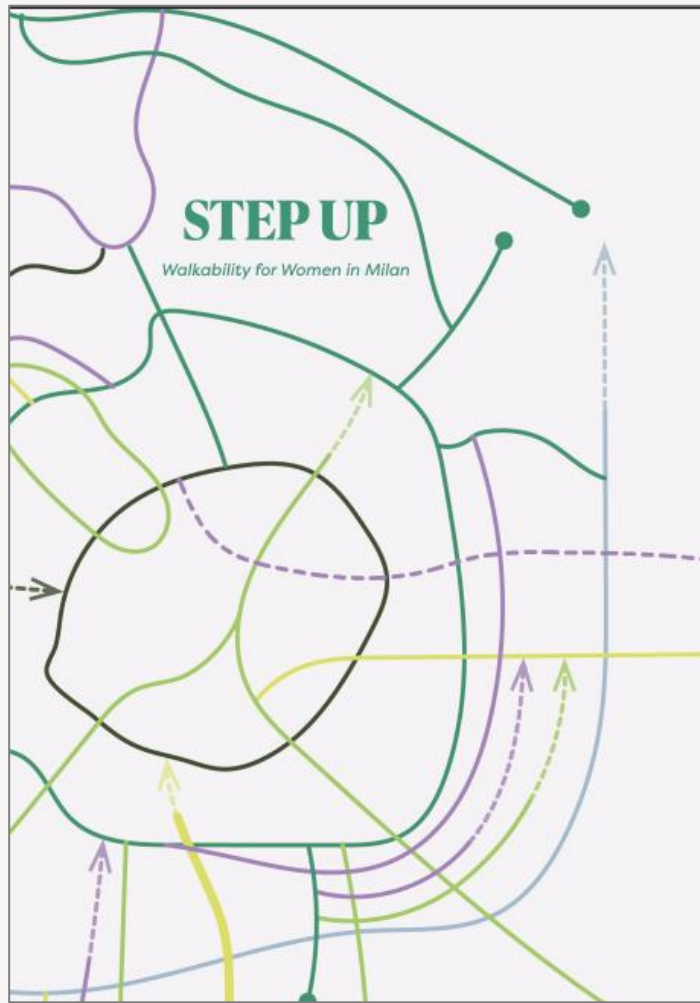
Public transport journey

- ● Walking stage: accessing, waiting time, transitional and leaving the service
- ● On-board public transport

WALK21

Source: Hillnhütter, Helge. (2016) Pedestrian Access to Public Transport. Universitetet i Stavanger. Doctoral dissertation

>1200 HHs!

STEP UP
Walkability for Women in Milan

Walking alone in Milan
Based on project survey results

am   pm

Women+

Men

■ I feel safe   ■ I feel unsafe   ■ I don't go out

WALK21

"When people tell their story it helps them move from understanding harassment as a personal problem requiring personal solutions to a societal problem requiring societal solutions".

2020: 16,634 'stories of harassment

Women's perceived walkability
at the Luas Tram catchment area in Dublin

A data evaluation report using the
Walkability.App

WALKABILITY APP
Participatory Walkability Study
Cairo, Egypt

November 2023

environmental
determinants

Supports, enables and sustains active
and public transport behaviour.

WALK21

WALKABILITY

→ Standardised methodology for data collection

→ Automatic time and weather stamps on data

→ Analysis by people, perceptions and environmental determinants

→ Useful for baseline understanding, targeting responsive interventions, evaluating impact

→ Allows comparison across sites, cities and regions for identifying trends, patterns and differences

→ Supports, enables and sustains active and public transport behaviour.

WALK21

Themes:

→ Inclusivity

→ Positive public space

→ Climate action

→ Good governance

https://walk21.com/conference/walk21-portugal/

THANK YOU!

Bronwen Thornton
CEO Walk21 Foundation

@Walk21Foundation
Walk21.com

Imagine...

Images from: Gonçal CERDÀ BENEITO, 123FR, Pikliss, Matthew Britton, Alamy

Imagine...

Images from: Gonçal CERDÀ BENEITO, 123FR, Pikliss, Matthew Britton, Alamy

Imagine...

Images from: Gonçal CERDÀ BENEITO, 123FR, Pikliss, Matthew Britton, Alamy

Context

- Single mothers, an important and growing category → gender issue

- Weak consideration of single parenthood
    - Complexity managing daily life → Need to provide for all family needs, both financial and logistical (Minnotte 2012)
    - A daily mobility more constrained by their children than parents in couple (Kostyniuk et al. 1989) and more affected by care activities than single fathers (Rosenbloom 2006)

- Little research on both space and motherhood
    - Despite introduction of spatial variables (McDonald 2005, Lo & Houston 2018), and interest on women's perception in different urban spaces (Valentine 1989, Lewis 2019)

Single parents
27% of
households
with children
in Paris

- Single mothers
- Single fathers

13.70%

86.30%
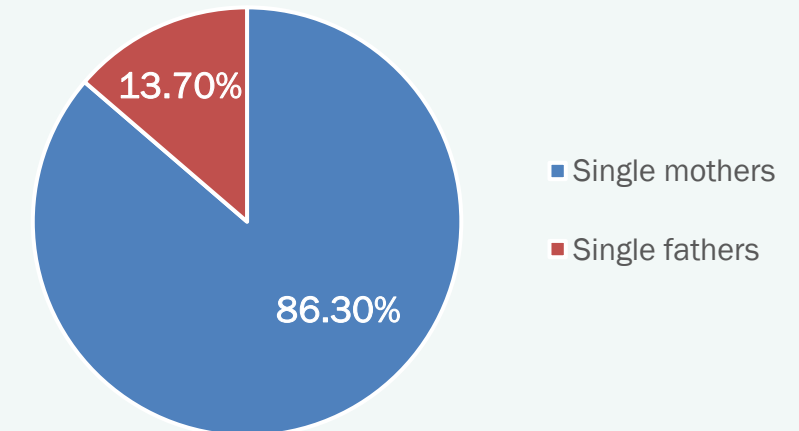
Source: Insee, national census for the Paris region, 2017

Methods used: mixed in the Paris Region

Statistics with official Household Travel Survey

- EGT 2010

Perimeter of collection:

- The Paris Region

Trips information collected:

- 24 hours, one day before the interview

Sample:

- 9,317 parents* (3,171,762 weighted)

Analysis:

- Descriptive statistics with travel purposes (care activities & professional)

Statistics with official Household Travel Survey

31 single mothers*

- Between 1 and 3 children from 1 to 21 years old

- Low-range employees or precarious employment

- Modest standard of living

- Interviews from September 2020 to May 2021

- From diverse municipalities in the Paris region

*Parents/mothers of children under 18

Methods used: mixed in the Paris Region

Statistics with official Household Travel Survey

31 single mothers*

- Between 1 and 3 children from 1 to 21 years old

- Low-range employees or precarious employment

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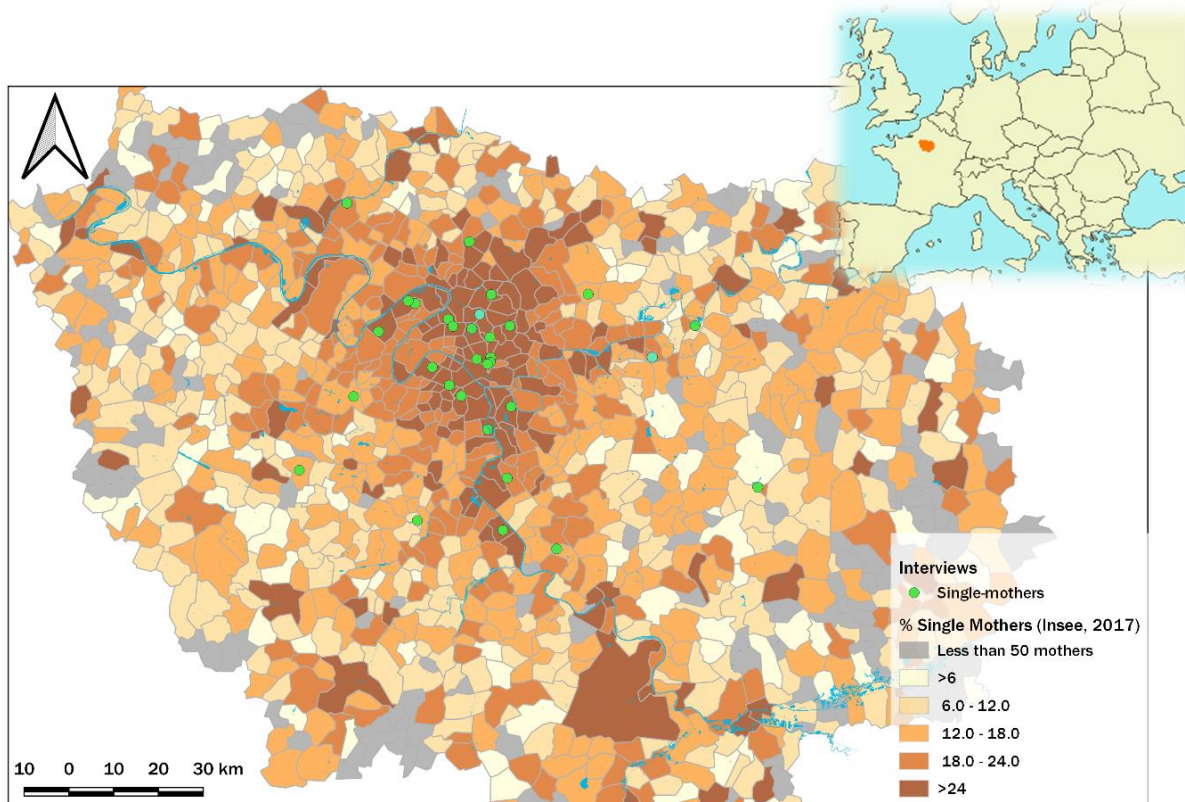- From diverse municipalities in the Paris region

Interviews
- Single-mothers

% Single Mothers (Insee, 2017)
- Less than 50 mothers
- >6
- 6.0 - 12.0
- 12.0 - 18.0
- 18.0 - 24.0
- >24

10   0   10   20   30 km

*Parents/mothers of children under 18

A. Complexity in time

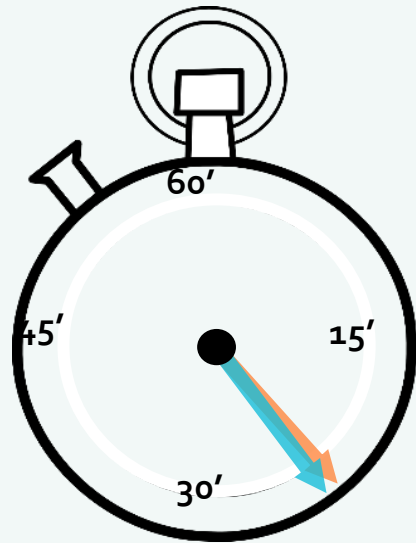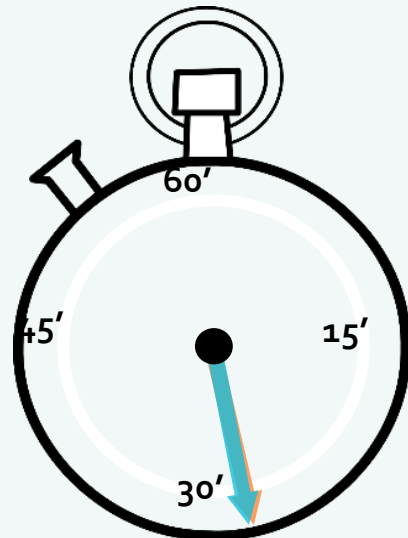| mothers in couple	single mothers	fathers in couple	single fathers
Total = 94 minutes	Total = 114 minutes	Total = 121 minutes	Total = 119 minutes

Care activites →
Professional →
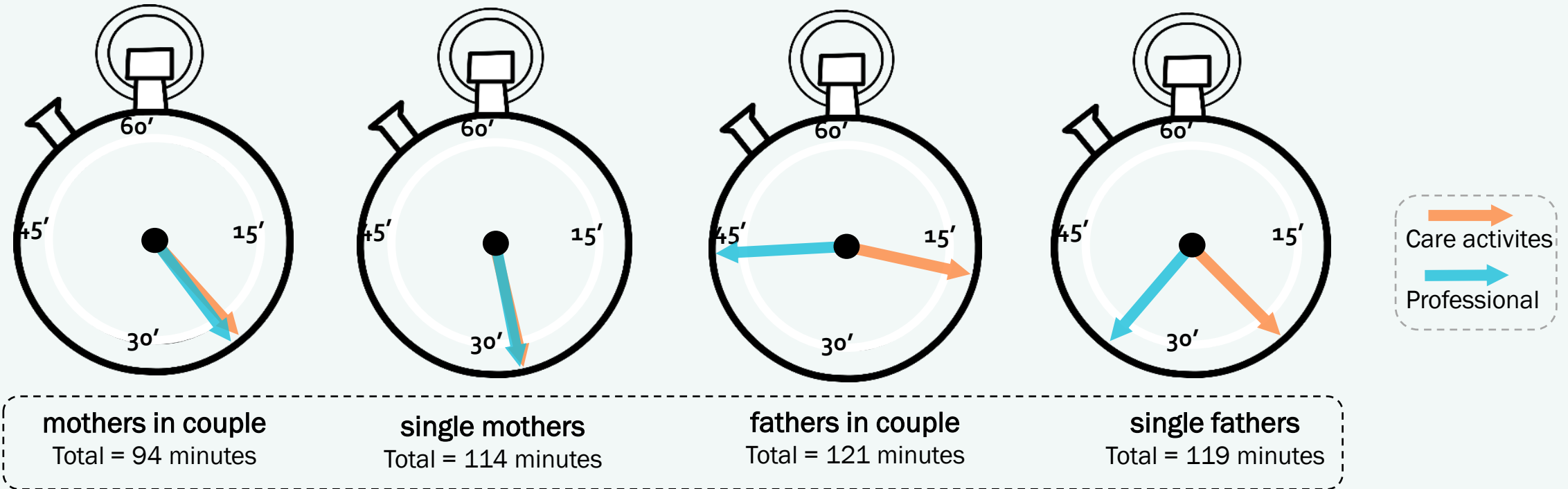
Average daily travel time-budget per purpose (in minutes)

Very low difference among fathers
Strong difference among mothers:
- Single mothers spend 20 minutes more traveling than mothers in couple

A. Complexity in time

mothers in couple
Total = 94 minutes
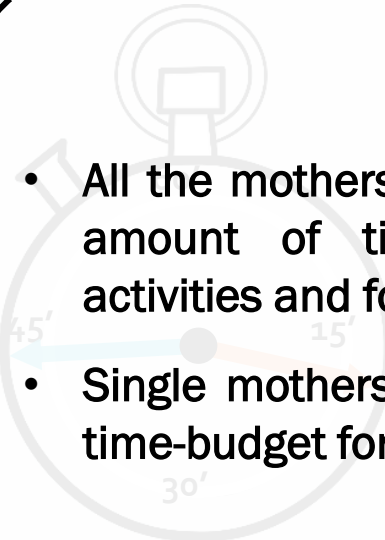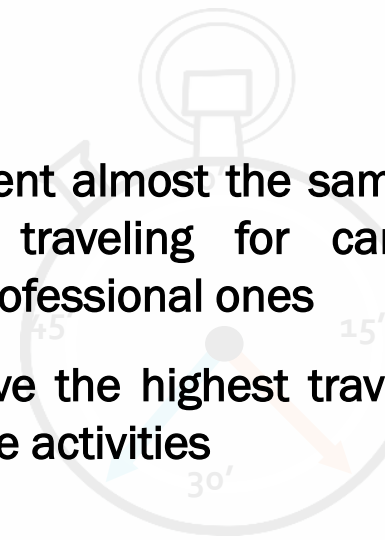
single mothers
Total = 114 minutes

- All the mothers spent almost the same amount of time traveling for care activities and for professional ones

- Single mothers have the highest travel time-budget for care activities

fathers in couple
Total = 121 minutes

single fathers
Total = 119 minutes

Care activites

Professional

Average daily travel time-budget per purpose (in minutes)

B. Complexity in space

- Taking into account children's schedules and spaces
- Obstacles in public and mobility spaces: a reminder of the role of mothers

«The thing that was complicated for me was that when you have two children: one in a stroller and the other who can't go down stairs by himself, well, you can't take trains at all. I can carry a stroller up and down the stairs, but I can't carry the stroller and hold hands with the older child. So when I had to move or take the metro or the suburban train, I always had to find someone to hold my older son's hand and help him down the stairs. [...] And the person who takes the first staircase down, doesn't take him down the stairs because she's late and has to catch her train. As a result, you need to find almost one person per staircase ramp. Knowing that a stroller with a baby can quickly become quite heavy. [...] And then, the little one isn't autonomous enough, so I can't... He walks, but I can't go long distances. So I have to have the stroller, and with the stroller I can't, that's it, I can't take the train easily. [...] So, yes, I'm a bit blocked.»

Jeanne, mother of 3 and 1 years-old children from a dense central neighborhood

* All the quotes are translated from French

C. Complexity in coordinating

- Need to coordinate different activities (professional, domestic) without the presence of a partner
- An exacerbation of the effects of the constant presence of children
- Lack of spare time

«Even going to buy a baguette is complicated. In other words, all my mobility has changed, all my freedom has changed. I used to be able to tell him to take the kids, so I'd leave at 7:30 in the morning or come home at 6pm. That means being able to go shopping until 6pm. [...]
To get the older one back to the activity, I have the younger one to lug around, and as a result, the younger one is fed up. She's tired, she can't take it anymore, she cries; she doesn't want to organize her week around her big sister.»

Elisabetta, mother of 7 and 5 years old children, from a dense central outskirt

D. Strategical uses of mobility spaces

- An optimization of time spent in the mobility spaces
- Combine activities while traveling or in mobility spaces
- Domestic activities or "leisure time"

«On Monday, we have an appointment with the psychologist at 6.30pm in another town. I'm going to take his sister out, I'm going to pick him up [my eldest son]. I have to take his sister out of school at 5:30 p.m. at the latest, pick up his brother, and then leave. During the session, well, we make the most of it, doing my daughter's homework in the car. [...] In short, I always try to find ways of moving forward, to save time on the weekly schedule.»

Sabine, 12 and 6 years old children from suburban municipality

«So when I walk, I listen to music, when I take the train, I listen to music and/or read fiction books. [...] Because in fact, these are rare moments for me, so they're very selfish moments. So, I also manage my daily life, but it's the time when I can listen to the music I want without my daughter bothering me, "Mom, put on this song", and there I say to myself "but no, I just want to listen to music for me". But then, the train is a time when I can be alone, almost with myself, all by myself, without having to share this space and this moment of listening or reading.»

Simone, 8 years old children, from dense outskirt

Conclusions

- More knowledge of single mothers' mobility practices
  - Reveals a complex daily life with little free time
  - Understand an archetype of constrained metropolitan lifestyles for more inclusive policies

- How can rail station design improve these situations?
  - Complete other fields of action/ policies
  - Design for those who combine and chain various activities, who carry other persons and goods, who need to be quick
  - Learn from their strategies in mobility spaces to facilitate them

TRAIN2B=QUAL

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RUNNING & JUGGLING

THE COMPLEXITY OF SINGLE MOTHERS' DAILY MOBILITY IN THE PARIS REGION

THANK YOU FOR YOUR ATTENTION

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LVMT Laboratoire Ville Mobilité Transport

Université Gustave Eiffel

Updated timeline

7 July 2023

13 September 2023

7 March 2024

16 May 2024

1st Online workshop

Gender disaggregated data

2nd Online workshop

Security

3rd Online workshop

Gender responsive design for stations/ infrastructure

4th Online workshop

Gender equality in hiring and in the work environment

UIC Gender Equality activities

- **Opportunities:**

  - For UIC members: new gender sector

  - Regional Workstreams

- **Benefits**

  - Regional deep dives

  - Cross regional learning and best practice exchange

Future actions

- **Research on barriers** to working in rail for women and the female experience as a rail passenger

- **Global charter** for women & Rail with guidance

- **Develop training** and best practice guidance

- Promote and deliver **e-learning materials**

Help us take this work further!

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