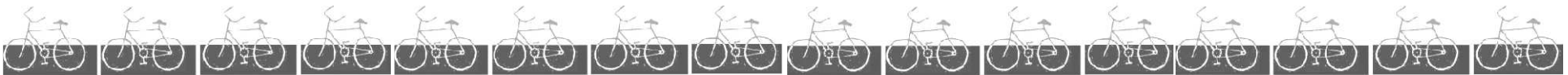


**Bicycle use in Santiago de Chile:
On the way to an integrated transport system?**



Presentation index

How to achieve a permanent bicycle use as a means of transportation in Santiago de Chile?

1. Santiago's actual situation
2. What is missing

Social and political requirements

3. La Pintana "The example"
4. Functional potentials
5. Spatial potentials
6. La Pintana conclusions

The bicycle role

7. Final Conclusions

1. Santiago's actual situation

How is the political and social situation for the bicycle use in Santiago?



BICICULTURA in the government palace (November 2006)

1. Santiago's actual situation

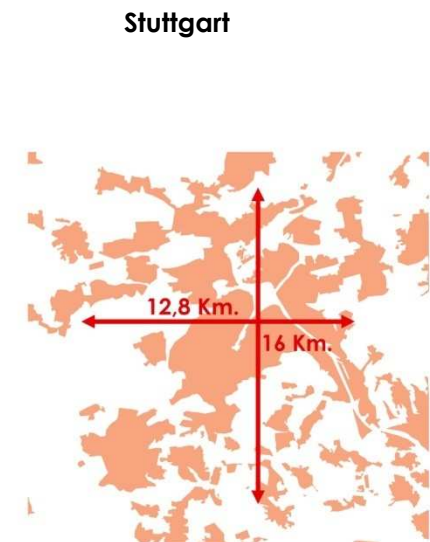
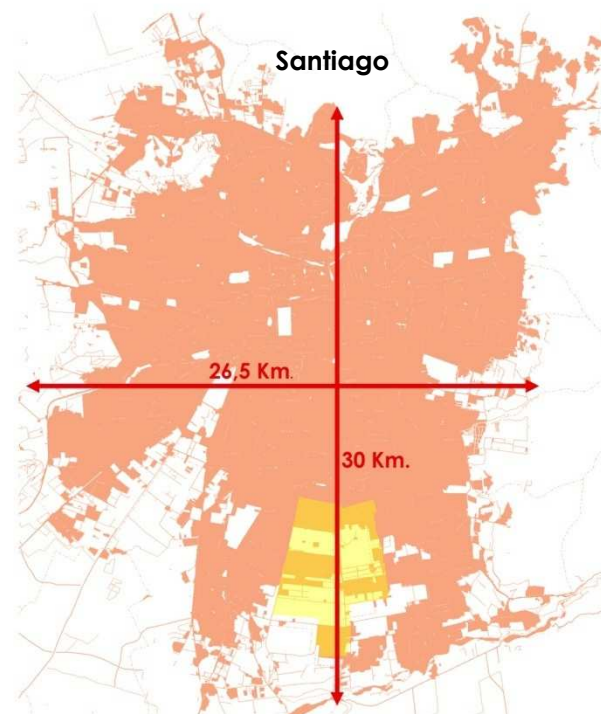
1.1 Geographical context and political distribution "Difficulties"

Population The capital, with 5.772.617 inhabitants (40,09%)

Distribution Divided in 32 communes, poor and rich

Distances Radius of ca. 15 KM.

Pollution Between Mountains and a high car / bus use



1. Santiago's actual situation

1.2 Political context "Something is changing"

Politics and decision makers Committed with the bicycle use

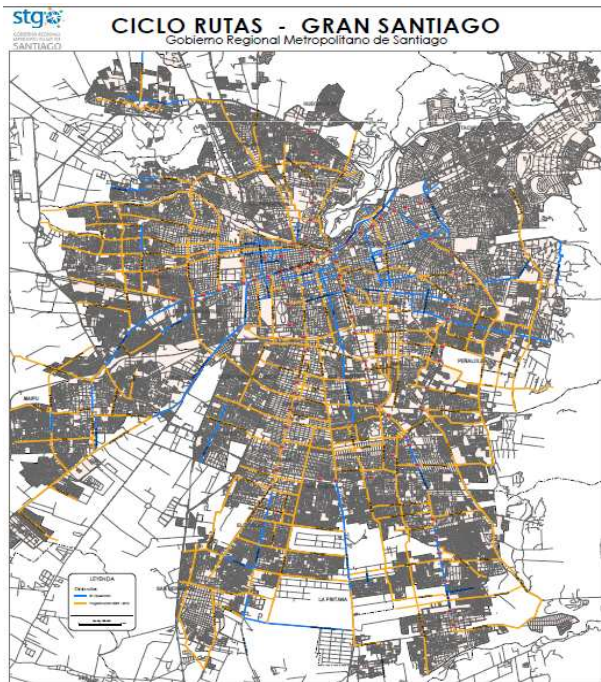
Bicycle associated Projects

Plan Maestro de Ciclorrutas 2007-2012: complete 690 km. of bicycle paths in Santiago

200 Bicycle Parkings

SECTRA's new manual for cycle paths planning

Particular projects



Ex president Bachelet (July 2009),

Signs the bill for the "Bicycle use promotion"



The new bicycle parkings associated to the underground (9 until now)



New rent bicycles in Providencia



CICLO RECREOVIA cycling and walking Sunday street closures

President Piñera (September 2010)
Aims at transforming the bicycle in a real mean of transportation
Aims at increasing the bicycle use from a 3% to an 8 %

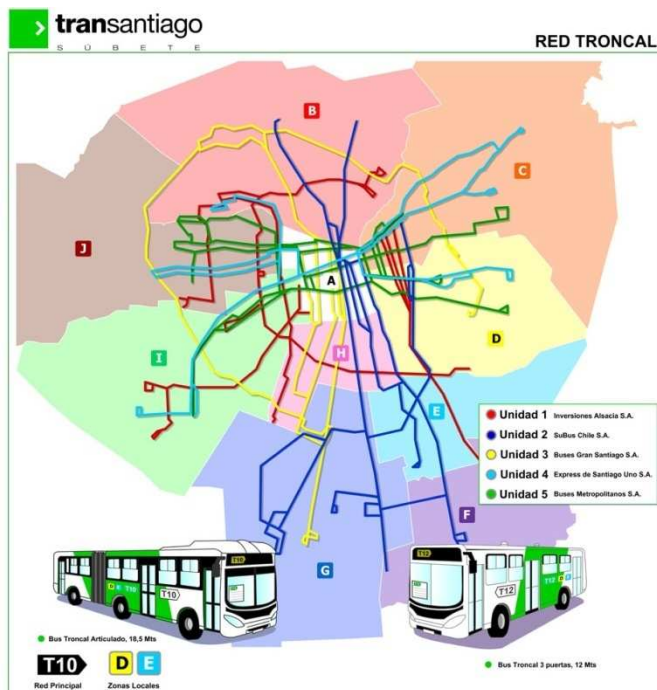
1. Santiago's actual situation

1.2 Political Context "Something is changing"

Other Transport Projects

Transantiago: new underground and buses system

Urban Highways: seven new highways



- Subdivides the city in different trip zones
- Generates a main and a local network
- Demands a new infrastructure

New exclusive bus lanes
New bus stops
Intermodal stations



Launched in February 2006
Execution difficulties
High costs in infrastructure and implementation
High evasion

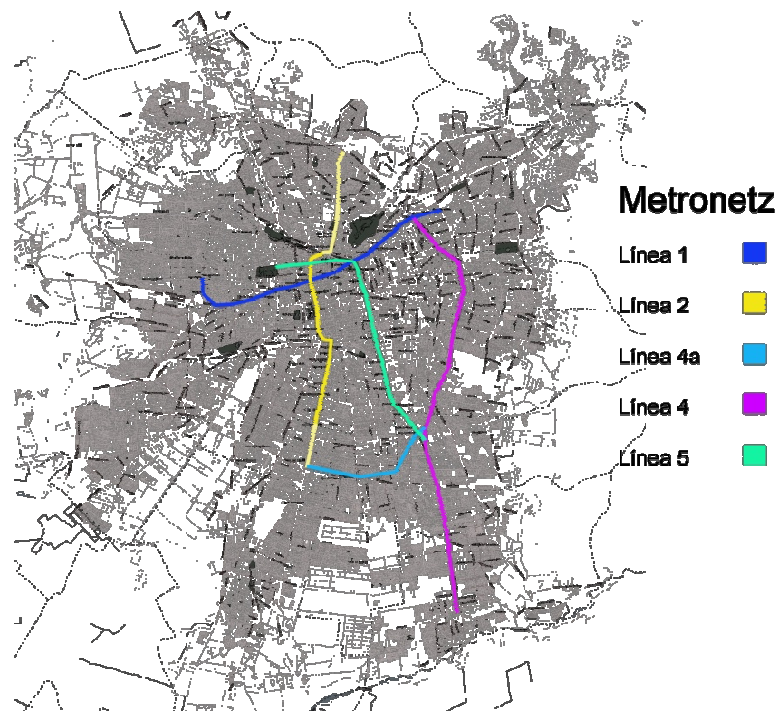
1. Santiago's actual situation

1.2 Political Context "Something is changing"

Other Transport Projects

Transantiago: new underground and buses system

Urban Highways: seven new highways



- Extends the line 1 and 5
- Builds the lines 4 and 4A
- 33 new stations
- 38 km. of extension

It is considered a part of the main network of Transantiago
Some lines are overcharged
Good management of the problems

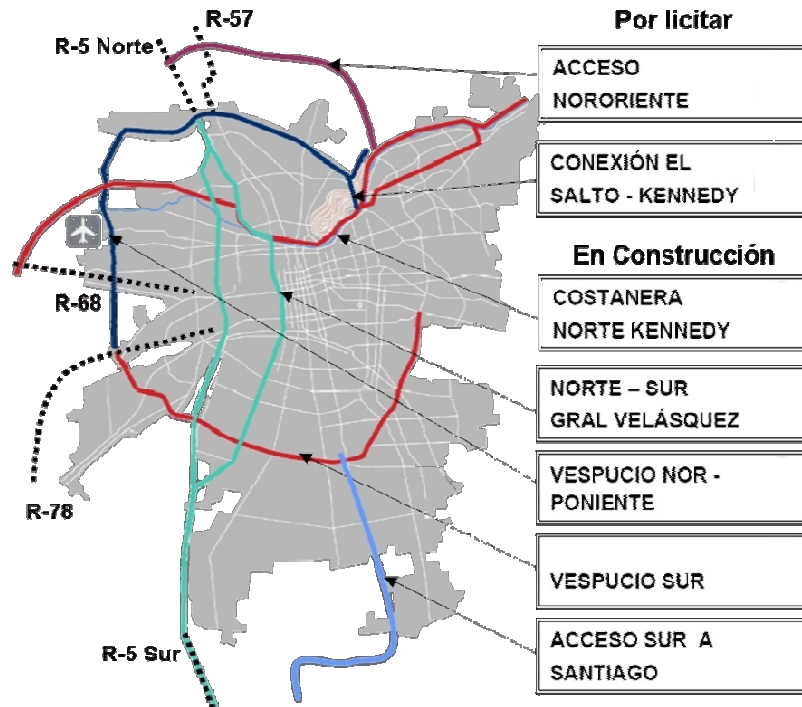
1. Santiago's actual situation

1.2 Political Context "Something is changing"

Other Transport Projects

Transantiago: new underground and buses system

Urban Highways: seven new highways



- System with seven new urban highways
- Private investors built them and profit with them
- Its use is liable to pay

Excludes poorer people and people who don't have a car
Some of them were soon collapsed



1. Santiago's actual situation

1.3 Cultural Context "Action"

Users

Needs

Conviction and fashion

Leisure time

NGOs

- More than 10 NGOs working for the Bicycle promotion since 1996
- Consolidated event: annual bicycle Festival organized by BICICULTURA (launched in 2006)
- Citizen-government Roundtable for a bicycle- friendly culture in Chile (launched in July 2008)
- Bicycle Partnership Program between I-CE (Interface for Cycling Expertise), Ciudad Viva and Santiago de Chile City Council (2007-2009)



1. Santiago's actual situation

1.4 Bicycle use "Facts"

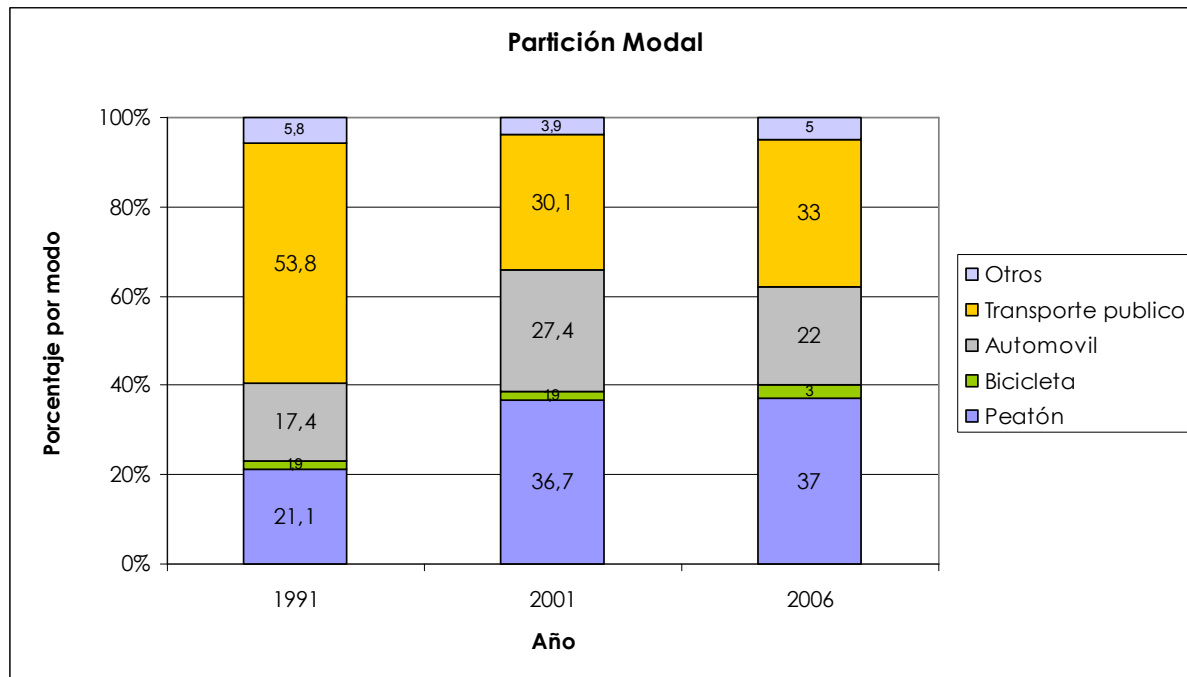
- Use increasing 2001-2006: **157 %** from a 1,9 % to an 3%
- **900.000** cyclists in Santiago (INE)
- 501.000 daily bicycle trips in Santiago



Critical mass, each month in Santiago center



Pocuro Cycle path



2. What is missing

2.1 Amelioration of the infrastructures

The last authorities (until march 2010) didn't seize their opportunities to improve their knowledge.

The result: incomplete , indirect and uncomfortable cycle paths

Strong use of informal routes



Dangerous behaviour
Bad cycle path design



Misuse of the sidewalks, lack of cyclepaths



Misuse of cycle paths

2. What is missing

2.2 Integrated transport Policies

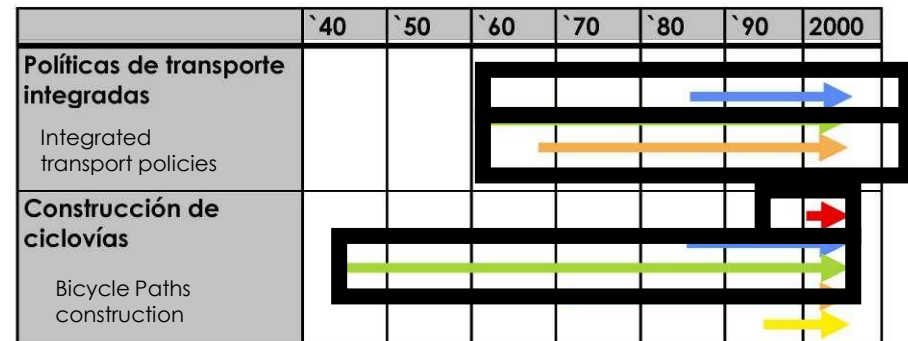
Integrated transport policies in Santiago and in another cities

Transport Policies in Santiago

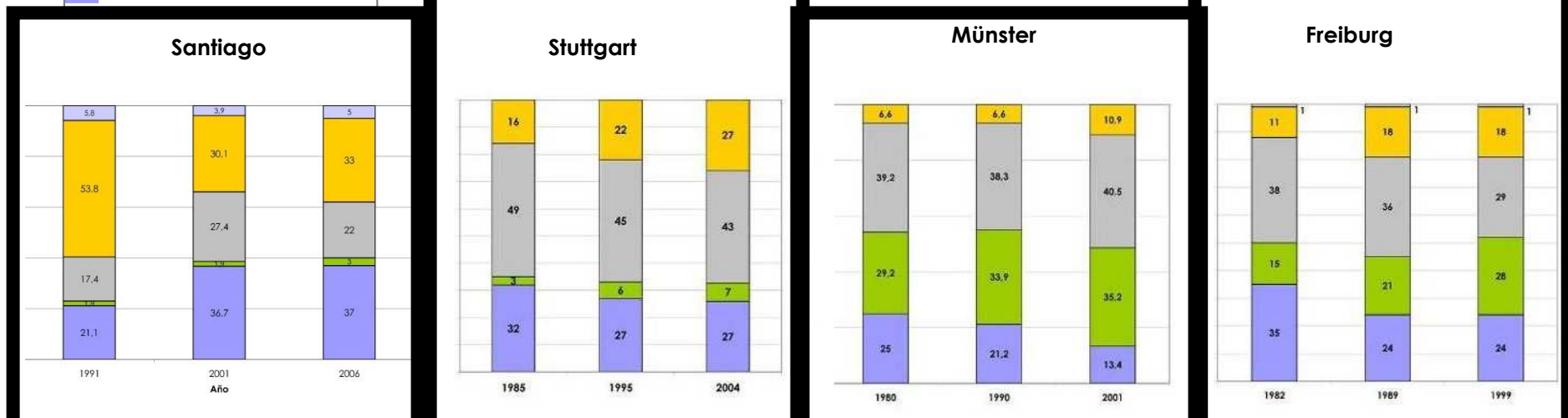
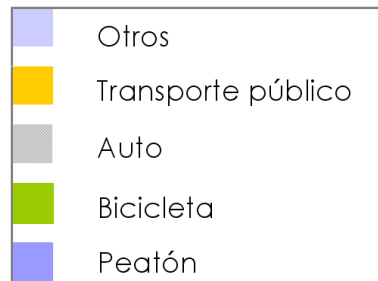
Urban highways

Cycle paths GRAN SANTIAGO

Transantiago



(ELAB. PROPIA)



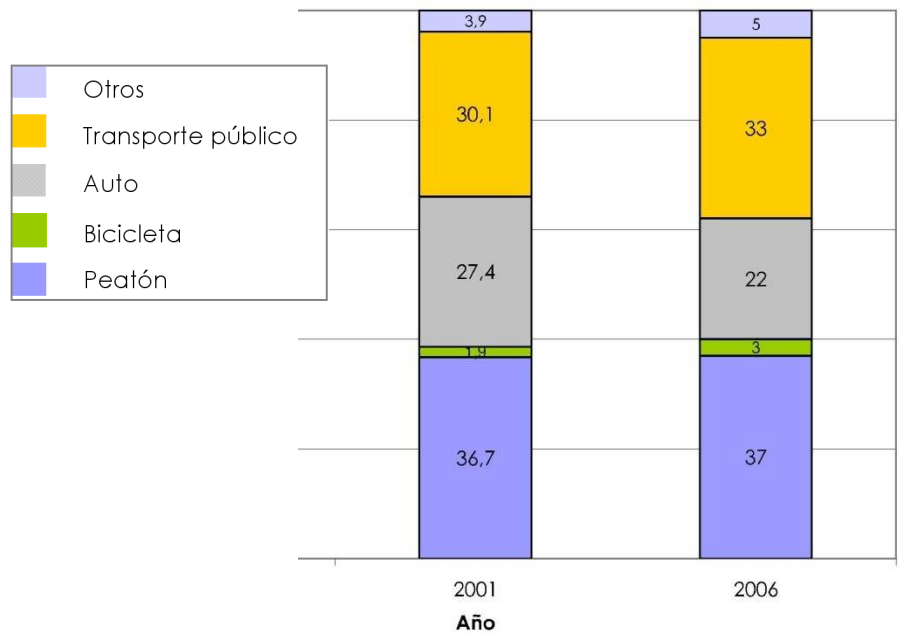
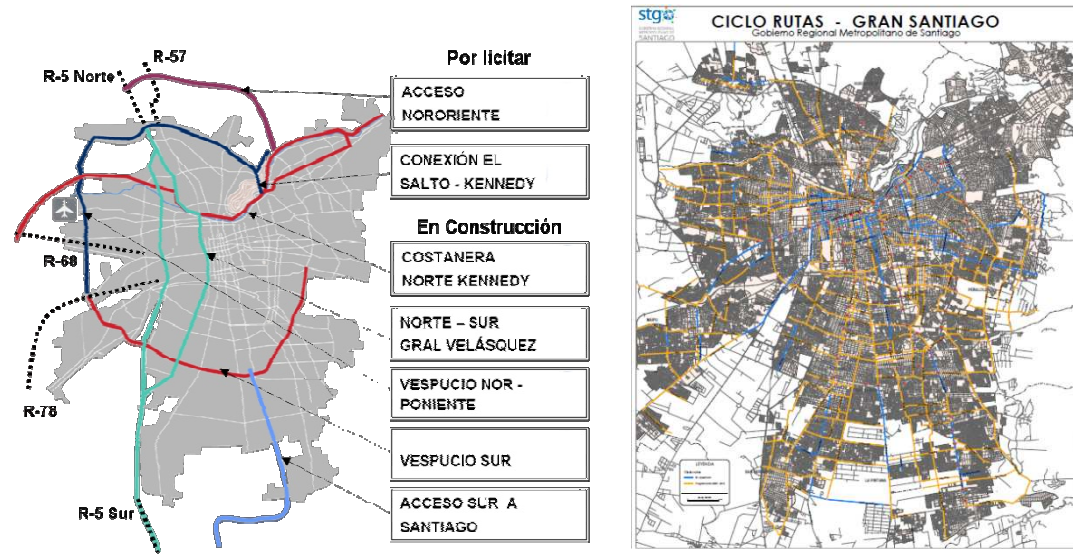
2. What is missing

2.2 Integrated transport Policies

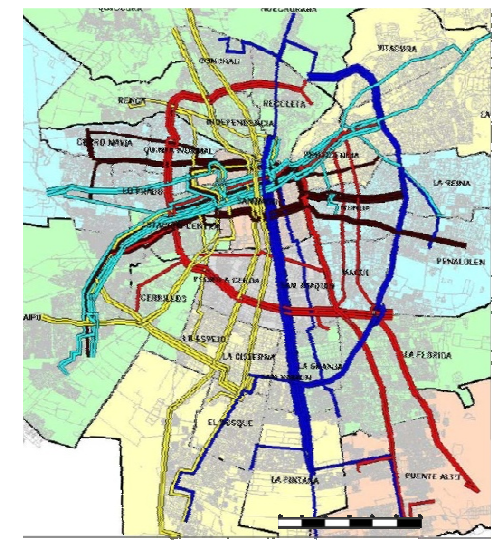
Integrated transport policies in La Pintana and in another cities

Transport Policies in Santiago

Is there an integrated transport policy in Santiago?



(MOPTI)



(transantiago.cl)

2. What is missing

2.3 Technical unit

New authority

Interdisciplinary group of professionals that works finding solutions, to integrate and promote the bicycle use

Transversal: that integrates bicycle use in every level



2. What is missing

2.4 Bicycle use promotion and education

The best bicycle promoters and educators are the NGOs and the civil society

They are engaged with the bicycle cause

They work permanently and they keep and develop their knowledge



School for cyclist women (by MACLETA)



Lake Sagaris (director of Ciudad viva) was awarded with the Leadership Award for Cycling Promotion (VELOCITY-2011)



Bicycle use guide for Santiago de Chile made by different NGOs

1. Santiago's actual situation

How is the political and social situation for the bicycle use in Santiago?

Good intentions



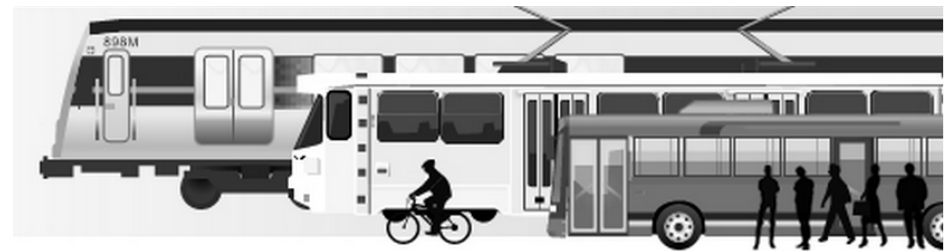
Are still not reflected on the new Infrastructure



- It is a good opportunity to implementation and to discuss about integrated transport policies
- Need of a technical unit
- Need of bicycle use promotion (NGO's subvention)

3. La Pintana , the example

**What is the role of the bicycle in the new Santiago's transport chain?
How can a bicycle path network help to ameliorate the urban context?**



3. La Pintana , the example

- One of the poorest communities in Chile
- 17 km. from Santiago city center
- It is isolated from important services and institutions
- Monofunctional: it is just residential
- Mobility problems
- Strong bicycle use funded by the state to overcome poverty
- 46 % of the homes own a bicycle
- Each 5 homes own a car while in Santiago every 2 homes there is a car (0,21 car/ home and 0,56 car/ home)
- Incomplete infrastructure
- Public spaces in poor conditions
- Lack of parks and green areas
- Strong use of the streets and alleyways
- Mixed landscape
- The municipality supports bicycle use



4. Functional potentials

4.1 Trips data

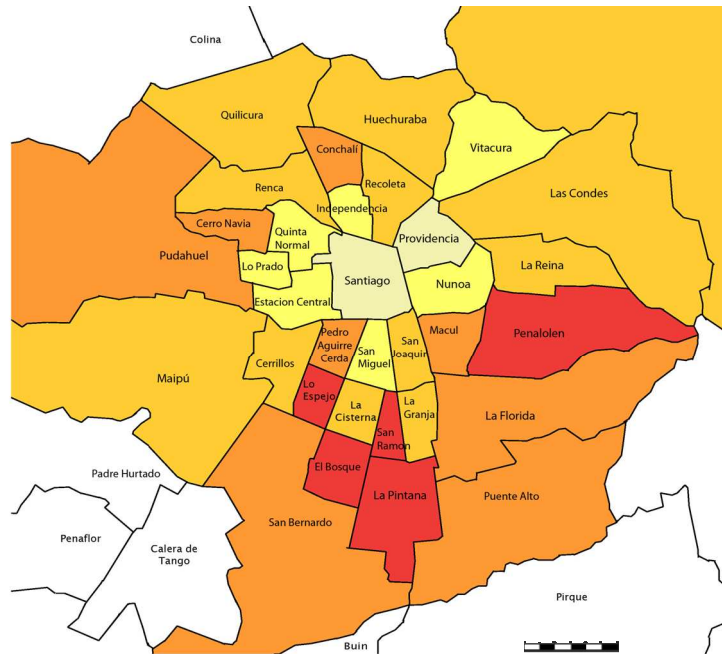
Forecast trips in Santiago

21% of La Pintana trips

Destinations per mode with origin in Pintana

Trips substitution

Percentage of generated bike trips in the total trips of each commune



Comuna	Viajes totales	Viajes en Bicicleta	Porcentaje	Rango
La Pintana	80,605	17,200	21,3	mas de 20
Penalolen	70,002	14,540	20,8	
Lo Espejo	33,943	6,952	20,5	
El Bosque	42,940	8,760	20,4	
San Ramon	20,017	5,226	20,1	17,1 - 20,0
Pudahuel	53,937	10,618	19,7	
San Bernardo	115,434	21,616	18,7	
Conchali	34,839	6,273	18,0	
Cerro Navia	69,327	12,294	17,7	
Pedro Aguirre Cerda	15,140	2,658	17,6	
Macul	41,371	7,241	17,5	
Puente Alto	285,349	49,065	17,2	
La Florida	166,148	28,498	17,2	
Huechuraba	22,776	3,654	16,0	
Renca	22,152	3,542	16,0	
La Reina	44,655	7,028	15,7	
La Granja	22,164	3,406	15,4	
Maipu	269,138	41,177	15,3	
Cerrillos	67,731	10,026	15,2	
La Cisterna	32,963	4,927	14,9	
San Joaquin	14,913	2,176	14,6	
Recoleta	69,486	10,128	14,6	
Quilicura	76,226	11,070	14,5	
Las Condes	218,243	31,334	14,4	10,1 - 14,0
Lo Barnechea	54,360	7,828	14,4	
Vitacura	69,042	9,646	14,0	
Independencia	39,214	5,502	14,0	
Estacion Central	43,334	5,915	13,6	
Quinta Normal	30,698	4,171	13,6	
Lo Prado	23,707	3,182	13,4	
San Miguel	42,152	5,068	12,0	
Nunoa	97,102	11,427	11,8	
Providencia	183,393	13,047	7,1	
Santiago	724,889	41,496	5,7	

4. Functional potentials

4.1 Trips data

Forecast trips in Santiago

Destinations per mode with origin in Pintana

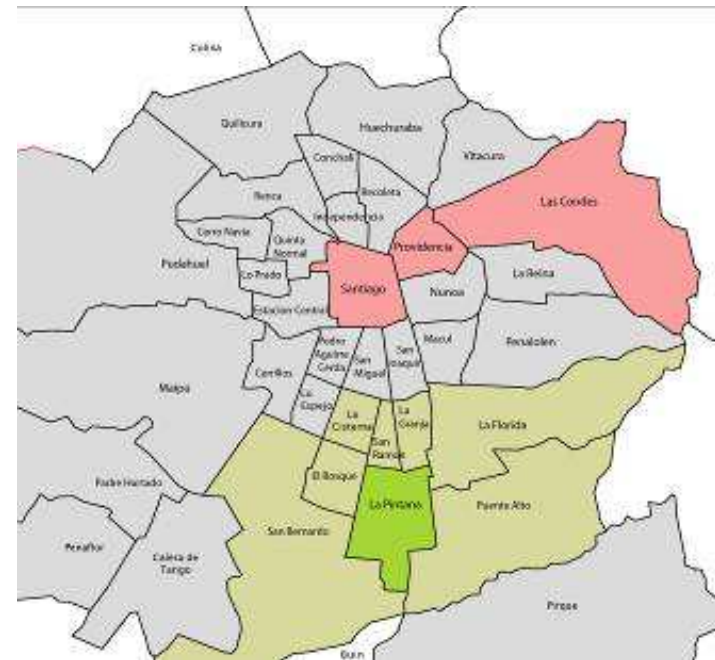
Trips substitution

Trips originated in La Pintana 301.801

- 55,5% Pedestrian
- 29% Public transport
- 8,1% Private transport
- 2,9% Bike**

Destinations

- 56% trips inside La Pintana
- 25,2% to the neighboring communes
- 18,3% to other communes



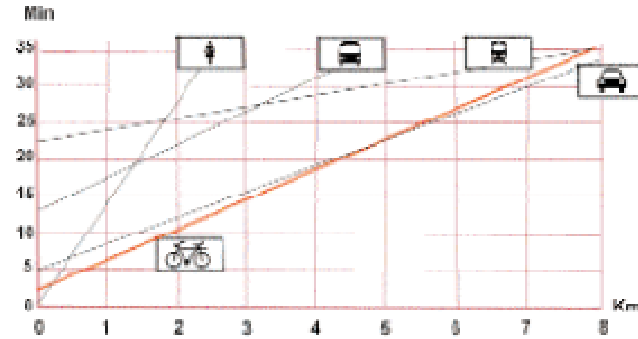
(ELAB. PROPIA)

4. Functional potentials

4.1 Trips data

Forecast trips in Santiago

Destinations per mode with origin in Pintana



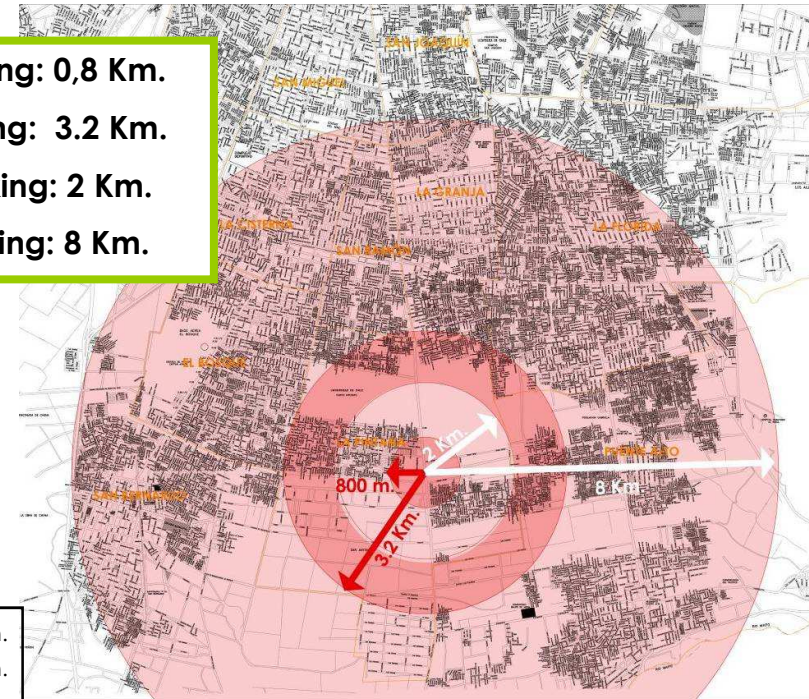
From door to door bicycle effectiveness with in 8 km.

Trips substitution

Trips substitution 24,61%

24.6 % of the trips originated in la pintana can be made by bike

- 10 min. walking: 0,8 Km.
- 10 min. cycling: 3.2 Km.
- 25 min. walking: 2 Km.
- 25 min. cycling: 8 Km.



4. Functional potentials

4.2 The city of the short ways

¿What is it?

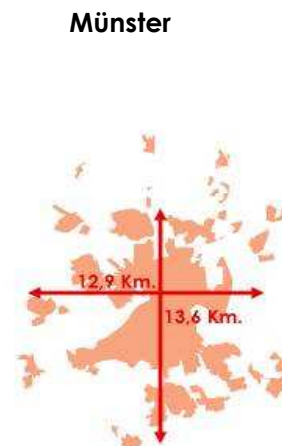
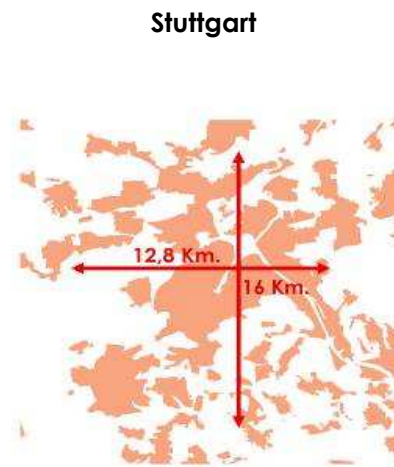
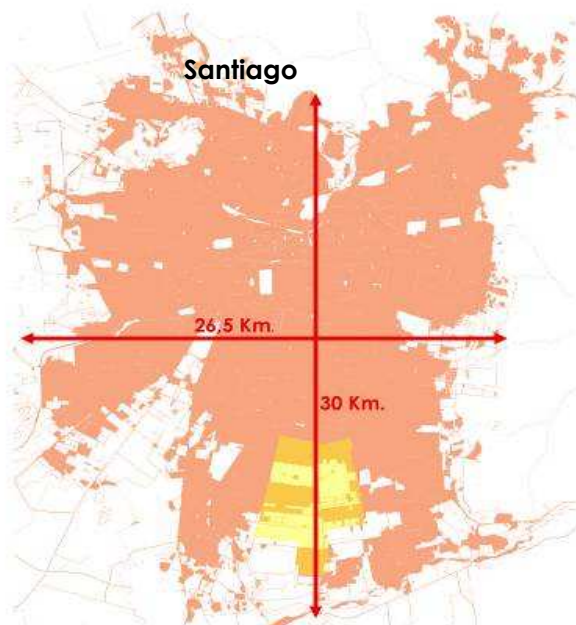
Determined for its land utilization:

The more diverse and dense their land utilization is

The shorter are the distances to travel



(DAGERS)



4. Functional potentials

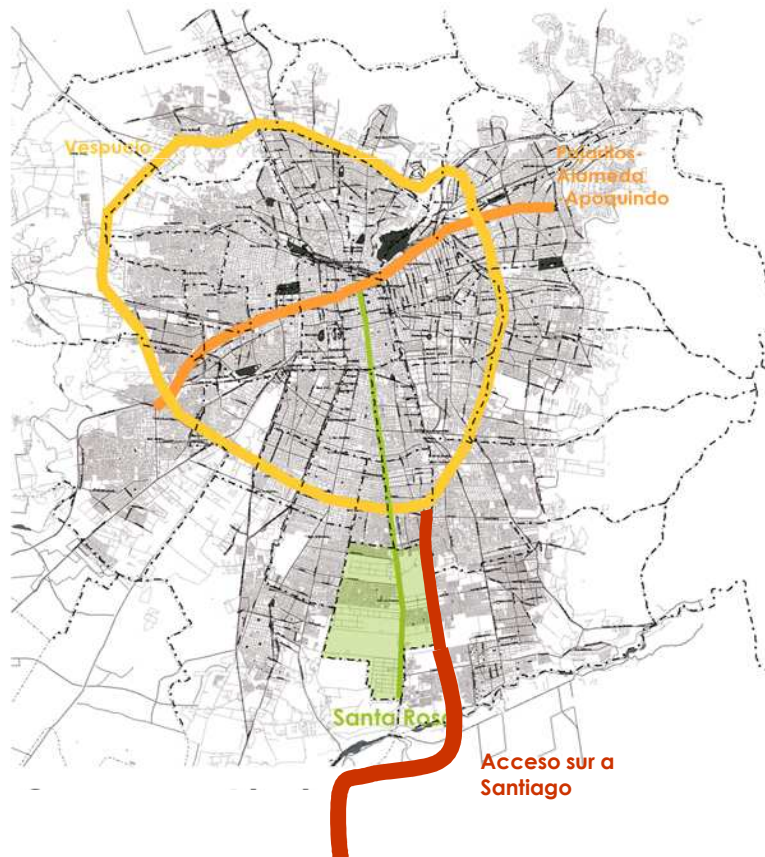
4.2 The city of the short ways

Is La Pintana a “city of the short ways”?

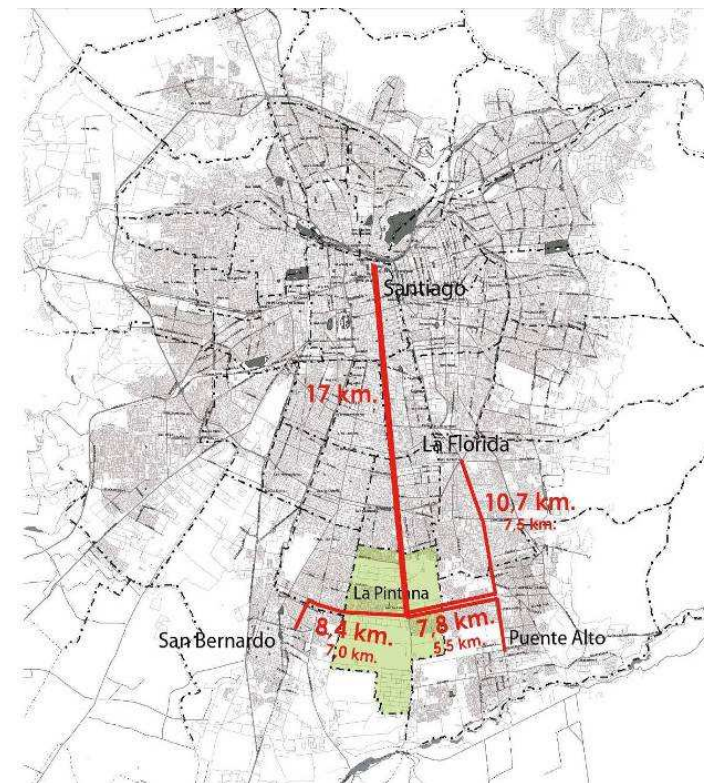
La Pintana in Santiago

- Distant from services and amenities
- Poverty concentration

Main streets Santiago



Distances to the different centers



4. Functional potentials

4.2 The city of the short ways

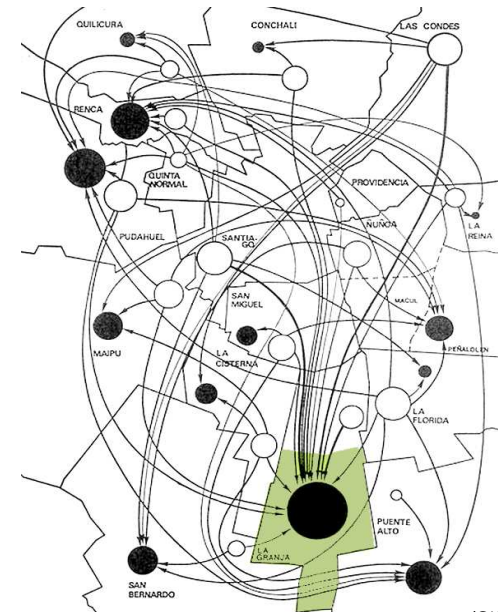
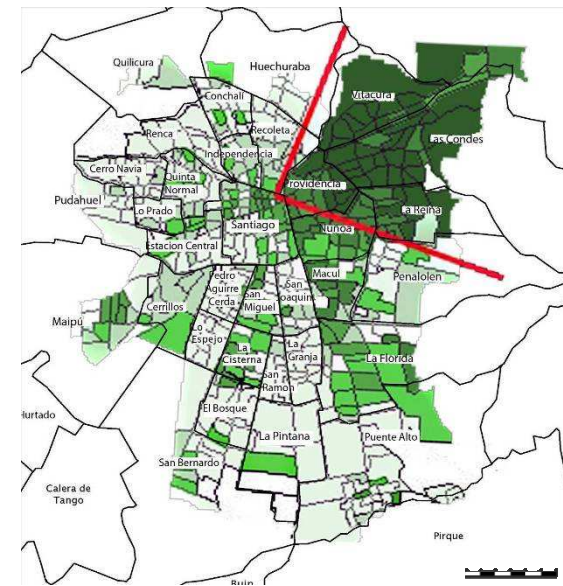
Is La Pintana a “city of the short ways”?

La Pintana in Santiago

Distant from services and amenities

Poverty concentration

High income zone



(GUROVICH)

4. Functional potentials

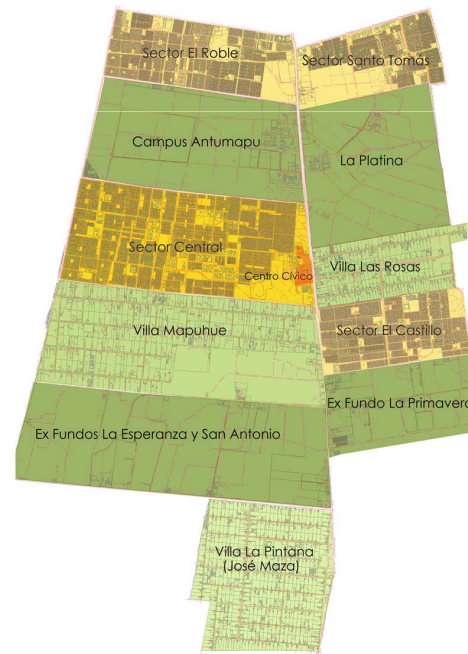
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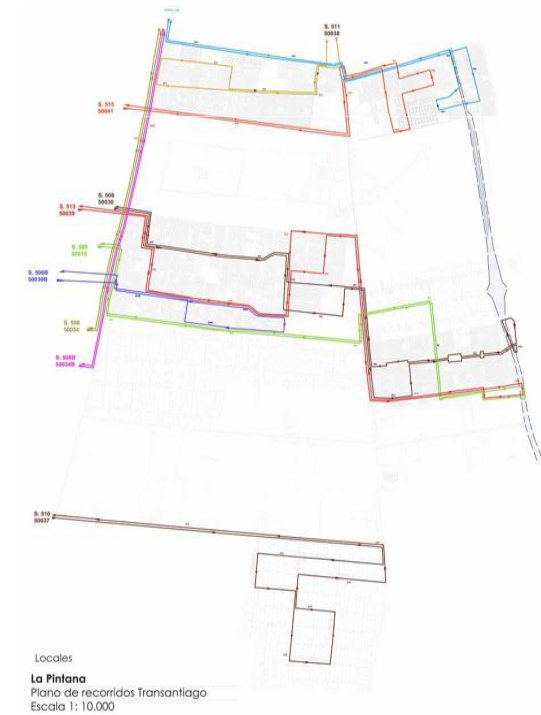
La Pintana's structure

- Fragmentary urban structure: difficult the internal mobility
- Monofunctional: only residential, no services, small center

Different areas



Transantiago routes



4. Functional potentials

4.2 The city of the short ways

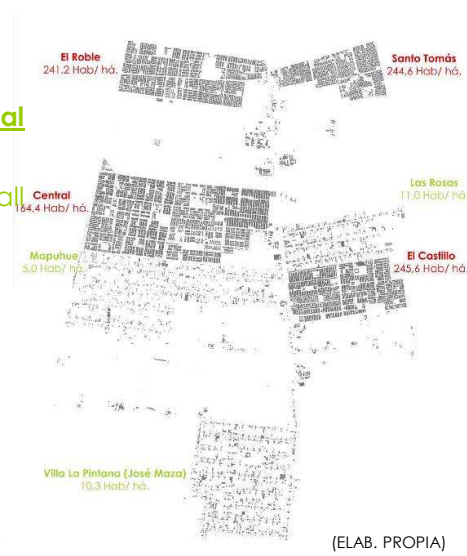
Is La Pintana a “city of the short ways”?

Fragmentary urban structure: difficult the internal mobility

Monofunctional: only residential, no services, small center



High density zones



(ELAB. PROPIA)

Services concentration



(ELAB. PROPIA)

La Pintana is a peripheral commune in a “city of the long ways”

4. Functional potentials

4.3 Bike – Bus commute

Ride-and-Bike and Bike-and-Ride

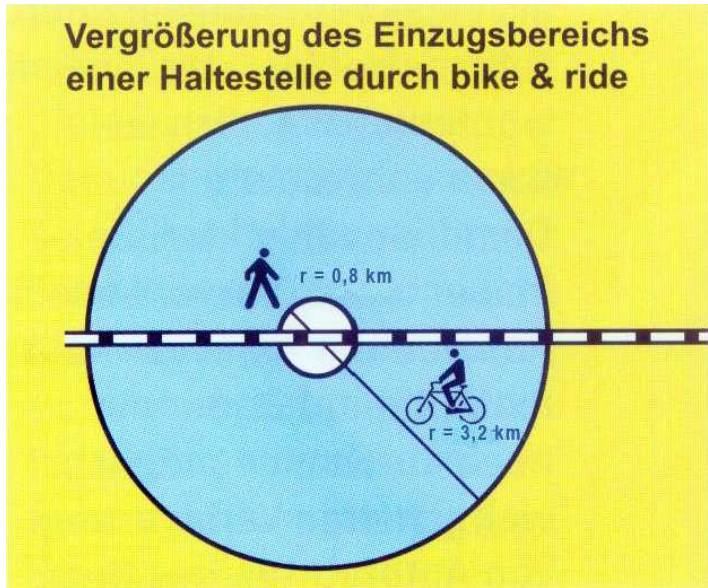
How to implement it in La Pintana?

Distances to the underground

Main bus network

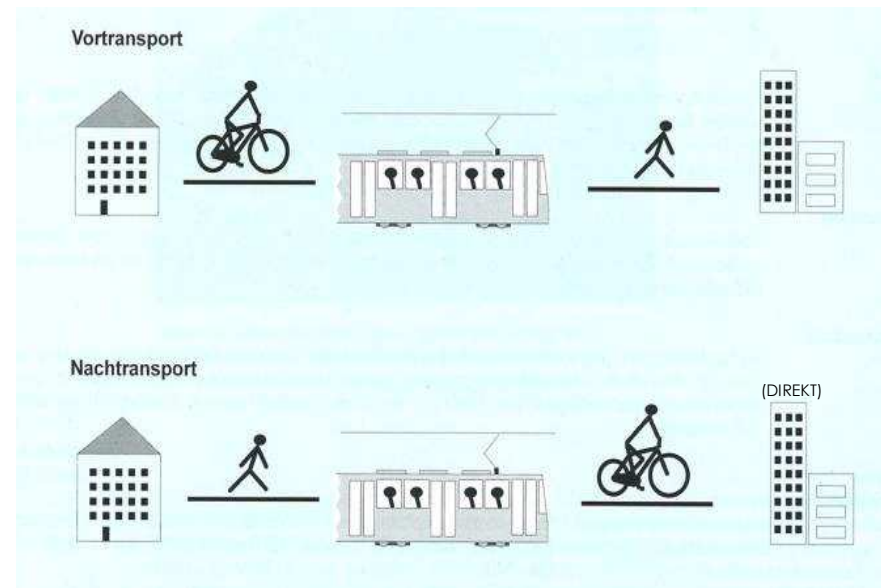
La Pintana is a peripheral commune in a "city of the long ways"

Access to mobility is a way to reduce the distances. An effective use of the means of transportation through **intermodal changes: Improves the mobility**



(Eahradfreundliche Städte NRW)

Enlargement of the public transport's sphere of influence



Trip times

Modo de desplazamiento	Velocidad media	Distancia recorrida en 10 minutos
	5 km/h	0,8 km
	20 km/h	3,2 km

(DEKOSTER, SCHOLLAERT)

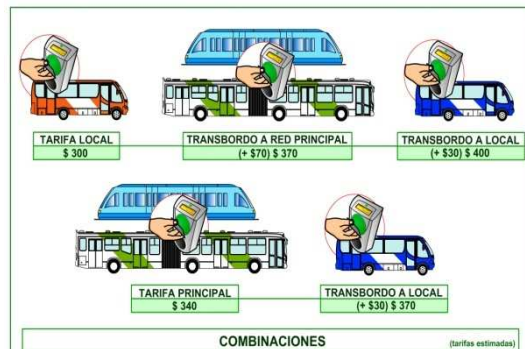
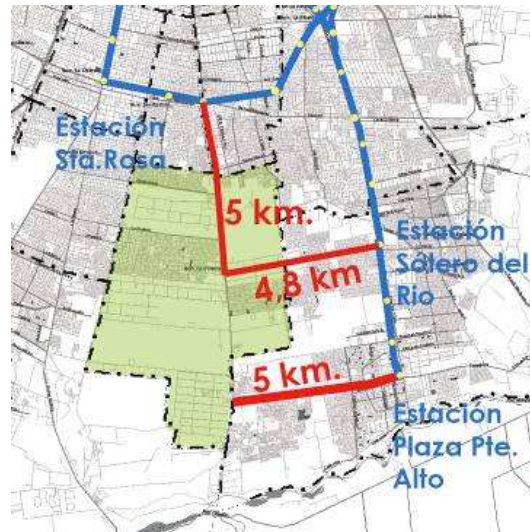
4. Functional potentials

4.3 Bike – Bus commute

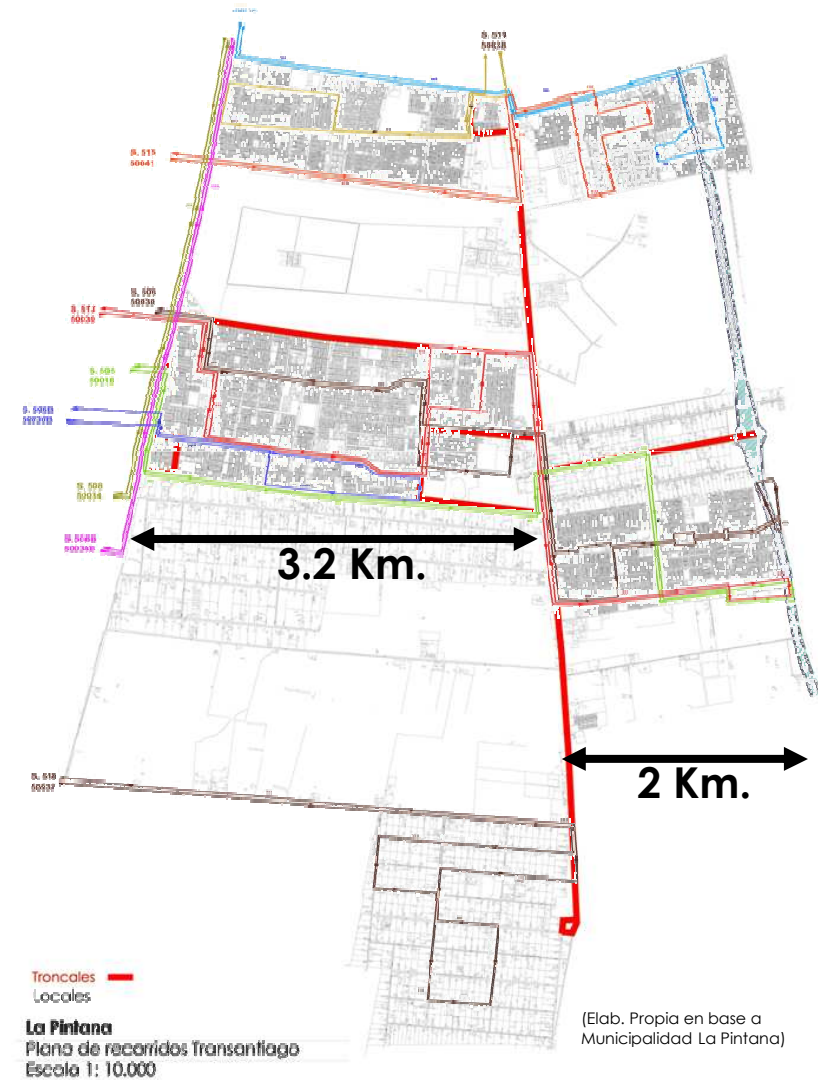
Ride-and-Bike y Bike-and-Ride

How to implement it in La Pintana?

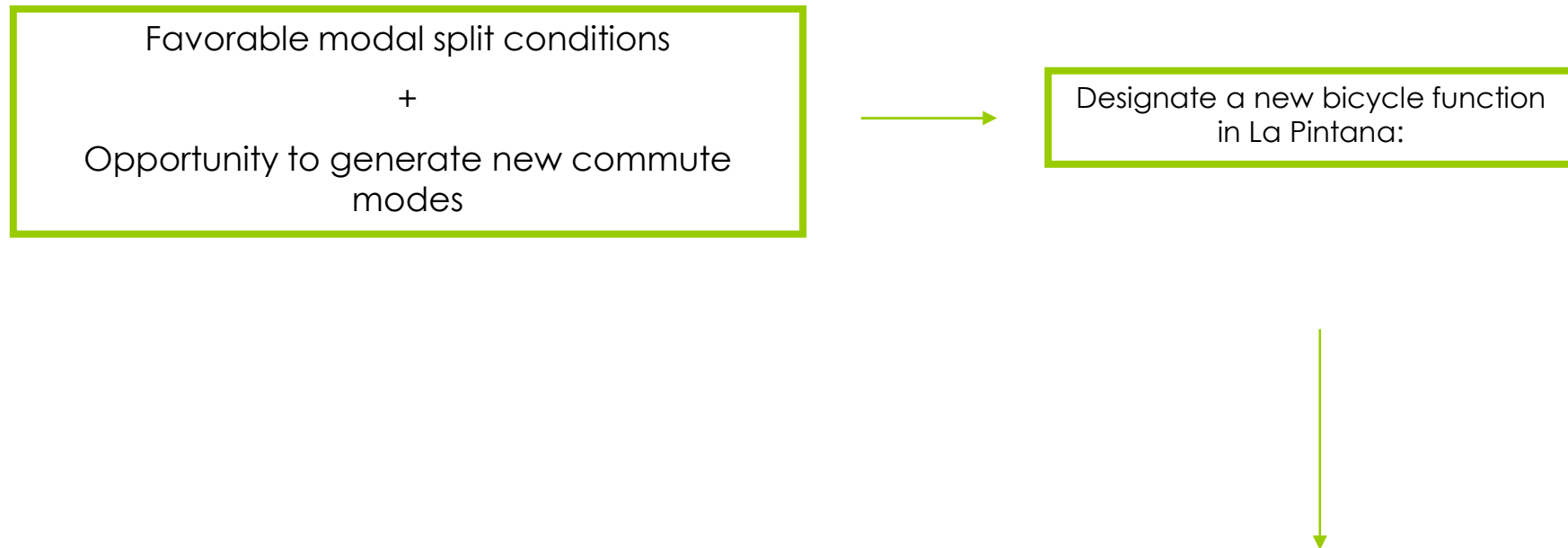
Distances to the underground
Main bus network



(ELAB. PROPIA)



4. Functional potentials



Local Connections and intermodal commuting

5. Spatial potentials

5.1 Contact urban –non urban areas: a factor of identity

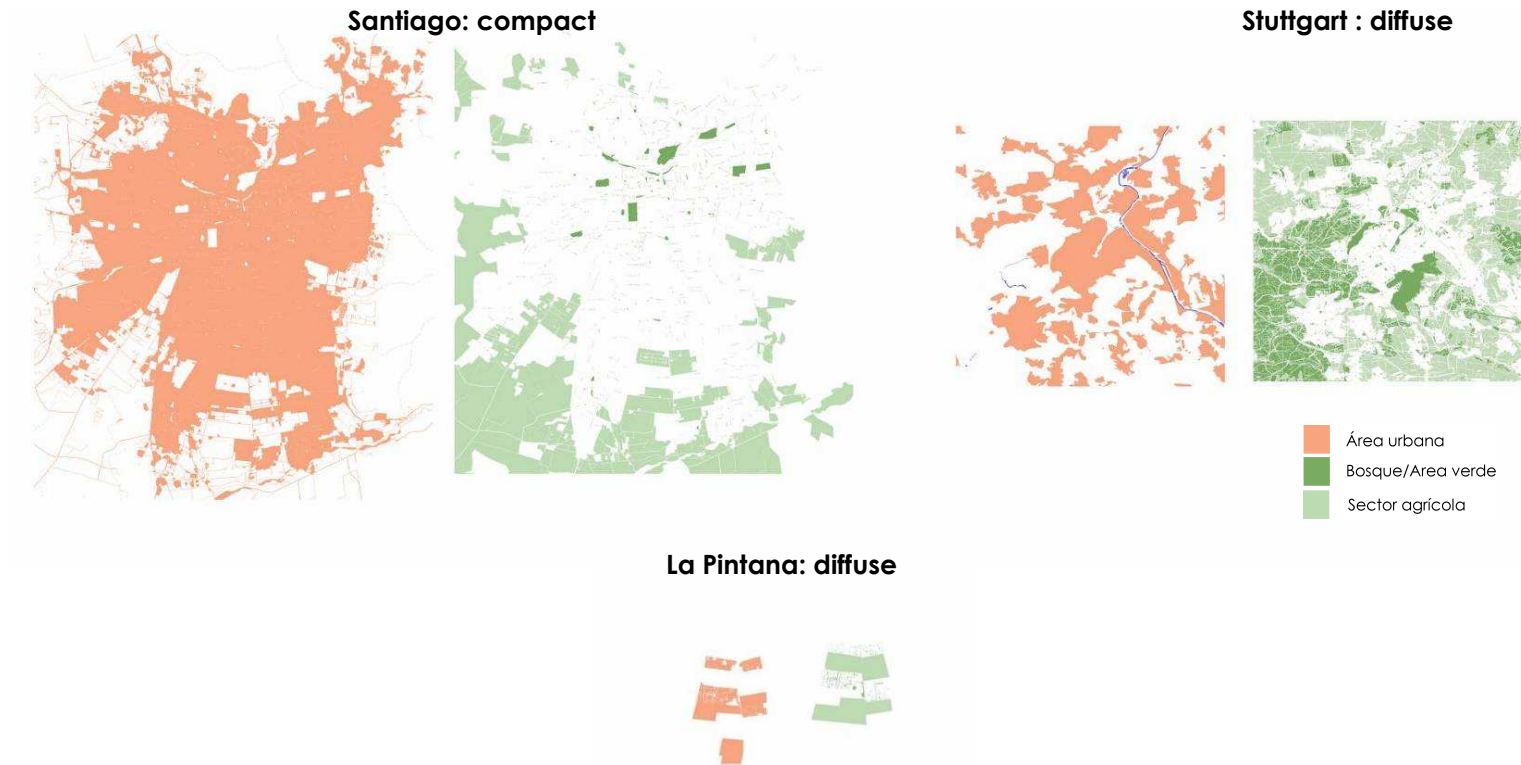
Diffuse structure

Urban –non urban landscapes diversity in Stuttgart

Urban –non urban landscapes diversity in La Pintana

The value of urban and non urban areas comes from their own contrast

The landscapes diversity is a factor of identity and life quality”



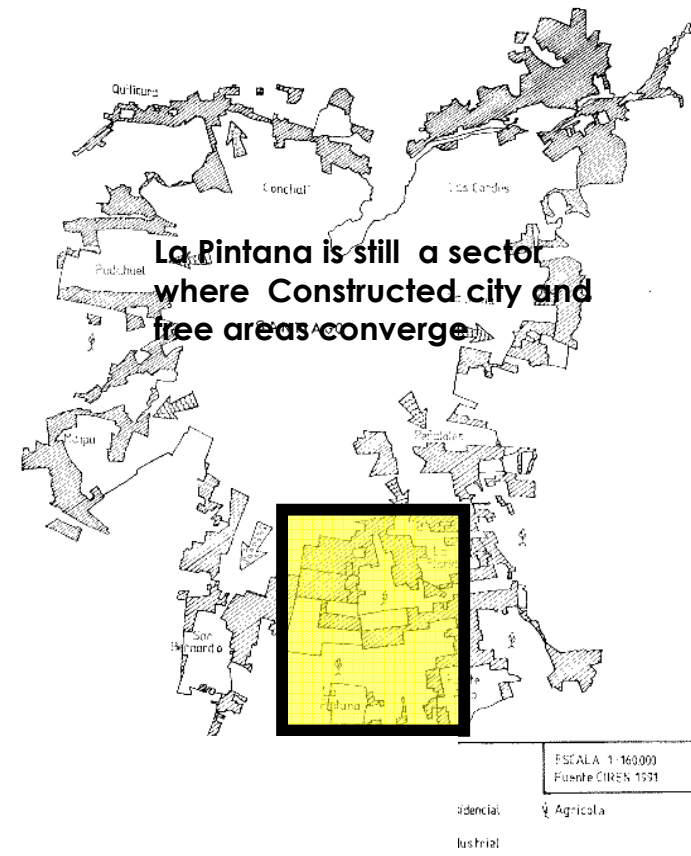
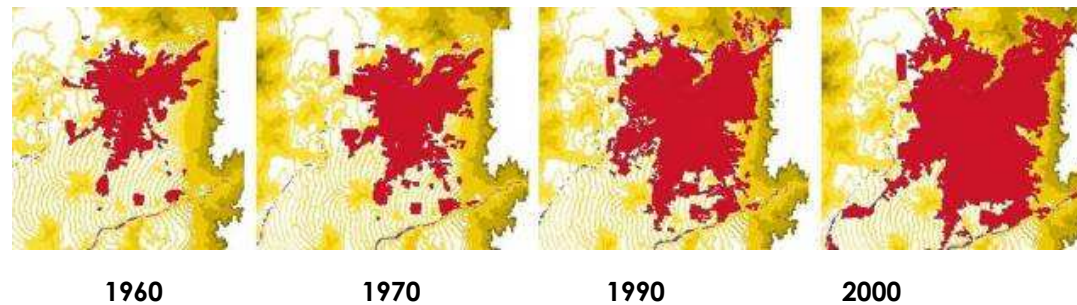
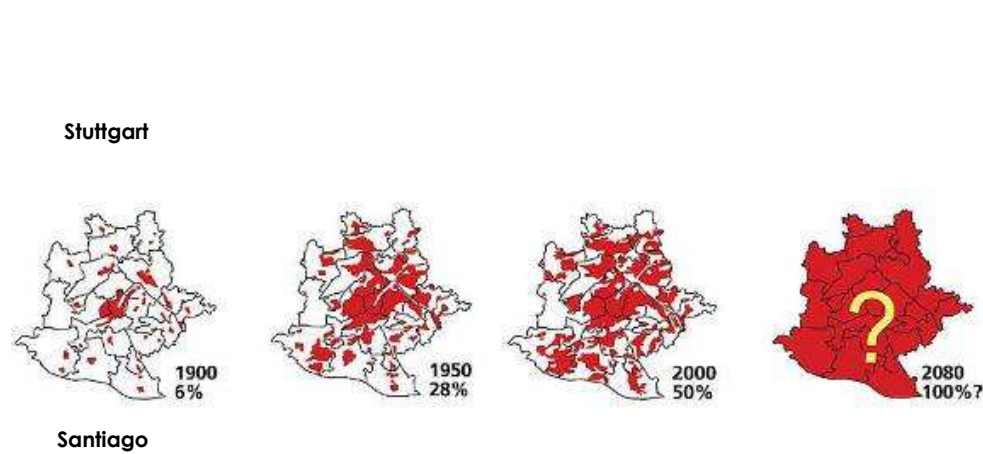
5. Spatial potentials

5.1 Contact urban –non urban areas: a factor of identity

Diffuse structure

Urban –non urban landscapes diversity in Stuttgart and in La Pintana

The value of urban and non urban areas comes from their own contrast



Santiago's growth from 1971 to 1991

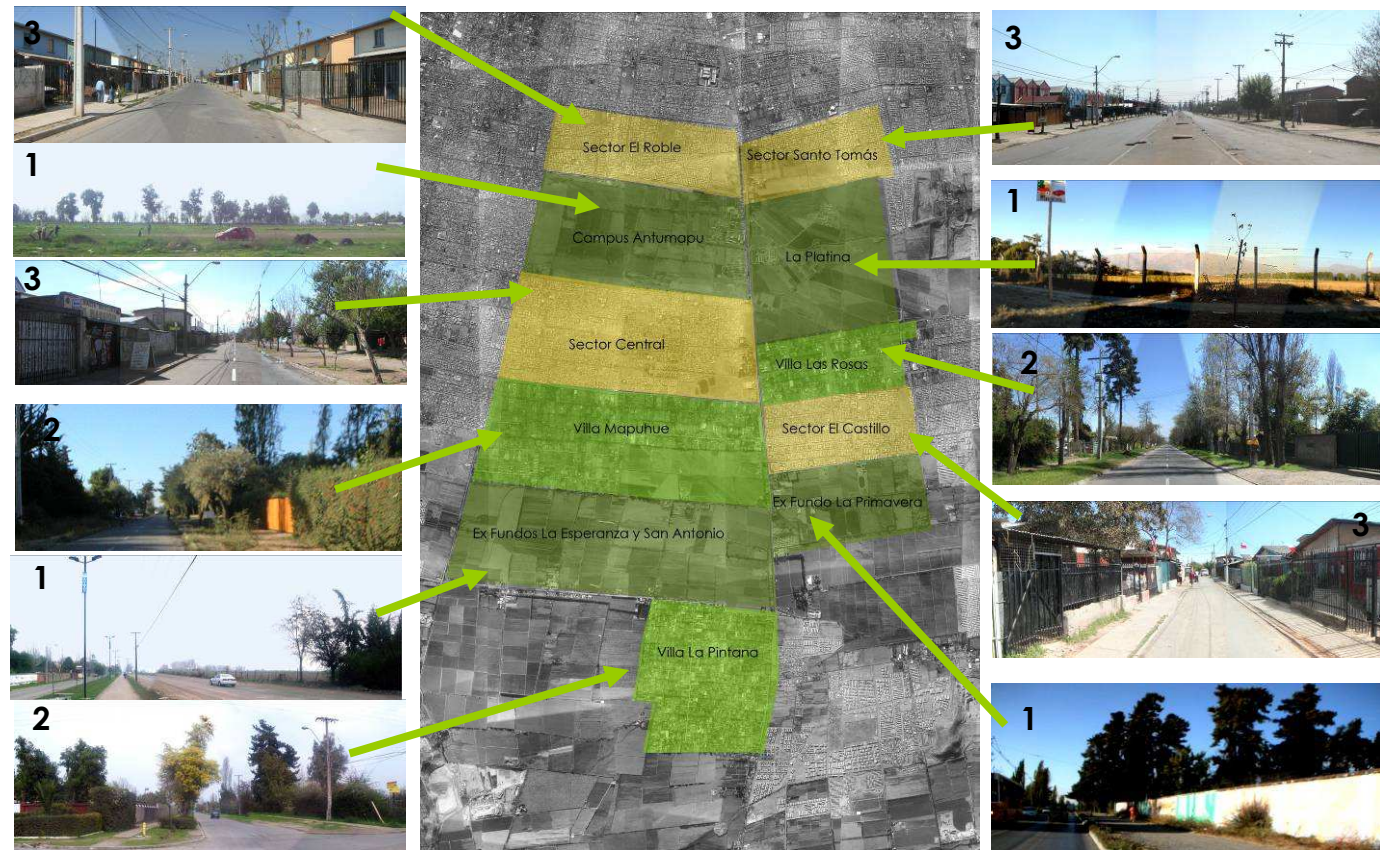
5. Spatial potentials

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(ELAB. PROPIA)

5. Spatial potentials

5.1 Contact urban –non urban areas: a factor of identity

Diffuse structure

Urban –non urban landscapes diversity in Stuttgart

Urban –non urban landscapes diversity in La Pintana

The value of urban and nonurban areas comes from their own contrast

People can profit from both at the same time

Wander through them to understand them



5. Spatial potentials

5.2 Contact constructed city - landscape: a factor of identity

The street section

The Stuttgart case

The Freiburg and Münster cases

La Pintana case

Narrow: bicycle adequate

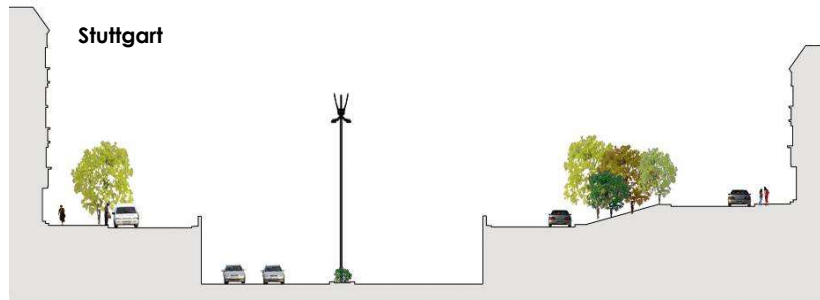
La Pintana



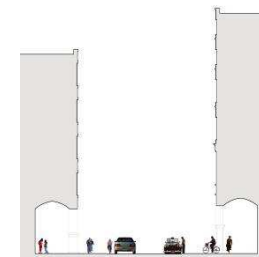
Pasaje El Corregidor



Wide: car adequate



Münster



Freiburg



5. Spatial potentials

5.2 Contact constructed city - landscape: a factor of identity

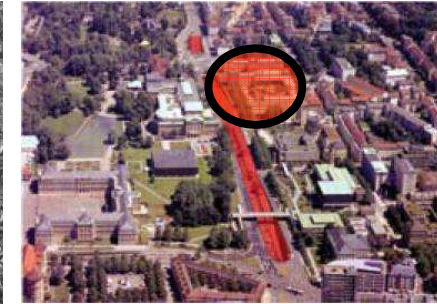
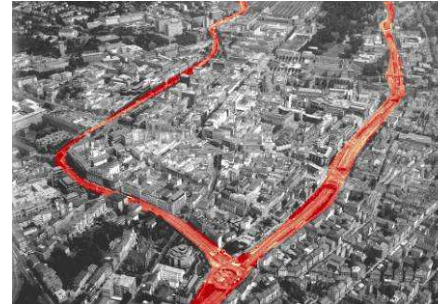
The street section

The Stuttgart case

The Freiburg and Münster cases

La Pintana case

Autopistas en Stuttgart



Freiburg



Motorization rate incremented 420 % (1991-2001)



Münster



La Pintana



5. Spatial potentials

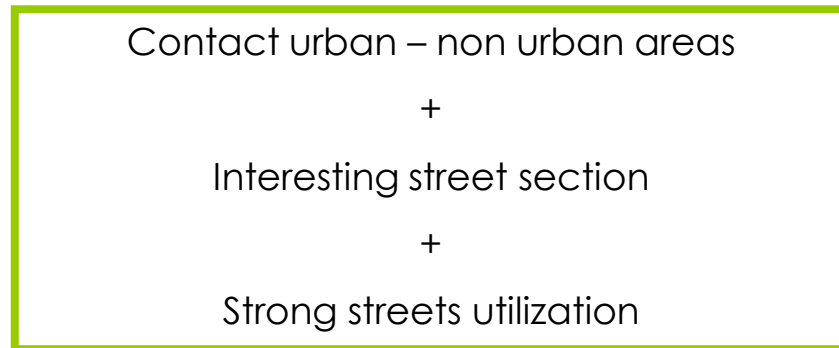
5.3 Strong streets utilization

Very small houses

Strong development of the daily life on the alleyways



5. Spatial potentials



Continuous and coherent public spaces

6. La Pintana conclusions

Problems

- Mobility problems
- Isolated from important services
- Diffuse urban structure
- Monofunctional character

Potentials

- Favorable modal split conditions
- Opportunity to achieve integrate transport policies
- Interesting contact urban – non urban areas
- Bicycle adequate street section
- Strong streets utilization

6. La Pintana conclusions

What is the role of the bicycle in the new Santiago's transport chain?
How can a bicycle path network help to ameliorate the urban context?

**Bicycle
paths
network**



**Local
Connections
Intermodal
commuting**



- **Generate continuous and coherent public spaces**
- **Dignify public spaces for their use**

7. General Conclusions

How is the political and social situation for the bicycle use in Santiago?

Good intentions



Are still not reflected on the new Infrastructure



- It is a good opportunity to implementation and to discuss about integrated transport policies
- Need of a technical unit
- Need of bicycle use promotion (NGO's subvention)

What is the role of the bicycle in the new Santiago's transport chain?
How can a bicycle path network help to ameliorate the urban context?

Bicycle paths network



**Local Connections
Intermodal commuting**



- Generate continuous and coherent public spaces
- Dignify public spaces for their use

The End

