

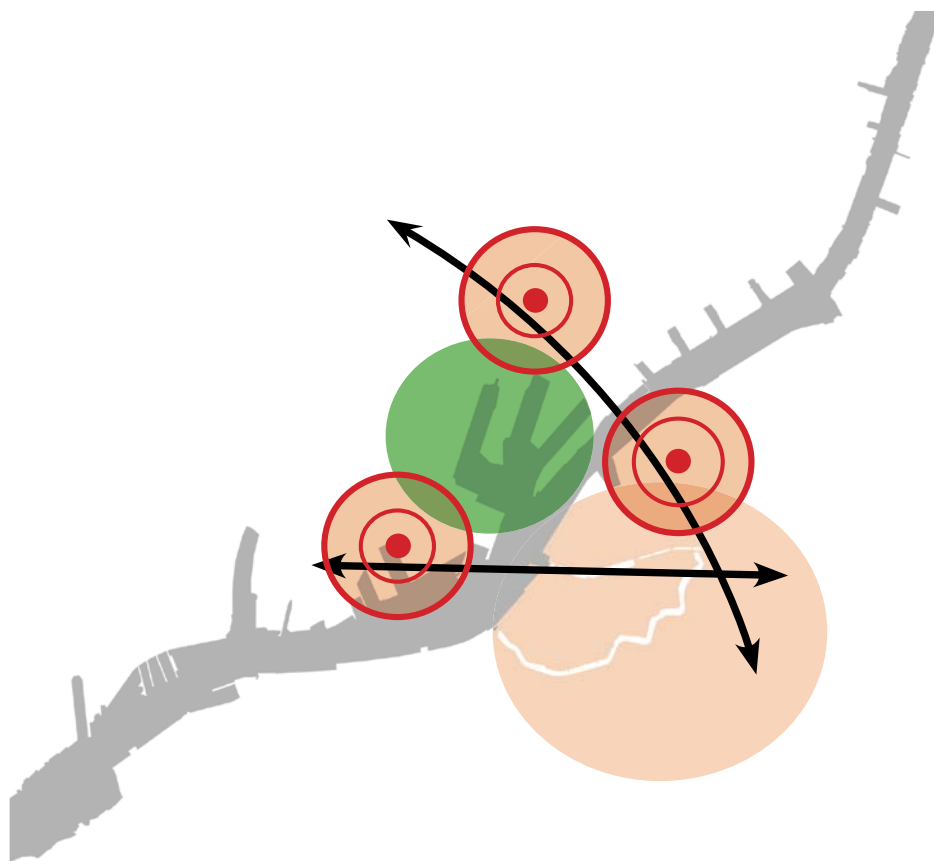
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RiverCity Gothenburg
(Centrala Älvstaden) is
neither the author nor the
editor of this report.

RiverCity **Gothenburg**

'**leap across the river**'

Team Güller Güller



International Workshop
Gothenburg, 7 - 11 June 2011

colophon



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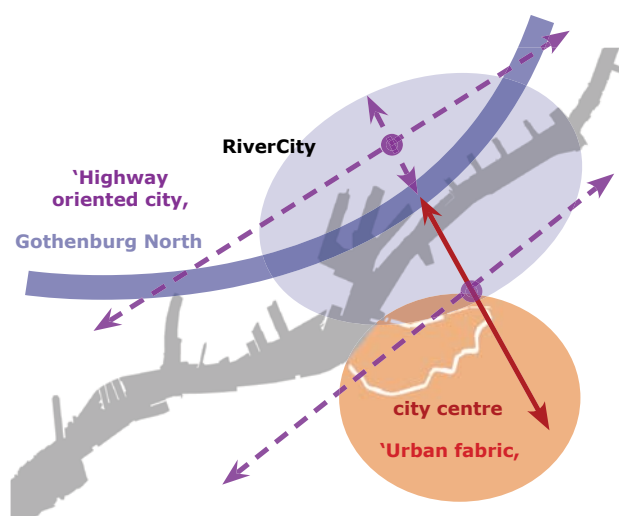
The River disconnected

Gothenburg takes an enormous challenge with RiverCity.

RiverCity lies in the heart of the Region of Gothenburg on the northern riverbank opposite the city center, and is surrounded by large housing estates, old industrial areas and new commercial cores. As well as it is connected with interstate highways with the Region and the metropolitan areas of Stockholm, Copenhagen and Oslo, as much it is still dissociated from its urban surroundings. The highway infrastructure forms strong barriers and a network of urban infrastructure which links it with its neighboring areas and the subregion is lacking. **Connecting RiverCity** is therefore its first challenge.

RiverCity has a huge potential for urban development due to its strategic position inside the agglomeration, its sheer size and its key-asset, the riverfront. It has been designated in Gothenburg's Comprehensive plan as part of its regional core. However the key-question is how to achieve a quantum-leap in quality inside RiverCity in order to jump-start a more intense urban use of the area. From a harbor past it is to evolve into an attractive and dynamic urban area. This won't be possible without structural improvements in the preconditions for its development. **Upgrading the quality of RiverCity** is essential for that purpose, its second challenge.

RiverCity has finally to be seen in the context of urban sprawl and segregation that challenge the growth of Gothenburg. RiverCity is an opportunity to transform the urban system which is based on a singular center on the South bank into a polycentric one, creating therefore new poles of urban activity closer to the different parts of the agglomeration. The concept of such a polycentric city of Gothenburg is not only driven by the needs of a modern city, but also by the specific geographic setting of this city with its petal-like structure arranged around the river Göta and the adjacent hills. **Multiplying the centralities of Gothenburg** is the third challenge for RiverCity.



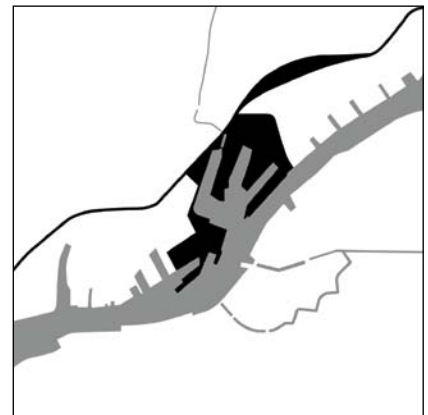
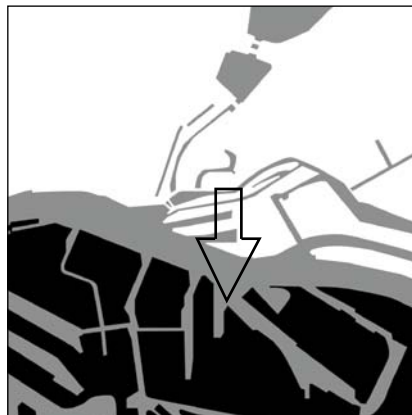
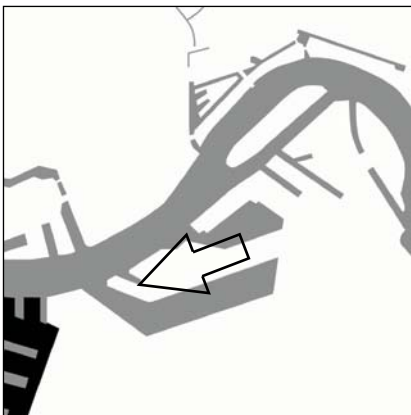
Portcity

Redefine the relation between city and harbor

Gothenburg will always remain a port city. But it is now in a phase where it is about to redefine its relation with the port. This relation can be different than the one in Rotterdam, where the port was pushed out completely of the city. Or that in Hamburg, where city and harbor are divided by the Elbe: the southern bank remains harbor, the northern riverbank is to become city by rolling out a new urban carpet over the old harbor area.

In Gothenburg the harbor will remain present in the city. Some of the main road and rail arteries running to and from the harbor will be physically present in the town for a long time, as the infrastructure due to topographical reasons will not be easily removed. And some harbor fragments are there to stay. Contrary to other cities, it is not looking for merely pushing out the harbor. The city cares about its image as a portcity, but also about the port activity. This requires addressing issues of infrastructural barriers and of functional diversity in order to manage the coexistence of harbor and city.

Therefore, redefining the coexistence between harbor and city is a key issue of RiverCity.



Rotterdam



Hamburg



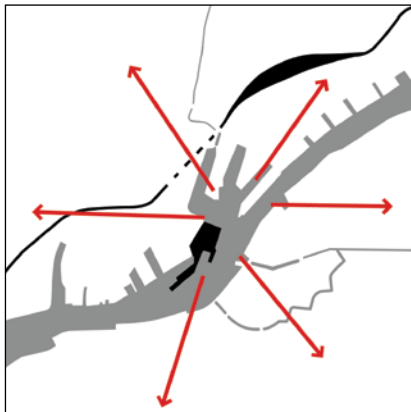
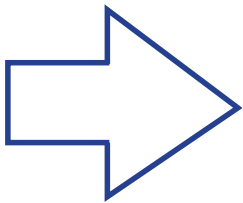
Gothenburg

RiverCity

Open up the city from the river

At the same time RiverCity means, and that is inherent in the name of the project, that you open up the city from the river.

This implies that one redefines the way the city connects to the river and its riverbanks, which were occupied by the harbor before. And that one redefines the connections between the river and its metropolitan hinterland. This is a very powerful strategy as compared to the one of the two other examples, Rotterdam and Hamburg.



Modern port installations (clean industry) do not need specifically isolated designations anymore. They can very much be part of the robust city urban plan. The multimodal transport infrastructure in Gothenburg (car, rail, water) can if well designed absorb quite a bit of the conflict. Port activity and derivative trades and industry can keep enriching substantially the employment base now and in the long term, something that every economy aspires towards. The key challenge will be to use the presence of the harbor creatively as generator of a unique international character.



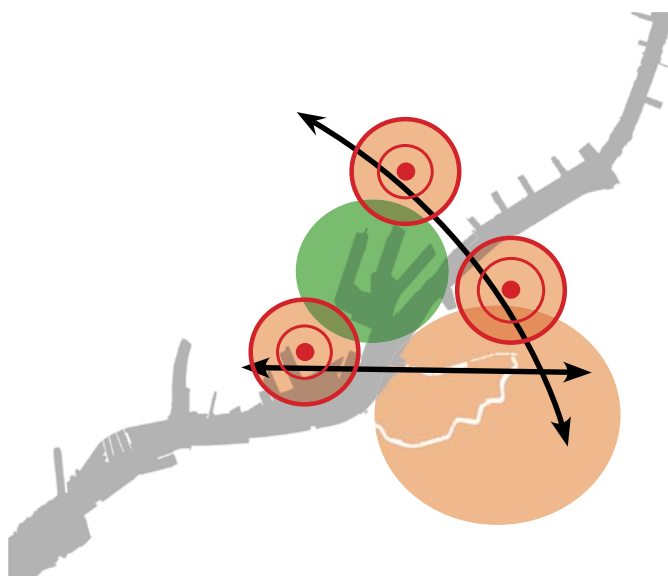
Gothenburg 2050 ?

The River **is for everyone**

Opening up the city from the river also means that you open up the river for the citizens of Gothenburg. It implies that the river is for everyone, not only for some specific target groups, selective economic activities or some luxurious, monofunctional housing development. It is about a diversity of environments and economies alongside the river.

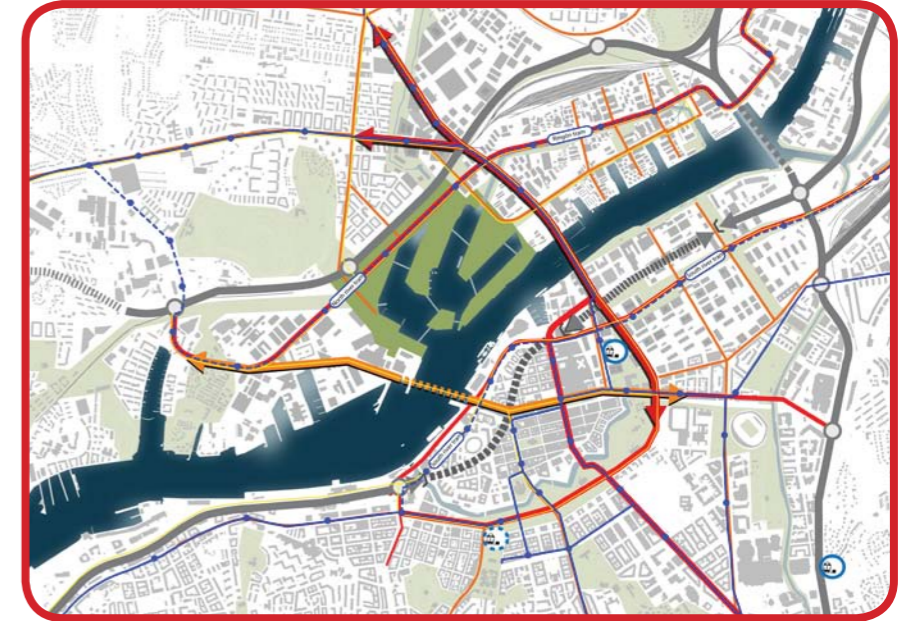
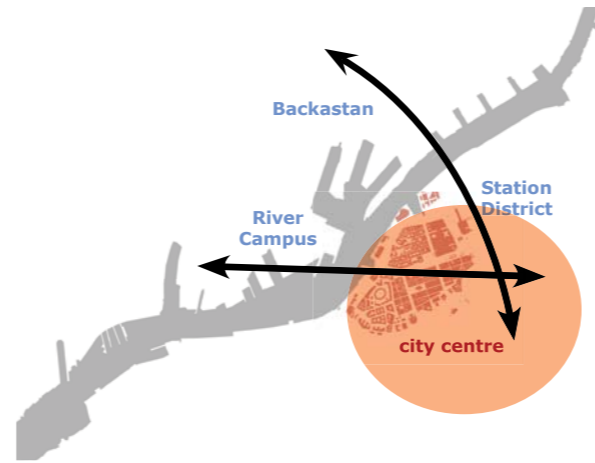
“Opening up the river” means making it **accessible, livable and dense** in some parts, making it inhabitable.

This strategic framework creates the conditions for the evolution, the transformation and the growth of RiverCity. These three strategic fields of action respond to the main ambition of the whole project as defined by the RiverCity Gothenburg management group: inclusive, green and dynamic.



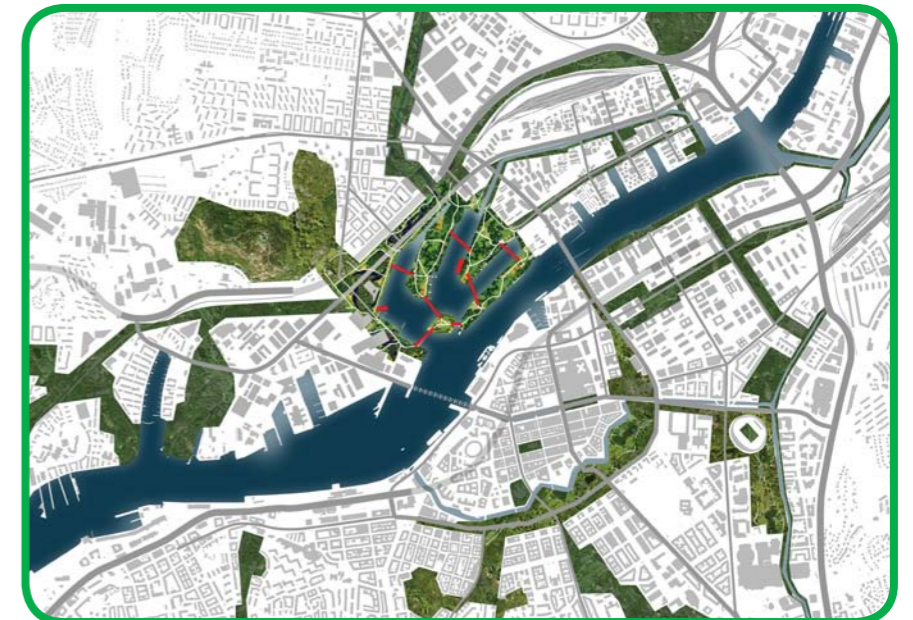
Accessible (inclusive)

Accessible means creating a new north-south link and a new east-west link (for slow traffic) to connect RiverCity and the North of Gothenburg to the river and the city centre. It also means transforming what today are transit-roads that cross RiverCity into urban streets. RiverCity looks today like a “little Los Angeles”, when it comes to the dominance of functional road infrastructure. Make it a walkable city.



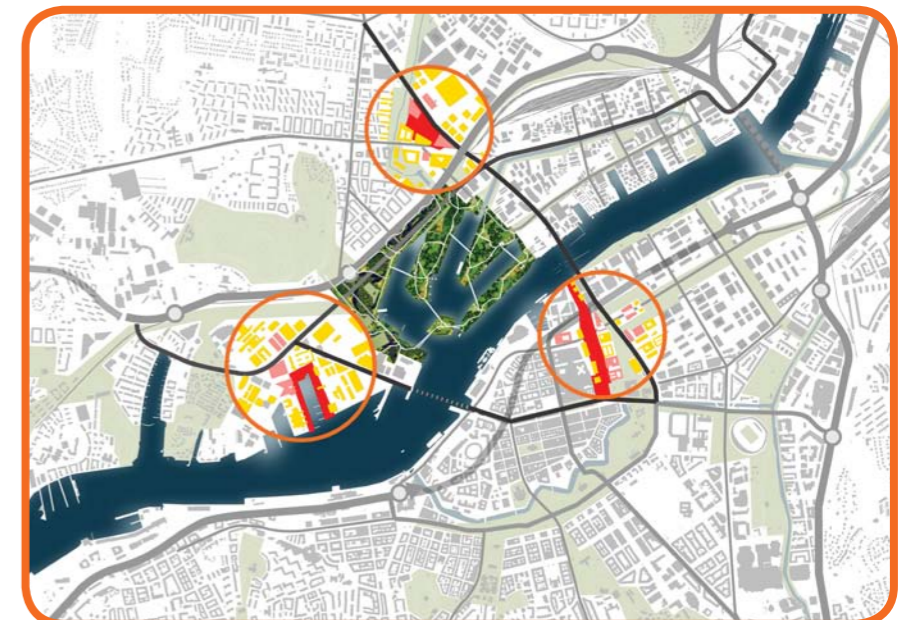
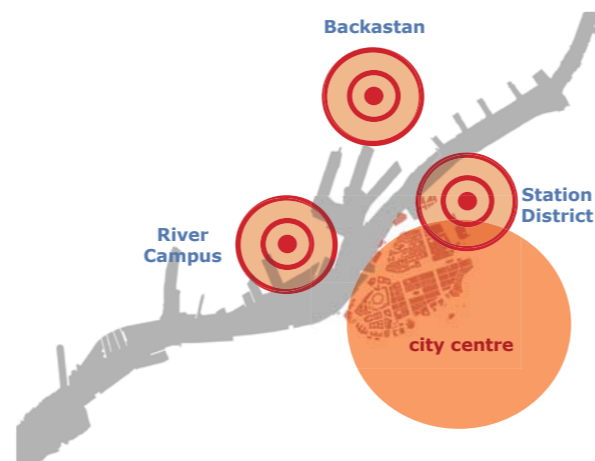
Livable (green)

Livable means creating a public park on the river. Allow the river to become an attractive public space - a park - to be used by all of Gothenburg's inhabitants. Relink this park with the city's valleys to create a green network that reunites Gothenburg's topography back with its river.



Dense (dynamic)

Dense means creating multiple urban cores where is possible to appreciate a certain intensity and quality of urban life. Concentrate therefore density of use and public activity on three new centres - Backastan, River Campus Lindholmen, Station district - rather than spreading a homogenous carpet of urban development all over the vast area of RiverCity.

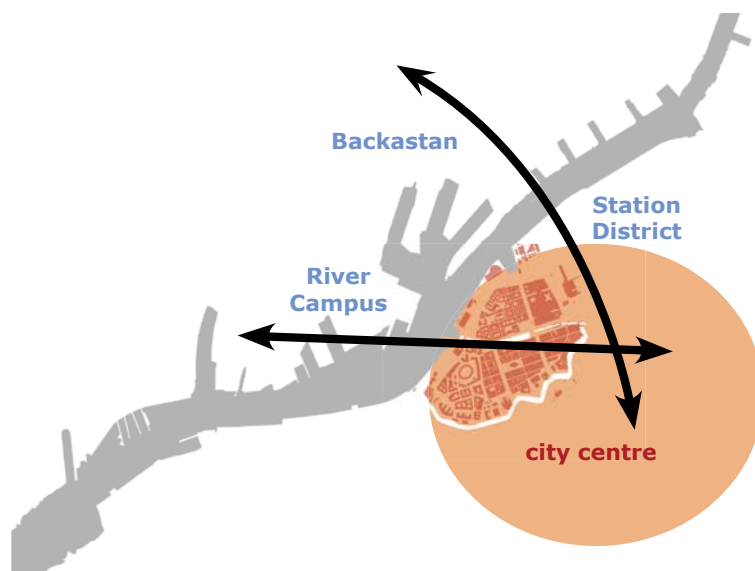


RiverCity **accessible**

The first step to achieve this is to make RiverCity accessible.

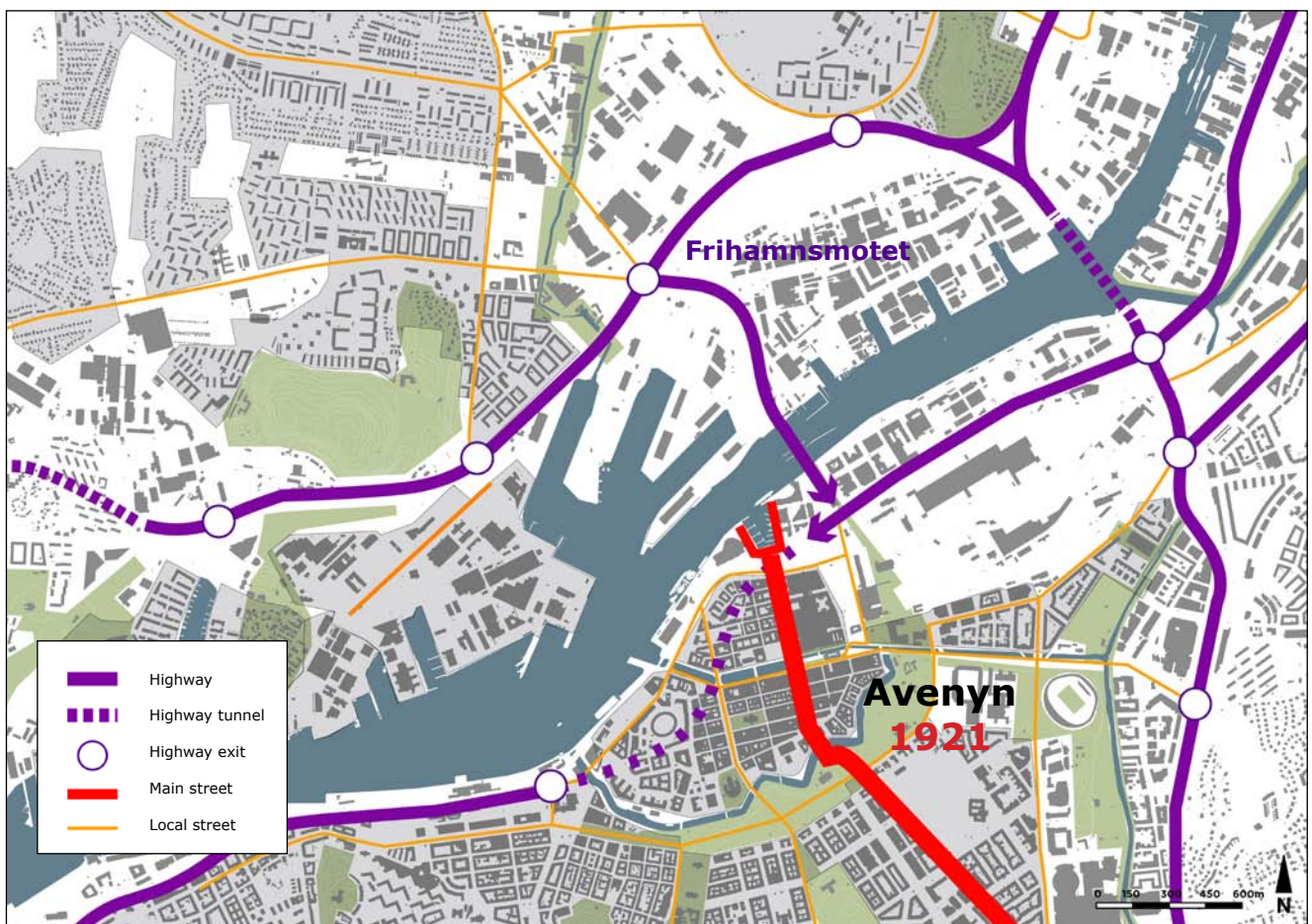
Hereby one of the main questions is how to deal with the existing highway and harbor infrastructure, which forms major barriers and with its many exits consumes huge amount of land. Today, RiverCity looks like the 'little Los Angeles' of Scandinavia. RiverCity is fragmented and disconnected from its urban surroundings and topography.

The challenge is to reconnect RiverCity and redefine the way that the North of Gothenburg connects to the river. This demands that roads, which cross and cut-up the area, become urban streets. It also demands that a simple and structural internal network is established which opens up RiverCity, makes it accessible and livable and reclaims strategic land for development from the heavy road infrastructure.



A new avenue north-south: Göta älvgatan

1921 Gothenburg celebrated its 300 years anniversary with the creation of the Avenyn boulevard which continued the Östra Hamngatan to the south of the city. Today there is the chance to think about the upcoming 400th anniversary: it's a chance to mirror the Avenyn as if it were to the northern side.



Avenyn, main boulevard
(Östra Hamngatan)



Brunnsparken,
centrality at Avenyn



Götaleden (south bank)

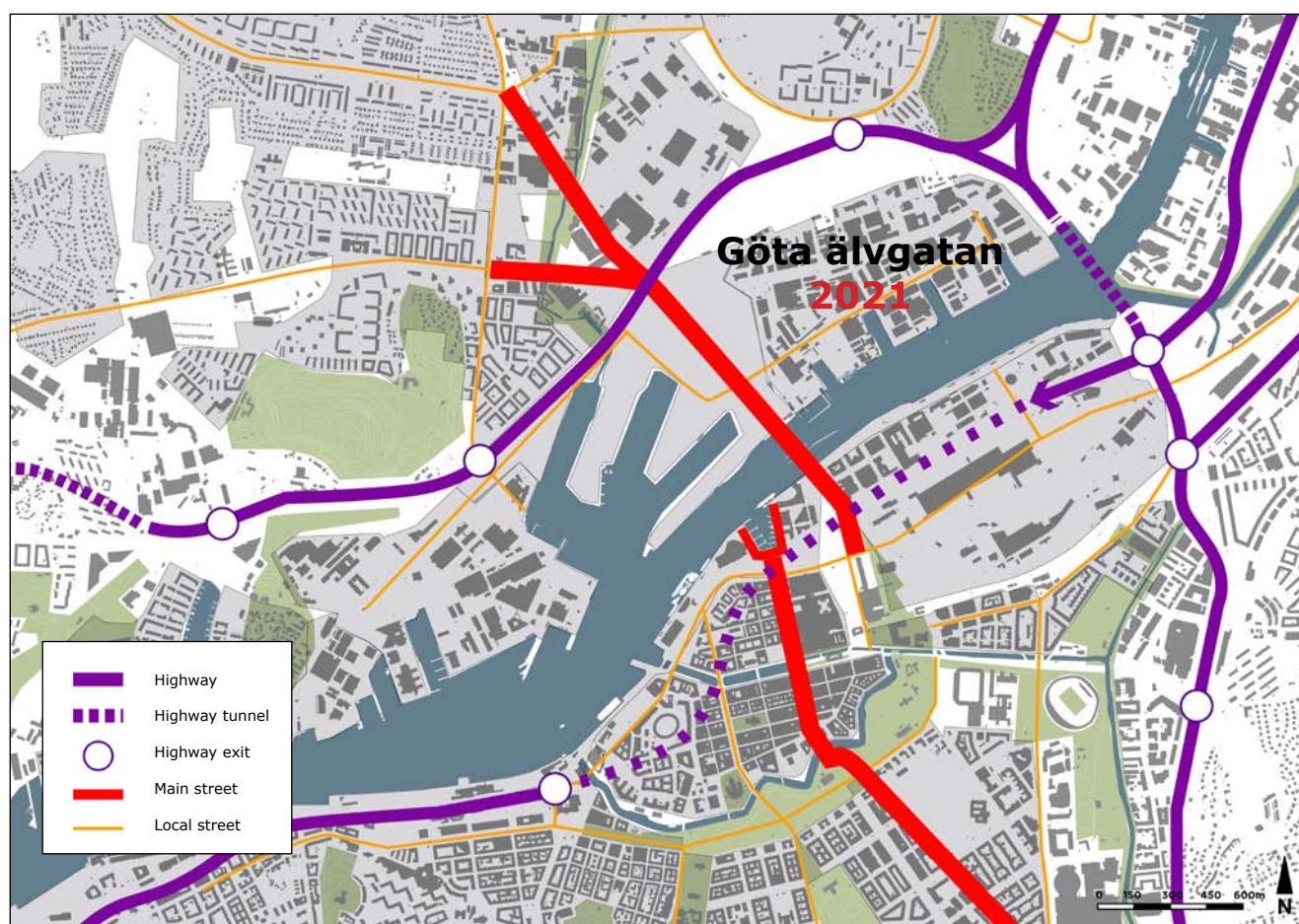


Lundbyleden (north bank)

The 400th anniversary is therefore not only about building the new bridge, the 'Göta älvbron'. Celebrating 400 years should be about building the 'Göta älvgratan'. It also means using the realization of the bridge to create a real urban artery, an urban boulevard which opens up the North and links the northern part of the city back to the river: a line of life and the possibility to access Central Station and the southern city center.

The highway-exit at Backaplan needs to be removed and place made for the new urban artery of the 'Göta älvgratan'. The highway infrastructure at Central station needs to be put under ground to disentangle the infrastructure in front of this central urban place and to open up the railway station to the river.

And the new Göta älvbron needs to be a walkable bridge, therefore the new bridge needs to be no more than 10-12 meters high, otherwise it won't be possible to cross the river in a comfortable way. Having a lower freeboard, it will allow one element to be openable for ship-traffic.



Göta älvbron
(freeboard 19,5m)



Millenium bridge London
(lower freeboard 10,8m)



Erasmusbridge, Rotterdam
(lower freeboard 12,5m)

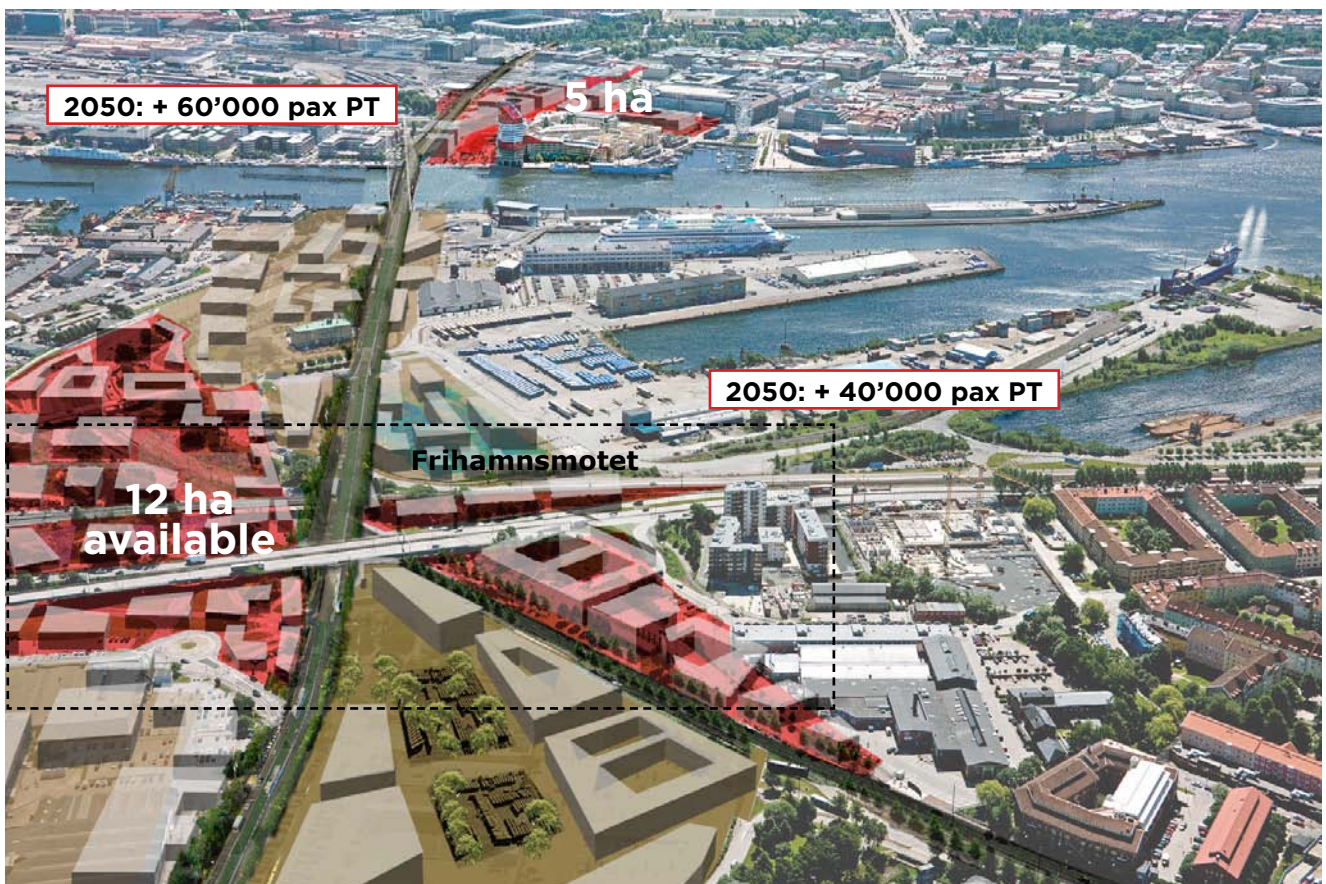


Erasmusbridge, Rotterdam
multimodal bridge

From 'Backaplan' to 'Backastan'

'Göta älvgatan' is an enormous opportunity to tackle some of Gothenburg's infrastructure problems. Large-scale highway junctions and city-motorways that reach right into the city centre dominate image and land-use of RiverCity and of the interfaces with the city and the river. RiverCity is today a non-place where you leave the highway to cross the river Göta with another highway to reach the city center.

The realization of the bridge is to be seen as a catalyst to regain urban quality between Brantingsplatsen and the river. By eliminating the highway-exit at this location we regain 12 hectares of land at this prime location, which in turn will allow the city to finance this new road urban infrastructure through regained land-value.



remove the current highway exits on both sides of the river

RiverCity **accessible**

Brantingsplatsen today is cut away from the river, as are Backaplan and the areas further north of Gothenburg. They could be reunited after the elimination of the highway node. This place is therefore one of the key locations in RiverCity where it is necessary to start to act. The transformation of this node will allow for Backaplan to become 'Backastan', a vital urban core within close reach of the riverfront and with the new bridge as a symbol of RiverCity at the background.



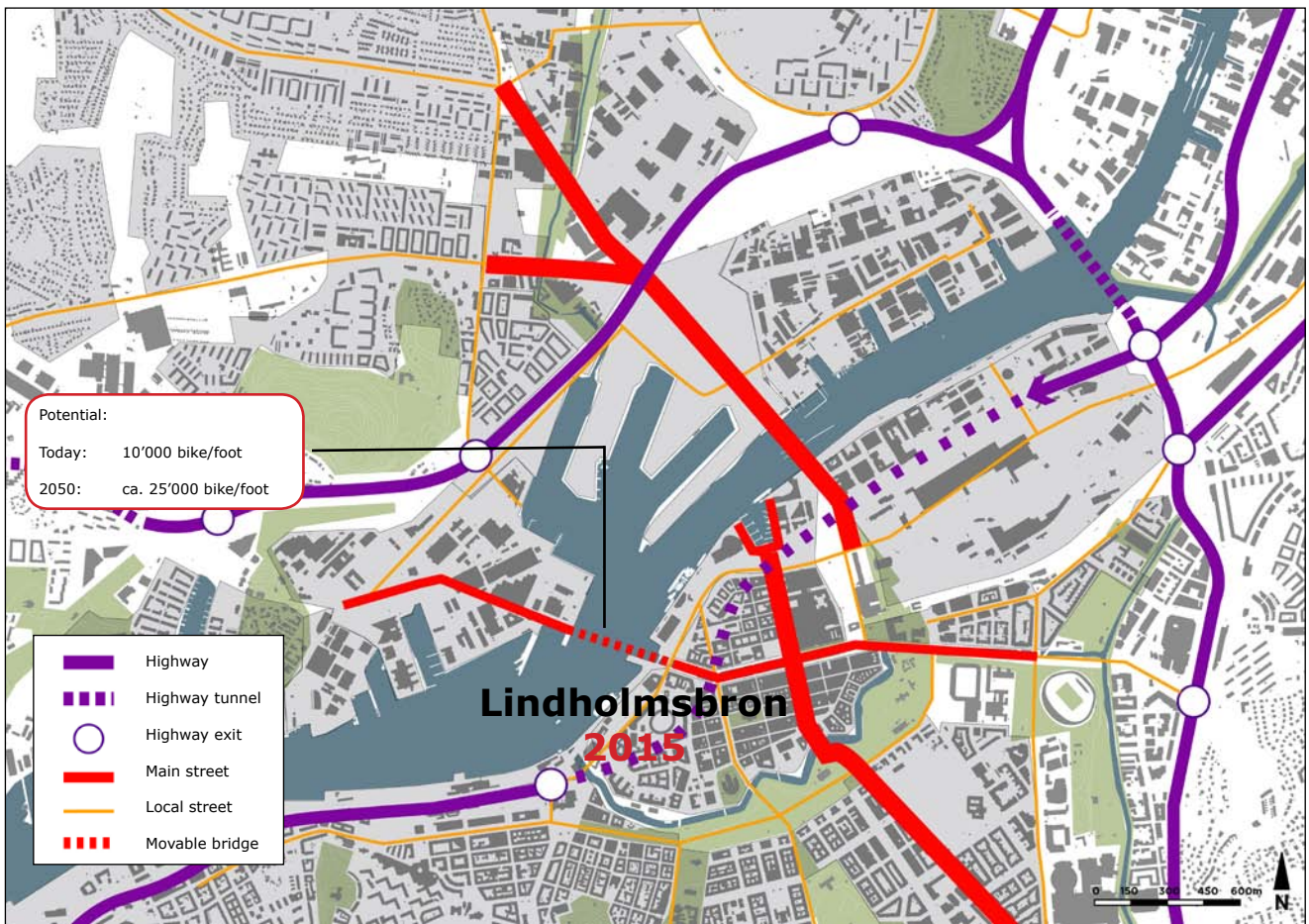
A new open space on the North - Brantingsplatsen



Hjalmar Brantingsplatsen today

A new east-west axis: Lindholmsbron

The second major axis, complementing the North-South boulevard 'Göta älvgatan', is a new East-West connection. The making of city is also about continuing to build on its traditional and historic structure. One of its key-spaces Norra Hamngatan is a place underused today, with no one walking there. This is a wasted opportunity. But there is the potential to activate it, not as a road, but as a slow traffic route. Start with an intensive ferry service every 3 minutes from Norra Hamngatan across the river to Lindholmen, and even install a movable bicycle / pedestrian bridge in the future. This movable bridge connects diagonally across the river. It makes Norra Hamngatan one of the main commuting and vibrant axes of the city and will allow for viable leisure and service cores at both ends (Ullevi and Lindholmen).



Hamngatan



Älvsnabben:
from 30 to 3 minutes



Ferrybridge, Willemstad:
examp. movable bridge

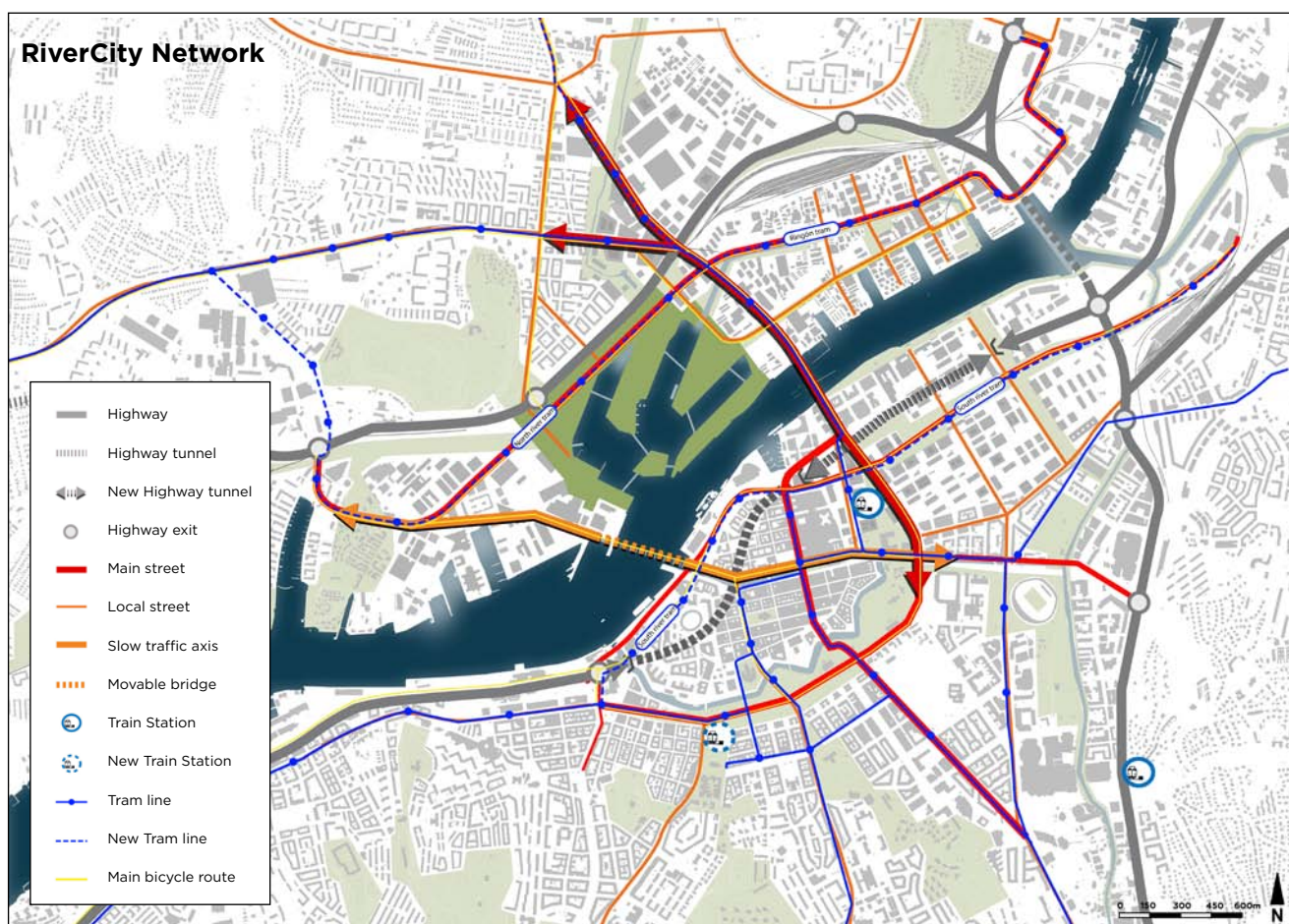


Pass. Simone-de-Beauvoir
Paris: bridge as boulevard

RiverCity **accessible**

The result is a network of streets - and not of functional roads - that makes the river and RiverCity accessible. The port infrastructure (highways and cargo rail) will remain. But rather than continuing to cut off RiverCity from the river and the neighboring city-districts, its adaptation will allow for the creation of a local and subregional network across the river. This network will act as the basis of RiverCity's development.

'Göta älvgratan' is to start at the Central Station, because the station will be the main interchange node of the city and needs to be the spider in the web of a public transport network, if to achieve the ambition of 40% share of public transportation in mobility patterns. The bridge will accommodate all modes of transport and bifurcates onto existing and new tram lines in the north.



Slow traffic network



Street network



Public transport network

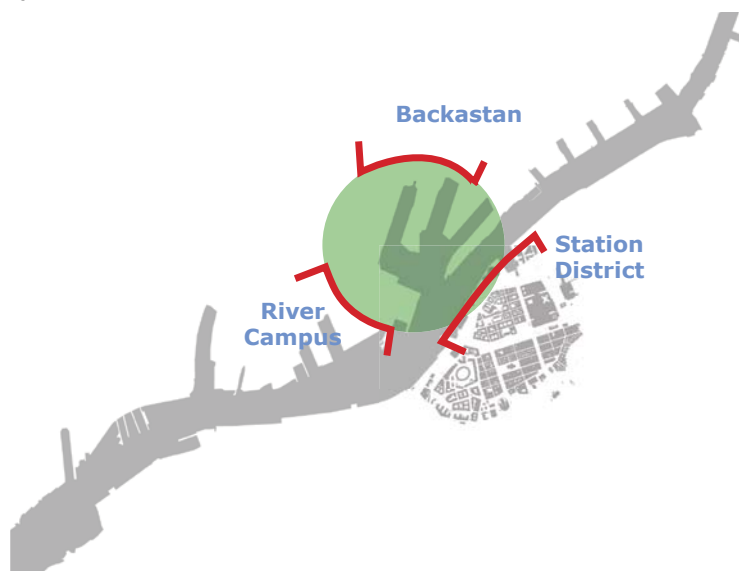
RiverCity **livable**

The second step to achieve is to make RiverCity livable. Liveable means opening up the waterfront for all citizens. We see an opportunity to create in Frihamnen - since 1996 abandoned by the harbor, but still fenced and gated - a central park of the 400th anniversary alongside with the new bridge 2021. The creation of **'Frihamnsparken'** directly on the riverbanks, a green waterfront makes it a public domain. From there, it is possible to start spreading out a green network in the medium and long term. This strategy adopts the principle of the Allemansrätten, the unique Swedish right of public access: the river is for everyone.

'Frihamnsparken' continues the tradition of cultural urban parks as Kungsparken or Slottsskogen. But it is a 21st century version of such a park. It is a natural park as well as a very traditional urban park which allows for diverse and intense uses by multiple citizens groups. The task is to create an attractive public space, a sheltered green environment in a rough climate for North and South Gothenburg.

The initial phase created a continuous public Kajpromenade on the north bank of Göta älv. The combination of dynamic port activities with desolated and overgrown shores makes it already an interesting industrial park like area. Further occupation of a public domain is achieved by taking down fences along parts of the shore line in the short term, and by organizing temporary events.

The next phase should be the creation of a public waterfront park at Frihamnen. The park defines the public character and brings livability and attractiveness to RiverCity, making it a central public place on the water in the mind of all citizens. Poor soilconditions and low land levels (flood risk) makes it less appropriate for urban development. Because of the conditions of low land levels, good water quality and a clay soil, the Frihamnen site has the potential to become a diverse wetland park: a green lagoon in an urban and industrial setting with a network of boardwalks, as well as limited and selective built areas of public program to support activities. Temporary flooding will give the park an extra dimension for ecological value and park experience. It allows the natural environment to come back inside the city.

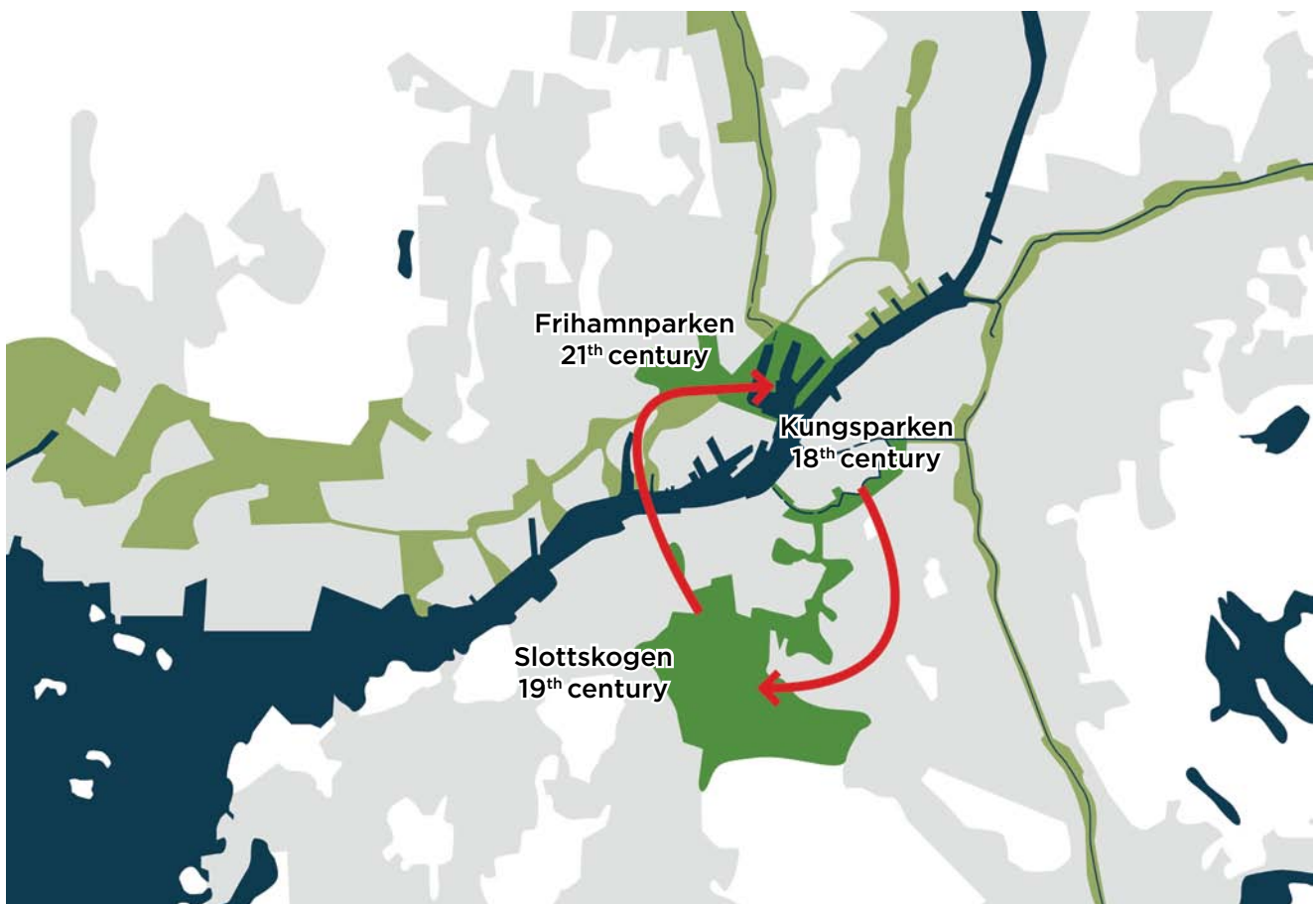


A 21st century park on the northbank: Frihamnsparken

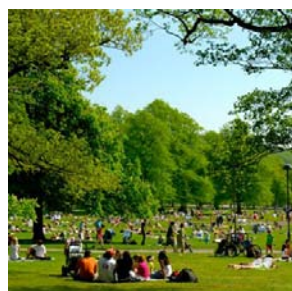


A 21st century park on the northbank: Frihamnsparken

Why at Frihamnen? The city of Gothenburg has a strong tradition of public parks on its Southbank. Since the city was founded in 1621, parks were established around the city centre like Kungsparken and Slottskogen (1860). These parks are popular and accommodate important cultural manifestations of Scandinavia; but they tend to be saturated. If the North of Gothenburg is to regain the river as well, and is to benefit from this tradition of parks, we need to create a new park in the North, at the river.



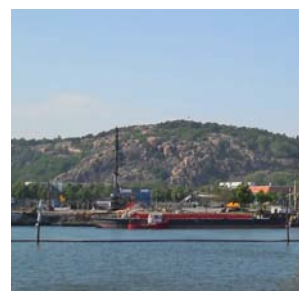
Kungsparken



Slottskogen

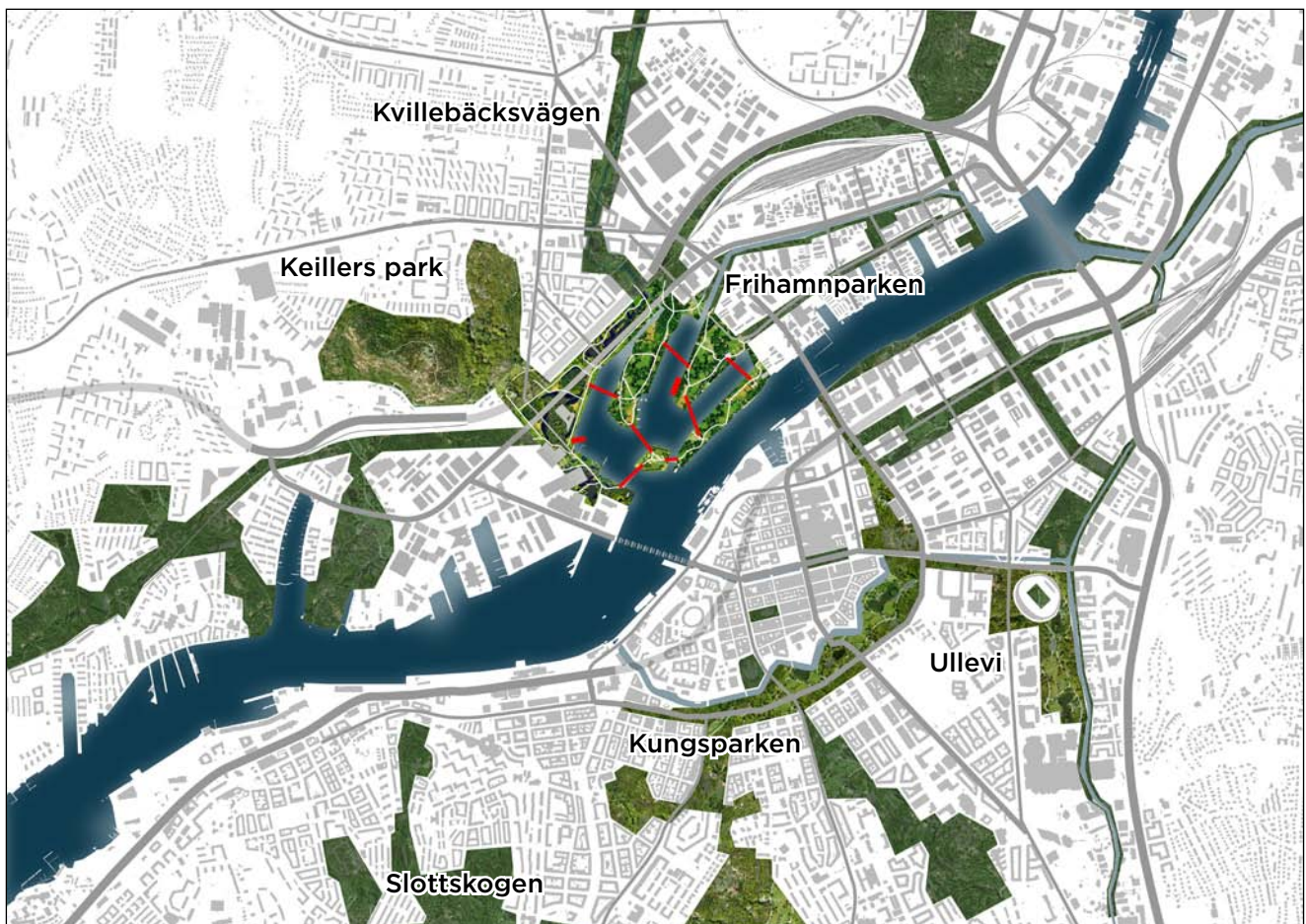


Frihamnsparken



Keillers park & Ramberget:
accessible landscape spot

'Frihamnsparken' allows for the reintegration of the river with the surrounding landscape and its valleys and ridges, which were separated by the logistic activities of the port and its infrastructure. It connects with the slightly isolated Keillers park (1908) making Ramberget an accessible 'natural' landscape near the city centre. 'Frihamnsparken' is therefore the catalyst of a continuous recreational green-blue network of promenades around RiverCity. Frihamnsparken is a central public space in the walkable city of Gothenburg.



Kvillebäcksvägen:
current ecological qualities



Hong Kong Wetlandpark:
natural but very urban



Kensington Gardens London:
temporary program & events



Philips Campus Eindhoven:
public park centrality

RiverCity **dense**

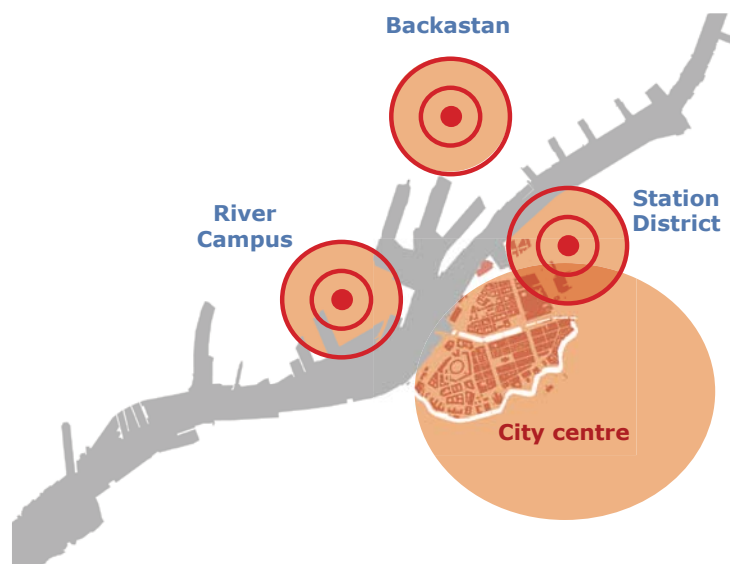
Opening up Gothenburg also means creating more than just one central place. Simply expanding the inner-city to the northern side of the river you cannot create lively places. It is a too vast of a task. We have to concentrate urban life in few places in the city and make sure these places are attractive and work well.

The third step to achieving this is therefore to make RiverCity at key-places sufficiently dense. Concentrate density of use and of public activity and therefore of public investment efforts on determined areas, which in turn will allow for the development of three new centers, Lindholmen, 'Backastan' and the Central Station, each with a high quality of urban life. Each of these three strategic places will become a catalyst in the transformation of RiverCity.

Make **Lindholmen** really(!) good, mixing and bringing in more housing along its waterfronts. Make it an intense urban place, rather than a monofunctional business campus.

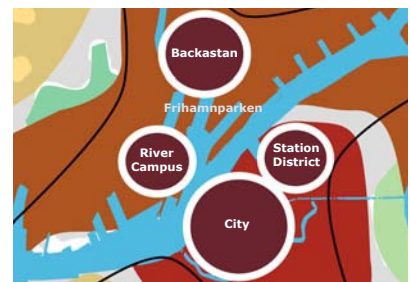
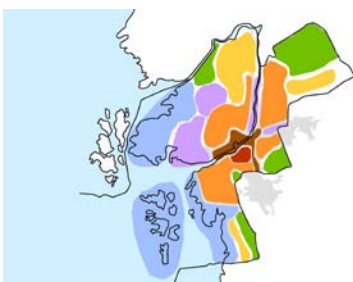
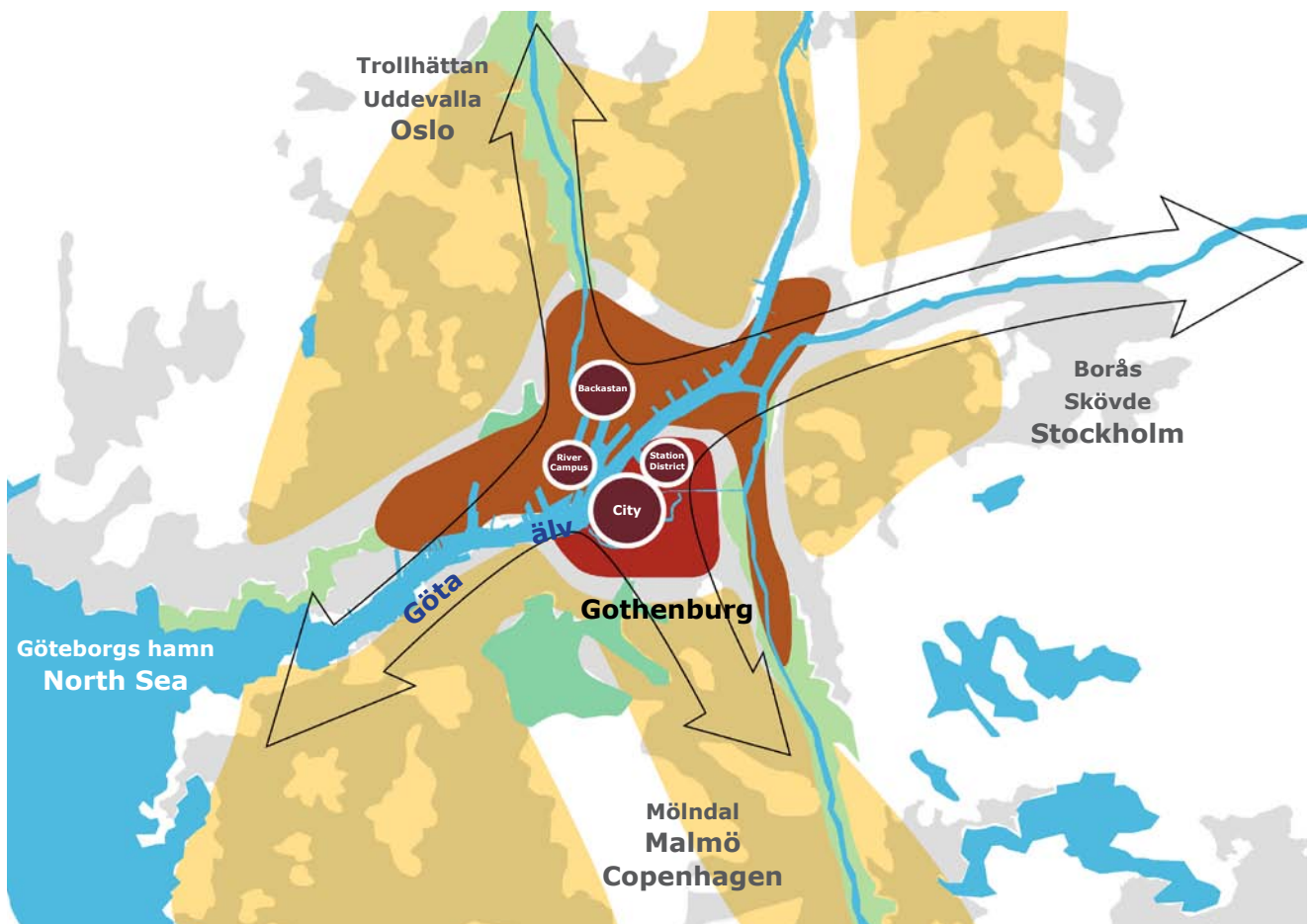
Transform Backaplan into '**Backastan**', not a place cut-off behind the highway and rail infrastructure, but a place which - with the new North-South axis Göta älv gatan - becomes a major urban centrality for the North of Gothenburg.

And obviously focus on the Central Station area. Create at the station the centrality that maybe Gothenburg has not yet discovered - or is one of the last European cities to discover: a **Central Station district**, which is open, visible and accessible and which is one of the key areas of urban activity.

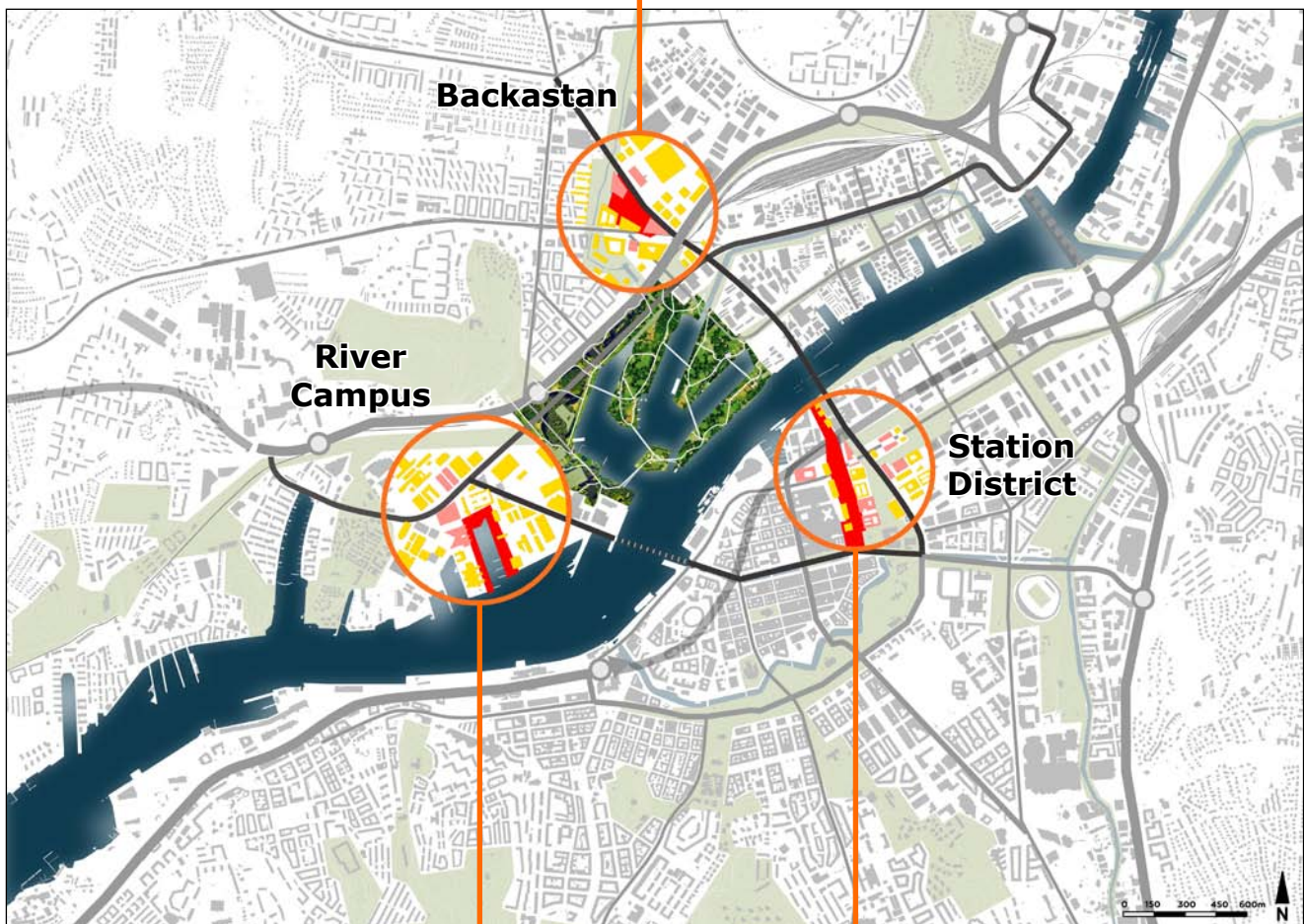


A polycentric Regional Core

Lindholmen, 'Backastan' and the Central Station will complement the existing city center and open up the way to a polycentric vision of the Gothenburg Regional Core. It allows for creating new urban poles of regional relevance closer to the different parts of the Gothenburg metropolitan area north of the river. And it fosters a vision of inward oriented urban development, using the huge land resources of RiverCity as an opportunity to counter the trend of sprawl of regional functions in outer (highway) locations.



Backplan is at the moment an introvert place of industrial and logistic activities and a number of redundant sites, all 'fragmented' by road and rail infrastructure. The character of the area 'conveys' a sense of a peripheral industrial location, whereas in actual terms it lies only a short distance away from the river and the city centre. The scale of the development potential seems extraordinary, particularly on the scale of the city of Gothenburg. Current plans foresee new urban housing, which will begin to change not only the demographics of the area but also upgrade Backplan's image as a living city quarter. Equally significant is its geographic location in the overall plan as the 'gateway' to North Gothenburg and the 'arrival point' of the river crossing. It forms a hinge of north-south and east-west infrastructure lines but functions at the moment as an inhospitable 'through traffic' junction. Although its potential is partly recognized by new plans, what is not clear is its position in a comprehensive strategy.



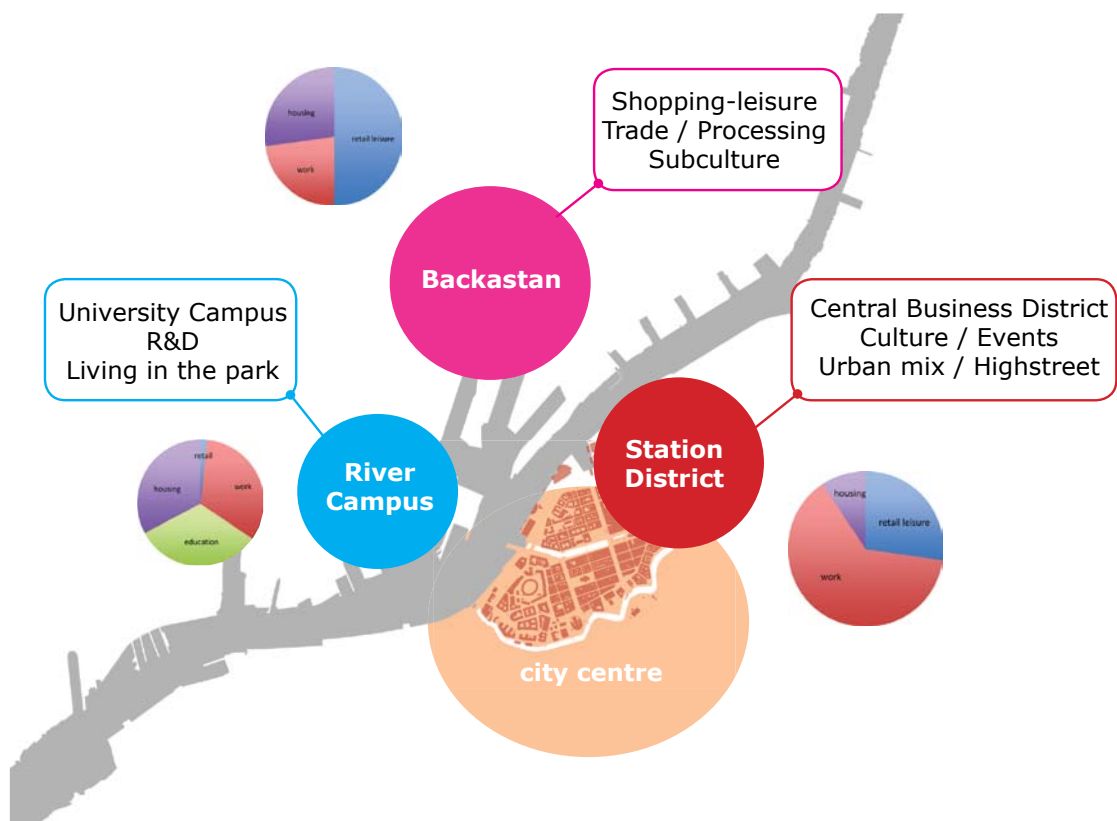
Lindholmen has already established a character as a 'high value' place successful in attracting tenants such as the Chalmers Technical University and the Ericsson's Headquarters. Residential projects along the north bank of Göta älv are also of a good quality. The retention and refurbishment of old industrial areas is beginning to form attractive residential neighborhoods but with no sense of an underlying cohesive strategy on either land use or infrastructure. What the North of the river Göta älv seems lacking is a comprehensive view of the full stretch of the lands which are abandoned by the harbor.

The potential of a significant Central Station re-development project is obvious. A number of different cities have capitalized on lands which were a result of rationalization of railway functions in the last 20-30 years. All projects have a major challenge: while stations once were arrival points at the edge of cities they are now central to city plans. A new vision needs to seriously address severances between the established parts of the city around them.

Three complementary polycenters

The development of these three new centralities is characterized by common principles:

- All places are to be mix use and self sustainable neighbourhoods with residential, working and leisure program/services and public open spaces as part of the mix;
- They are all very different places both physically and in terms of the composition of the functional mix and the encouragement of different sectors to inhabit different parts of the plan;
- They will develop at a different pace, but they can all get started relatively quickly – e.g. in accommodating different market and residential needs;
- The briefing, design and phasing of these new centralities of RiverCity will be critical in addressing issues of competitiveness between these new polycenters and the existing city center.



RiverCity **Backastan**

A new center in the North: from Backaplan to Backastan

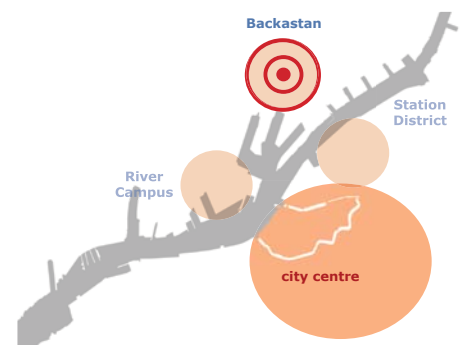
Backastan has the potential to become a central place capable of bringing together the urban life of a fragmented and segregated Northern Gothenburg.

Strategic interventions:

- Downgrade the road infrastructure from motorways to urban boulevards (Götaälvgatan) and streets;
- Generate direct visual and functional lines from North to South in order to convey the sense of 'directness' and proximity to the city centre;
- Create a new highly visible and centrally located 'signature place', such as a new triangular central urban square and a distinctive urban typology;
- Integrate the blue-green network into Backastan, making it accessible from the river and Frihamnsparken;
- Foresee an appropriate mix of land uses (commercial, culture, office, housing) and of models for delivering housing, service and infrastructure which will achieve both 'expensive' and 'cheap' accommodation.

Opportunities/threats:

- Complement the city centre with 'compatible' and 'supportive' more than 'competing' economies and services;
- Re-interpret the relationship between the city and the port by providing the 'setting' for the new generation clean port and logistics with land use conflicts absorbed by sophisticated infrastructure and modern city management models;
- Experiment with new denser typologies of family housing to complement existing lower density development along the river – focus on affordable and family housing;
- Avoid gentrification and 'blanket increase' of land values which will compromise diversity and push essential city services and affordable housing to outer suburbs;
- Avoid exclusion of still viable businesses which will not be able to successfully relocate.



RiverCity **River Campus**

A 'signpost' of RiverCity as strategic destination

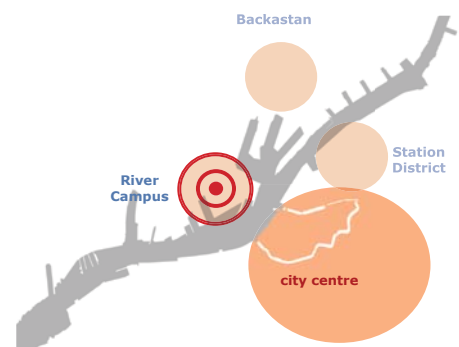
Lindholmen has the potential for further diversification and become a lively new city-centre of international allure.

Strategic interventions:

- Capitalize on the existing green context and on the new Frihamnenpark, which can 'signpost' the River City and specifically Lindholmen as a strategic destination and a unique place of international significance;
- Develop a new concept for a 'living campus' to include selectively working, living, convention and leisure, city infrastructure and ecology – explore new type of buildings in a campus like setting;
- Install a new river crossing towards the city center (and Ullevi) which can act as an east-west leisure walk and connects business centers across the river;
- Realize a continuous multimodal 'spine' in prolonging Lindholmsallén all the way to Ringön, and include a high value transport system and basic residential and commercial services alongside.

Opportunities/threats:

- Provide for a comprehensive mix of uses which can support sustainable community living to the north but also encourage 'destination type facilities' for the city and the region. The proportions of housing to workplace will be critical for its liveliness and ability to support local facilities and services;
- Provide an accessible river walkway to connect leisure and service designations;
- Capitalize on water transport to open up access to facilities;
- Avoid that the riverfront development becomes a carpet of singular but not linked urban interventions.



RiverCity **Station District**

A new downtown for the region Västra Götaland

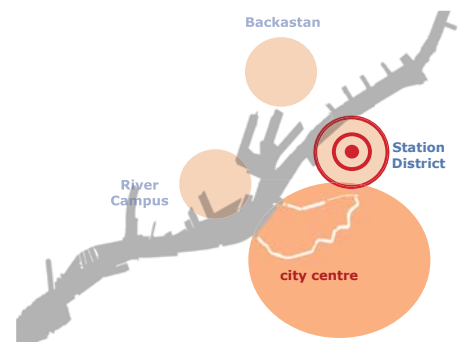
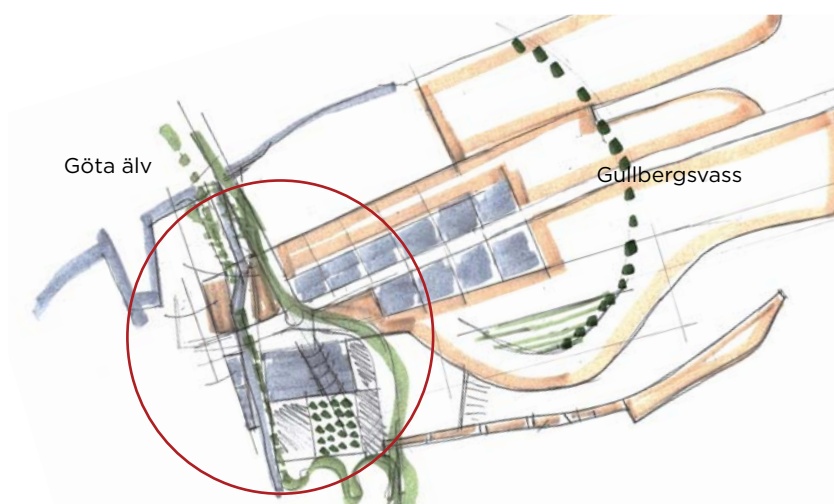
Central Station Gothenburg, the city's main interchange node, has the potential to become a new centrality. As such it can form a hinge to the eastern parts of Gothenburg and allow to open up the major development potential on medium and long term at Gullbergsvass. This will require a comprehensive plan for the station development along with a longer term implementation/phasing strategy:

Strategic interventions:

- Organize a new multimodal transport hub with an attractive, functional and exciting urban environment for travel and business;
- Design a new station square bringing the station to the water, the opera and exhibition centre;
- Create new workplace and residential neighborhoods which can collectively support the expansion of the new service industry, population growth and associated services, including education, health facilities, congress etc.;
- Redevelop the 'downgraded' lands behind the station that now constitute a huge opportunity for the next 30 years city centre expansion, in order to create a 'livable waterfront' and the establishment of a river community (living, relevant industries, trade, etc);
- Foresee also reservations of low rental accommodation and lands for crafts and arts communities to facilitate the retention or generation of such valuable communities.

Opportunities/threats:

- Use this key transportation interchange node at the arrival of the bridge and Götaälvvatan and at the crossing of the strategic urban road network;
- Integrate a number of new developments and strong landmarks like the opera, the lipstick building, the wheel, the main bridge, etc into the city fabric;
- Capitalize on the vicinity to the waterfront and these landmarks, whereas today there is no relationship or sense of such a presence;
- Open up the historic centre to the station and the river, whereas today the shopping centre acts as a destination and a barrier more than a 'hinge' from the center to the station and the river;
- Upgrade the station environment;
- Retain trade, logistics, light industrial or city service sites on efficiently used sites with well 'designed' interfaces between them and live-work accommodation.



RiverCity

Development Framework

Create 1 park, 2 streets and 3 places

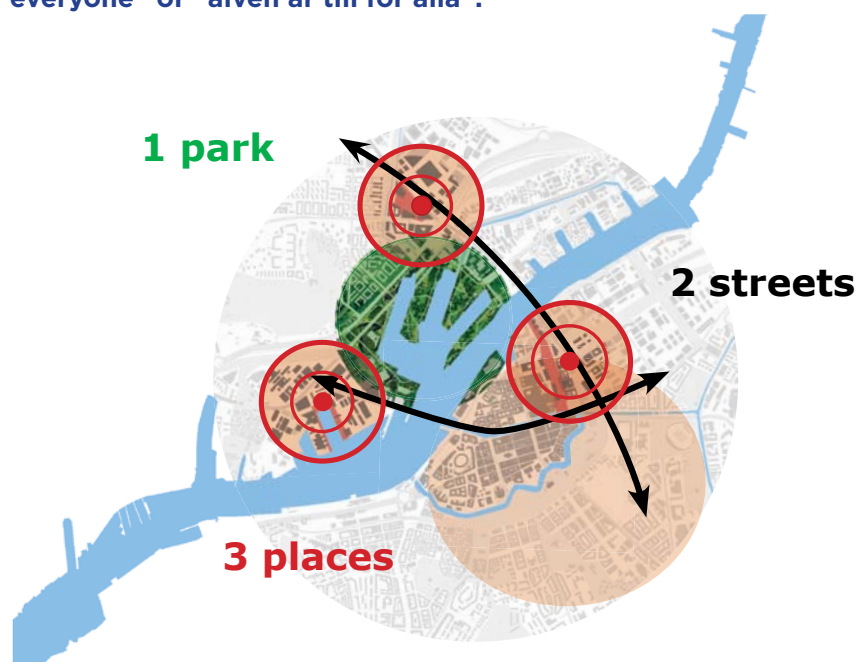
Accessible, livable, dense - this strategic framework is the base on which RiverCity can evolve, transform and grow in the future. It will allow for the necessary quantum leap in urban quality and lead to a development of metropolitan scale over the next 30, 40 years. It could accommodate some 25% of the total growth of inhabitants of the city (60,000 of a growth perspective from 1,000,000 to 1,250,000), and some 50% of employment growth (48,000).

To achieve this ambition it is necessary to invest in the cornerstones of the strategy, to create strategic urban spaces in RiverCity:

- **1 park** - transforming Frihamnen into one of the main open and public spaces in the middle of the city,
- **2 streets** - using the opportunity of the projects of the new bridge and a new east-western crossing, and the creation of
- **3 places** - upscaling and transforming Backaplan, Lindholmen and the Central Station area into self-sufficient polycenters.

They will become the framework on the basis of which we construct the city. We have to dare to invest in these places in order to create substantial capacity for growth and to create new public landmarks of Gothenburg.

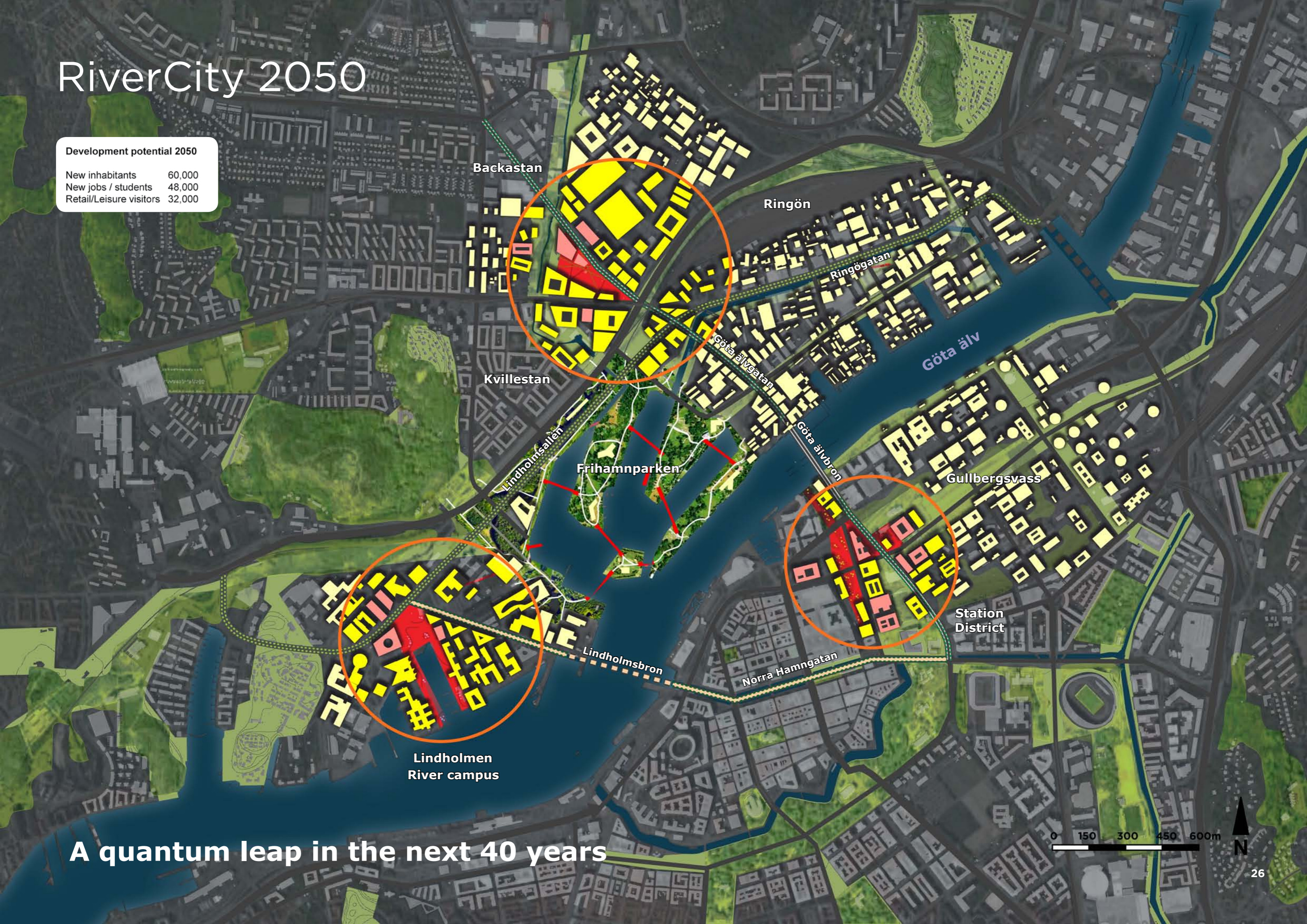
“The river is for everyone” or “älven är till for alla”.



RiverCity 2050

Development potential 2050

New inhabitants	60,000
New jobs / students	48,000
Retail/Leisure visitors	32,000



A quantum leap in the next 40 years

Thoughts on phasing and delivery

2015 Frihamnen is the first place to act. The implementation of **'Frihamnsparken'** can start immediately and gradually claim more land of the abandoned harbor areas, without eliminating current temporary uses. Herewith the waterfront will become publicly accessible. At the same time, a **ferry shuttle from Norra Hamngatan to Lindholmen** - or even a moveable bridge - can be put in place which will reconnect this upcoming center to the South bank. This will allow for a further diversification of **Lindholmen**.

2021 The realization of the new bridge will be the triggering element to realize **Götaälvgatan**, the new north-south boulevard linking central station with Backaplan. This event is the key to reorganizing the road-infrastructure which dominates today both north and south of the river banks and to introduce more public transportation to the north of Gothenburg:

- in the north of RiverCity it will allow to release the potential of Backaplan to become a new development pole, with a strong commercial component: **'Backastan'**.
- in the south it will allow for the reorganization of the **Central Station District** and to create a major public space that integrates the urban fragments around it.

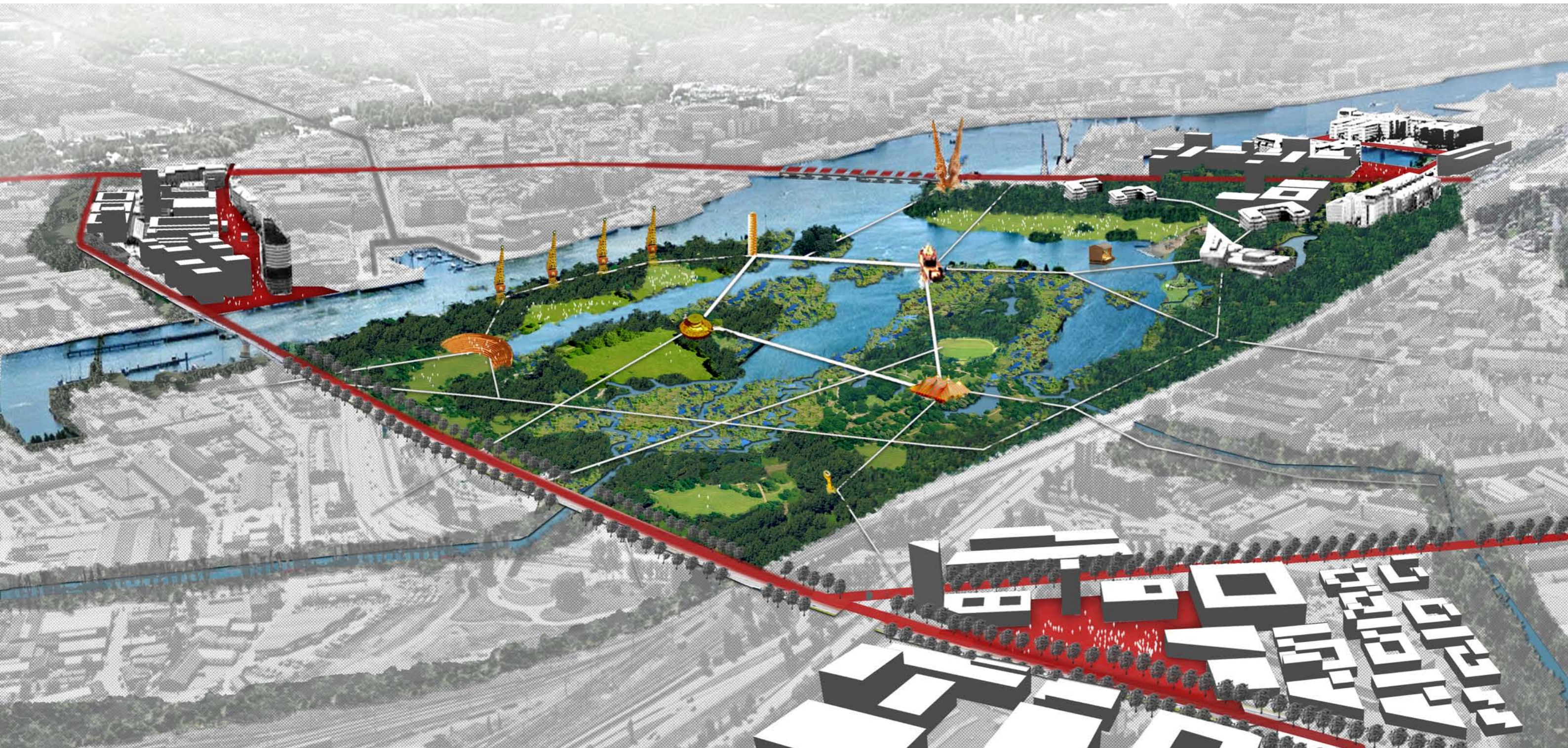
2030 The realization of Västlänken (2027) will accelerate the transformation of the **Central Station District**, as it will allow for completing the future interchange node at the Central station as well as free valuable land in the areas east of the station.

The transformation, upgrading and requalification of the surrounding areas, such as Gullbergsvass and Ringön will gradually follow these initiatives on the basis of smaller-scale interventions of private initiative, while retaining the substratum of still viable business-communities (Ringön).

Concerning a successful delivery of RiverCity some of the following considerations might apply:

- The phasing and financing of the main infrastructure will be tricky and needs a considerable upfront investment in order to release sites for development - infrastructure funding mechanism from development levies and/or land regains;
- Each of the three new centers (3 places) will require a comprehensive plan for their development along with a longer term implementation/phasing strategy;
- The first phase of each of these three places is important and need to be an image generator project (see Lindholmen with Ericsson and Chalmers University);
- There is a need for mechanism to transfer value from high value sites (e.g. Lindholmen or Central Station) to more difficult ones (e.g. Backaplan);
- Time frames for the availability of the different sites is very different, as existing industry - some might have 20 year of life in front of it - should not be removed if not necessary;
- As housing and office will amount for the bulk of development space, there need to be strategic reservations for future public services (even hospitals and other universities on a 30 years horizon);
- The retraction or transformation of existing uses will take place at different paces and has to be considered by a flexible and comprehensive plan (e.g. retraction of the industry through relocation);
- There is a need for a land management and affordable housing study which will suggest ways of differentiating land values and delivering social provisions, in order to avoid gentrification and the changes of the socio-economic mix of inhabitants toward even more mono-cultural condition.

RiverCity 2030



Annex **transport**

Re-urbanizing transportation infrastructure

Gothenburg is still much of a car-oriented city. One of the reasons is its history of car manufacturing. Another reason is the strong emphasis on road infrastructure in the Gothenburg area. The share of car transport is today 50%, whereas public transport only covers 28%. When looking at commuting traffic to Gothenburg, the share of car transport is even higher (83%). All in all, the modal split of public transport is low compared to other metropolitan areas in Sweden and the rest of Europe.

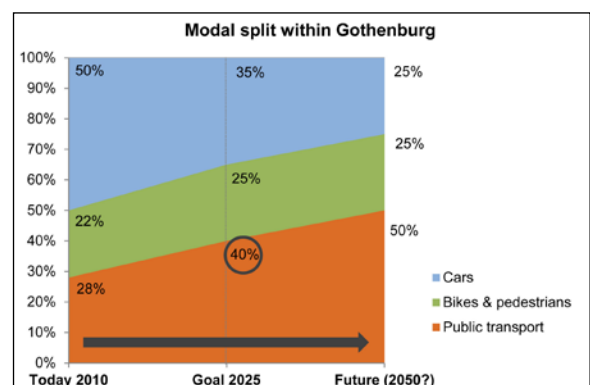
Gothenburg's road network is well developed. Not less than 6 motorways are entering the city. A high number of exits allows road traffic to flow into the city at almost every place. As a consequence national motorway infrastructure is present in the city and overlapping with the urban road network. Together with a large number of car parking areas in the city, this facilitates car transport in the city center to a large degree.

Additionally, the exits are space consuming "spaghetti junctions" non adapt to an urban environment. Furthermore the two arterial roads along the south and in the north of the river are cutting the city through its center. Thanks to the newly built Götetunneln along the southern river shore at least some of the road traffic has been removed and accessibility to the river improved.

The public transport system of the city of Gothenburg is well established especially in the South. A dense network of tram and bus lines connects the different areas of the city. The connection of Gothenburg's wider agglomeration with public transport does not have the same standard, however. The commuter train network is not very dense and also regional buses are not a very attractive alternative either. The planned rail tunnel Västlänken (2027) will improve regional public transport.

The bicycle network in Gothenburg is quite well established and a number of pedestrian areas are available in the old city center. However, the river and the road and rail transport infrastructure are barriers that limit the potential of non-motorised traffic. The Götaälvbron with its height of almost 20 meters is preventing bikers and pedestrians from crossing the river.

Official goals for the future: The city of Gothenburg has clearly expressed its wish to change transport patterns in a way that in the future the share of public transport as well as pedestrian and bicycle traffic will increase. Two concrete goals have been stated: increase the modal split of public transport to 40% until 2025 and absorb transport growth (additional transport) by public transport.



3 Main goals for RiverCity

Transportation plays an important role in the RiverCity development framework. It has a major function for making the river accessible, for making RiverCity more liveable and dense. The key to get there is **re-urbanizing transportation infrastructure**:

- Make the river accessible for everyone;
- Slow down transport in the city;
- Enhance the modal split of public and non-motorised transport.

4 Measures

• Create new urban lifelines:

New multimodal avenues/axes, with more space to non-motorised and attractive public transport systems, where vehicular traffic is slowed down making them more attractive for pedestrians, bikes and as a result for retail and other business:

1. New bridge over Göta älv (with lower freeboard) and continuing avenue: Göta älvgatan
2. Avenue along the northern riverside: from Backaplan to Lindholmen and later to Ringön
3. Avenue along the southern riverside from Skeppsbron to the station district and
4. River-crossing connection between Norra Hamngatan and Lindholmen.

• Disentangle motorway and urban road network:

Today's extensive motorway network with its many exits is closely interweaved with the urban road network. It should be separated to a certain extent, bringing advantages as (a) regaining public space, (b) better control over traffic inflow into city, and (c) clearly distinguished layers of urban and regional networks according to their different functions (being only selectively connected).

• Connect different centres:

The urban public transport network is expanded along the new urban lifelines with:

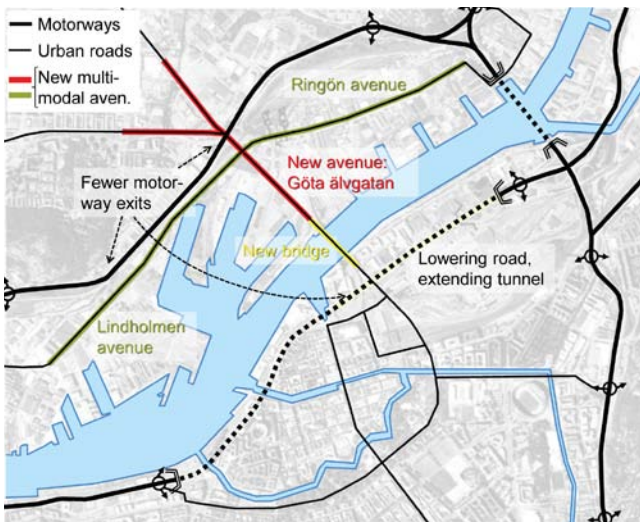
1. the North river tram line (Brantingsplatsen - Lindholmen - Eriksberg, with main priority),
2. the South river tram line (1st stage: Järntorget - Skeppsbron - Opera - Lilla Bommen, 2nd stage: Lilla Bommen / Station District - Gullbergsvass) and
3. the Ringön tram line (Brantingsplatsen - Ringön).

Also a direct bike & pedestrian connection over the Göta älv river from Norra Hamngatan to River Campus/Lindholmen is created. This connection can be an intense ferry service in the beginning and maybe later a (movable) bridge for non-motorised traffic.

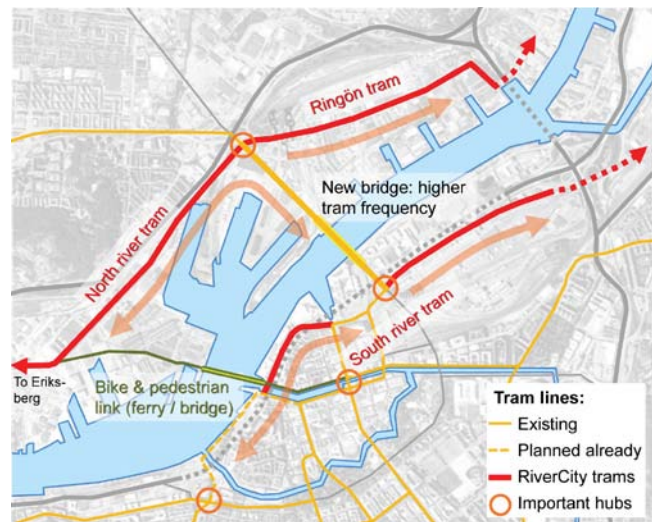
• Bring together houses and workplaces:

Areas with mixed use for housing, business and recreational space are planned and implemented. In that way the living, working and leisure can be brought together. When more people live and work in the same area (city or even quarter) this has the advantages of shorter daily transport distance per person leading to a lower transport demand and ultimately less investment in infrastructure, lower emissions of noise, air pollutants and greenhouse gases.

Proposed road and public transportation networks



Road transportation network: new multimodal avenues.



Public transportation network: multiplication of tramlines.

Quantification of future flows

On the basis of the number of employees, inhabitants and other visitors at the new RiverCity development areas, transport model calculations have been carried out.

In total, **transport demand** to the north-western riverfront will double, which means an increase of about 75'000 Pax per day (in both directions). New tram lines are therefore crucial to absorb almost 60% of the new transport demand of more than 40% of the total demand.

The daily **number of cars** driving to and from the north-western (Lindholmen/Eriksberg) and north-eastern (Ringön) riverfront increases only by about 10-15'000 cars each, whereas the number of Pax in public transport is going up by around 40'000 to Lindholmen/Eriksberg and 15-20'000 to Ringön. Today's **modal share of public transport** to and from the RiverCity area will increase from below 30% to over 40%. For the northern riverfront public transport will be 42% and non-motorised transport 18%. In the whole city, the share of public and non-motorised transport will be around 50% and 25% respectively.

Transport demand in RiverCity (no. of passengers per day, in both directions)			
	Today	Future (2040/50)	Additional demand in the future
<i>Public transport frequencies (new/intensified tram lines):</i>			
- North-western riverfront (Lindholmen)	<20'000	60'000	~40'000
- North-eastern riverfront (Ringön)	<2'000	18'000	>15'000
- Over new Göta älv bridge	not available		~60'000
<i>Pedestrian & bike frequencies:</i>			
Between northwest riverfront and city centre (new ferry or bridge)	~10'000	>25'000	>15'000