

# Gentle Mobility

## The Graz Model of Success



**G R A Z**

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A tramway slides along the pedestrian area in Herrengasse.



Jakominiplatz is a hub of public transport



Gentle mobility also means...



...a lot of recreational space for people

# Right of Way for People

**A high quality of life is essential for living in the city. If the quality of life deteriorates, the image of the city as a good place of residence will suffer. As a consequence of the poor quality of life, the residents will relocate elsewhere which in turn will have fatal effects for the economic situation of the city.**

The city of Graz puts much importance to quality in all areas of life. Not only is the quality of life defined by an intact environment, ideal living conditions and attractive economic surroundings, good conditions for the individual mobility behavior are as well a defining aspect of the quality of life. In the concept of gentle mobility people have the right of way – but this has not always been the case. In the 1950s and 1960s traffic planning was almost exclusively aligned to motorized individual transport; this comes as no surprise given the limited number of motor vehicles on the roads then and neither was the steep increase in motor vehicle registrations foreseeable at the time. This bias in combination with a dramatic

increase in the growth of the volume of traffic led to massive environmental and traffic problems.

This is why the city of Graz said goodbye to a motor vehicle oriented road planning and early on followed new paths. In its new approach the city focuses on future – oriented traffic measures such as promoting bicycle traffic, the development of the public transportation network, extensive restricted speed zones (speed limit 30km/h), a modern parking facility management, and modern technologies for reduced exhaust emissions.

The decrease in the number of accidents in restricted speed zones alone proves the effectiveness of the rethink. All those traffic measures are a consequence of the implementation of the traffic guidelines 2000 – the „Gentle Mobility Scenario“ – as the traffic philosophy of Graz which has accessed several EU- Programs and has been acknowledged internationally.

The pioneer in the implementation of the concept of „Gentle Mobility“ was the City Councilor of Traffic and former Vice Mayor of Graz, Mr. Erich Edegger. Even in the face of many adversities, the passionate bicycle rider never gave up trying to convince people of the benefits of this innovative concept.

He never lost sight of his vision to give space in the city back to the people.

He placed the emphasis on strengthening the weakest players in the system: Children, elderly people, handicapped people, parents with small children and most of all pedestrians and bicycle riders through their way of mobility contribute more than anybody towards an intact environment and a good quality of life.

The aim of the concept of „Gentle Mobility“ is to utilize the various means of transportation as environmentally and city – compatible as possible. The following aspects are central to this concept: More security for all traffic participants, a more environmentally friendly and efficient handling of traffic in which unnecessary car rides are avoided, as well as public space made as attractive as possible – the very space for the people we have been discussing.

These specifics led to a conflict of interests. The limitations of the motorized individual traffic especially have caused heated debates which are still ongoing today. This conflict of interests has both in the past and today caused delays and setbacks for this intelligent philosophy.



# Graz – City of Diversity

The Museum of Contemporary Art (Kunsthaus) which was opened in 2003 – the year in which Graz was Cultural Capital of Europe is a milestone of the cultural life in Graz.

**European Cultural Capital, UNESCO World Cultural Inheritance, bicycle – stronghold, domain of many Nobel Prize winners, cultural stronghold, and melting pot of many cultures – Graz has many faces. The city portrays itself on some occasions as metropolis, on other occasions as contemplative oasis with Mediterranean flair. But always Graz enchants the tourists and its visitors cannot help but succumb to its charm.**

**F**or centuries – or more precisely for millennia – the Graz basin has been a place where humans liked to settle. On a space of about 128 square kilometers on which today roughly 350.000 people bustle around on an average day, the first „citizens of Graz“ settled 3.000 to 2.000 before Christ: Stone-age people who still lived far from village-structures. Those structures emerged about 800 years before Christ; in the areas of Pfauengarten and Karmeliterplatz at the foot of the Schlossberg, archeologists discovered during the construction works for the biggest underground parking lot in Graz the remains of the oldest settlements in Graz built during the Hallstatt period. The name of the city dates back to the year 955 when Graz – or rather „Gradec“ was first mentioned as the Slavic word for „small fortress“. This small fortress stood – where else could it have stood – on the Schlossberg (473 m). In 1128 the name „Gradec“ changed to „Grac“ recorded in a certificate in the library of Stift Rein – the oldest still lived-in

Cistercian monastery in the world located about 15 km from Graz. In 1260 Graz was awarded town ordinances and privileges and among them its own coat of arms – the panther of the Earl of Steyr.

## Boom town in the Middle Ages

Between 1438 and 1493 Graz experienced its first boom and period of prosperity. Archduke Friedrich V., the later emperor Kaiser Friedrich III., declared the Murstadt (city along the river Mur) his favorite residence and designed and built the so-called „City Crown“ around the cathedral. Graz experienced its second period of prosperity under the rule of Archduke Karl II., who had the old Jesuit University built in Hofgasse and in this way laying the cornerstone for the center of study and education Graz is today. Because today approximately 40.000 young adults study and are trained by highly professional staff in one of the four main universities or in one of the study courses of the Joanneum Uni-

versity of Applied Sciences. Today the students contribute to the city's youthful dynamic during the academic year.

With the growth towards the end of the Middle Ages, which can be noted still today in the uncountable buildings of this period in the city center, the city of Graz increased its popularity as a place of residence. At the same time the new wealth made it increasingly attractive for passing through armies as a prey for plundering. With the continuous and growing threat of the Turks, the Schlossberg was transformed to a fortress in 1543. In 1642 the city added the arsenal (Zeughaus) to its fortifications. Of the then 188.000 weapons and suits of armor the armory held at the time, 32.000 are still on display in the world's largest historic armory today.

Napoleon finally did away with the Schlossberg- fortification. In the peace treaty of Schönbrunn, it was concluded that the fortress had to be destroyed in 1809; probably out of annoyance and rage because the armies of the short Corsicans hadn't

been able to conquer the fortress. From the 19th century, the development of Graz took place stroke by stroke. In 1868 the city park (Stadtpark) was obtained its new and present look, in 1887 the first tramway-pulled by horses went into operation. In 1899 the Opera House was built, in 1912 the General Hospital was opened. In 1938 Graz consisted of 16 districts- the 17th district (Puntigam) followed in 1988.

## Graz top modern

Towards the end of the 20th Century the international spotlight was increasingly placed on Graz, the Murmetropolis: In 1999 the city center- the old town of Graz was declared UNESCO World Heritage Site – because of its charm as a busy and lively place with a historic architectural substance and its unique roof- landscape. Also, in 1999 the pilgrimage church in Mariatrost was upgraded to a Basilica. In 2002 the city hall (Stadthalle) was opened with the World Buddhist Meeting „Kalachakra“ in the presence of the Dalai Lama- a clear sign of the ongoing intercultural and interreligious dialogue in Graz. A pathway for which the city won the Europe Prize Award as early as 1979 and which was consequently followed with establishing the City Office for Integration in 2005. In 2003 Graz became the Cultural Capital of Europe. The Island in the River Mur (Murinsel) and the Museum of Contemporary Art (Kunsthau) are two top modern additions to the townscape which have caused a furor on a global scale ever since.

## City of Economy and Culture

The awarded title Cultural Capital speaks of the rich cultural life in Graz. Besides the established and renowned art institutions and festivals such as „Styriarte“, „Steirischer Herbst“, „Forum Stadtpark“ or „Camera Graz.“ New festivals such as „La Strada“ or the „Jazz-Sommer“ have long been established and are today highly popular with their fans who are willing to travel to take part in and enjoy the festivals.

Approximately, a third of all Styrian inhabitants work in Graz – the statistics



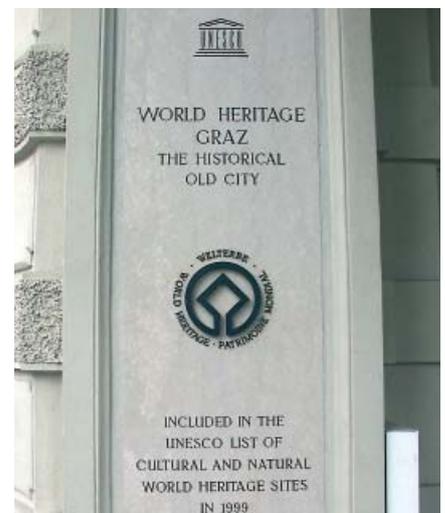
In the year 2002 the main square of Graz was redesigned

count 184.000 employees. The car manufacturing cluster around „Magna Steyr“ and the company „AVL“ have a long tradition in Graz and a strong reputation on the international market; as for example the company Siemens Graduate Program (SGP) and Traffic Technologies, too. They are the biggest employers in Graz.

The „Wood-Cluster“, the „human. technologie. styria“ or the „Material-Cluster“ ensure market – responsive, future – oriented innovations and secure Graz as a working place and business location. The companies are supported by research institutions such as the Joanneum Research, the Christian Doppler Research Association and the Austrian Academy of Sciences. The competence centers in Graz which work in various fields from biocatalysis to the virtual motor vehicle and are the source of comprehensive knowledge and wisdom.

## Graz at the Center of South-East Europe

Graz owes its status as a business and research location to its central geographic location in Southeast Europe. Within a range of 300 km the cities Vienna, Linz and Salzburg, but also Budapest, Zagreb, Ljubljana or Trieste can be reached. In order to improve the city's accessibility, the Graz airport has been developed to a terminal small by comparison to other airports but excellent in service. In addition the Koralm – Railroad and the Semmering – tunnel are being built to take passenger and freight transportation from and to Graz to new heights in the years to come.

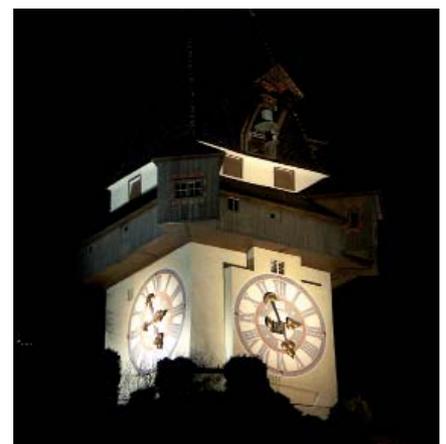


World Cultural Inheritance since 1999

### Graz is growing

Since the end of the 19th Century, the population of Graz has steadily been increasing. (Source: Central register of residents)

1850:	about 50.000 inhabitants
1900:	168.808 inhabitants
1951:	226.476 inhabitants
1971:	248.500 inhabitants
1991:	237.528 inhabitants
2010:	257.898 inhabitants

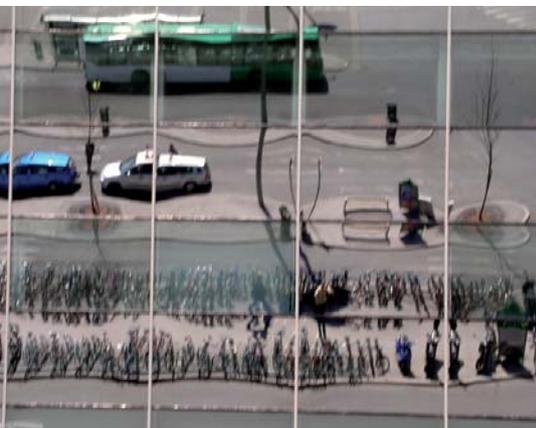


The clock tower (Uhrturm) is the symbol of Graz

# Decision: City for Cars or More Space for People



Today unthinkable: Cars in the city center



A mirror image of mobility



Safe and on foot in the pedestrian zone

**For a long time the car promised unlimited mobility for everybody. On the upside it could hold its promise- mobility is higher than ever before. On the downside the car causes accident victims, traffic noise and pollution of the environment. The dream of unlimited mobility has long turned into a nightmare.**

**T**he first automobile produced in 1886 was an epochal invention. Ever since the first outing of Karl Friedrich Benz in his three-wheel „Motor Carriage“ equipped with a single horsepower, the car has become the symbol of technical innovation for economic growth but also for social status. The ego is reflected in the car we drive – and this may be the reason why discussions on cars often do not pass the emotional level.

As in most European and North American countries the traffic policy for the city of Graz has for a long time concentrated on motorized individual transportation which promised many advantages in its early days (and undisputedly still does so today). Traffic policies defined itself through measures for an increase in the road network high performance streets which were supposed to keep the traffic flowing smoothly and in this way help to reduce exhaust emissions and fuel consumption. In order to ensure the flow of unrestricted motor vehicle traffic, tramway lines were shut down – the circular line no. 2 on the Glacis was gradually suspended in the years 1962 to 1971, the line no. 3 to Gösting as early as from 1955 to 1957. Through the year 1950 the Graz tram net had been 41.3 km. It was reduced to 29.3 km only ten years later. The last trolleybus in Graz which had run between Griesplatz and Straßgang stopped its services after June 28, 1967.

Not only public transport was cut back, many open spaces had to give way to cars and traffic. Formerly green courtyards were turned into parking lots, many parks and trees fell victim to tarmac.

The calculation, however, did not pay off. More space for traffic caused more traffic, by now a well known fact. The problem of poor mobility arose again- delayed in time and to an even larger extent. The ever more growing proportion of automotive vehicles in traffic increased the pollution of the environment – the danger of fine dust as a health risk which reduced the quality of life considerably and which is mainly caused by traffic in the area of Graz and surroundings has been discovered only recently.

The climatically adverse conditions of the geographic basin location of the city together with the weather phenomenon of temperature inversion which is common to Graz in winter regularly causes high exposure levels of exhaust limit values. In the 1970s and 1980s it was mainly the smog which suffocated the city; today it is fine dust, nitrogen oxides and ozone in the summer. The bad air quality, the ever more criticized traffic noise and the negative results in the road safety records in the 1970s caused a rethinking process in city politics. City planning no longer was car oriented only.

This decision was made easier by historic demands of the city's structure: the medieval city center of Graz was, of course, built anything but car friendly; the narrow alleys are best left without cars. The aim of the city's political representatives was to maintain and improve the quality of life without restricting the demand for mobility. In order to be able to direct the development of traffic and its consequences in the region of Graz, data on the current traffic situation was collected and evaluated. Experts worked out three scenarios which included measures and effects up to the year 2010. The



A problem for car drivers and inhabitants: traffic jams, pollutants, traffic noise. The alternative: a gentle mobility

Scenario which proved to be best for the inhabitants and the city was to be the basis for a future oriented and a general comprehensive concept for innovative measures.

**Commuters – a problem from the traffic point of view**

The city of Graz counts more than 184.000 employees. Many of them commute daily from regions outside the city limits. The Integrated Traffic Concept of 1995 was based on an estimate of 70.000 commuters. Today this figure has doubled because of lower costs of housing, a much more attractive living environment in the outskirts and beyond the city limits and because of the increase in people's motorization.

The trend continuously points towards an increase in commuters which is a problem for the limited traffic capacity of historically grown cities. Therefore, the concept of „Gentle Mobility“ aims at decreasing the number of commuters using private cars and moving them on to public transportation. The parking facility management with new

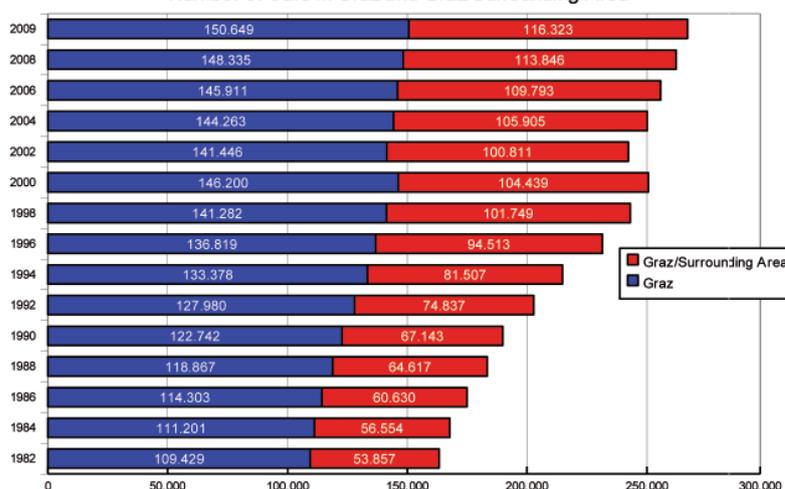
park & ride facilities (as already installed at Magna Steyr, at the feeder street to the Autobahn A2 at Sternäckerweg or in Weinzödl) in combination with new routes and projects makes public transport more attractive (the new line no. 4 leading up to the park & ride facility at Sternäckerweg in Puntigam or the new local transport hub along the Southern railway in Puntigam and Don Bosco) and should reduce the strain on the traffic situation in Graz.

**Traffic in Graz**

Every day 52.000 citizens of Graz use 40.000 cars to go to work. 136.000 commuters come to Graz in 100.000 cars daily. 220.000 cars pass through the city on an average day and 47.000 people pass the city limits using public transportation every day.

(Source: Graz Parking Facility Management, Directorate of the City Building Authorities, Department for Traffic Planning)

Number of Cars in Graz and Graz/Surrounding Area



In 1987 the city was faced with a sobering prognosis: Traffic experts predicted an increase of 25 percent in motor vehicles by the year 2010. The prognosis led to three scenarios for a decision on future traffic policies.

The „Scenario Trend“ creates development without any control measures. The traffic infrastructure alone will be designed to accommodate the fast growing rate of traffic and motorization. In this scenario roads increase by 30 % in the center and by 50 % in the access roads leading to the center.

### The Trend

The result: the volume of traffic in private motorized transport would increase by 30 %, whereby the percentage of public transport, bicycle riders and pedestrians would decrease considerably. Traffic noise and exhaust emissions have negative effects on inhabitants and the environment. The traffic security for weaker players such as bicycle riders or pedestrians decreases. Urban quality of life decreases, property located in central areas of the city decreases in value; and urban sprawl and relocation to the communities surrounding Graz increases.

### Car-Friendly City

In the scenario „Car-Friendly City“ automobile traffic is actively promoted and encouraged. Parts of the historic city center have to give way to traffic needs such as streets and parking spaces. This scenario calls for an increase in the road capacity by 70 % and just as in the Scenario Trend an increase of 30 % for parking spaces for cars. The negative consequences of the Scenario Trend are still increased and manifest in a massive way.

### Gentle Mobility

The third scenario of „Gentle Mobility“ offers a clear improvement for

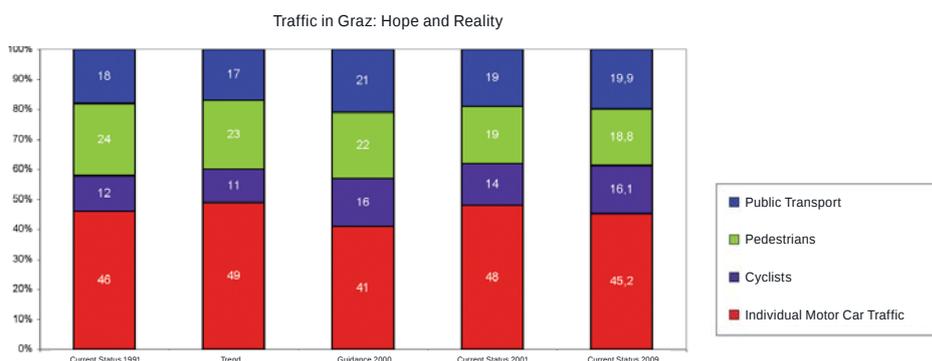


inhabitants, environment and traffic security. It places focus on the promotion of those traffic participants on foot, on bike and on public transport. The concept provides control measures, which limit the motorized traffic to a necessary limit and help to reduce unnecessary journeys in favor of „gentle“ possibilities of mobility. As a result airborne pollutants decrease while traffic security and quality of living increase. The analysis of the three scenarios came to a definite result: The implementation of the scenario of „Gentle Mobility“ not only will improve the quality of life for the inhabitants of Graz but will also sustain and improve mo-

bility in the city. Therefore a guideline for gentle mobility was passed as the „Transport Policy Guideline 2000“ in the city parliament of Graz in December 1992.

### Radical Changes in Traffic Policies: A Long and Stony Road

The way to „Gentle Mobility“ remained long and stony for those who wanted to implement the „Transport Policy Guideline 2000“. As early as the 1970s the first strategies were formed with the aim of covering the





so called VÜP solution advised a break with the one sided promotion of motorized individual traffic: only by enhancing the attractiveness of the public transportation system (tramway and bus) can the overall traffic situation be managed and at the same time the environmental situation be improved without compromising the accessibility of the city.

### The „Guidelines 2000“

For all those reasons stated above, the package which was adopted by the city parliament encompassed an intensive investment in bus and tram services combined with a focused parking facility management to bring advantages for all parties involved. The package will allow an expansion of the road network only if the residents are not unreasonably negatively affected by it. The capacity of the inner city network of traffic routes is not to be expanded in order to not cause even more road traffic and to not increase the health risk caused by fine dust or the carbon dioxide CO<sub>2</sub> emissions.

The principles of the „Gentle Mobility“ served as the basis for the „Transport Policy Guidelines 2000“ which were adopted by the city parliament of Graz. They state five goals including strategies for the implementation which will and have helped to realize „Gentle Mobility“ in Graz. The „Guidelines 2000“ were in accordance with the „Austrian Integrated Traffic Concept 1991“ and the „Styrian Integrated Traffic Concept 1991“.

need for mobility in the cities at the same time keeping the negative effects for people, the city and the environment as low as possible. On average city inhabitants are on the move in the city for a little more than one hour per day. The remaining 23 hours they are affected by the mobility behavior of others. The task at hand is, therefore, to obtain a balance between the fast and the secure reachability of destinations and the demand for the highest possible quality of life. A reorientation in traffic planning was called for. For a long time concepts for road building and public transport were been developed independently. All

elements of urban traffic are, however, interdependent. Supply and demand have a great influence on the transportation means of choice, the mobility behavior and last, but not least, the entire city planning. These findings served as the basis for comprehensive mobility concepts spanning across various means of transportation. Between 1977 and 1985 for the first time traffic experts of the city of Graz worked out a „Solution across various means of transport“ – for the Eastern part of the city. In this concept all means of transportation were considered according to their strengths and weaknesses. The results of the



A bike & ride facility



The Most Beautiful Train Station 2003



Modern: A Biodiesel-driven bus



Today unthinkable: Through traffic in Griesgasse (upper left), on Jakominiplatz, (upper middle) and in Schmiedgasse (lower right)

## Good Accessibility

Good accessibility of all destinations for the communal-, regional-, long distance- and freight traffic is a first point of focus of the new traffic planning.

Not only the city itself, but also the destinations within the city have to be and remain well accessible- and this not only with the personal vehicle but especially by public transportation, which is to be expanded and promoted extensively. These goals correspond to the new state of awareness of the city concerning traffic and its ecological responsibility.

## Compatible Traffic

Traffic shall become more secure, more environmentally friendly and more compatible with the needs

of the city. The speed limits shall be adapted to the respective environment – and not the other way around.

## Short Distances

Urban sprawl is one of the major problems of our times. New housing concepts and structures in the surroundings of Graz and the shopping centers on the periphery of the city not only demand for more motor vehicles, they also attract motorized traffic. This is where community policy makers for regional planning are challenged to come up with solutions for the necessary infrastructure in a way that distances are shortened in order to allow for accessibility on foot or by bicycle.

## Room for all Means of Traffic

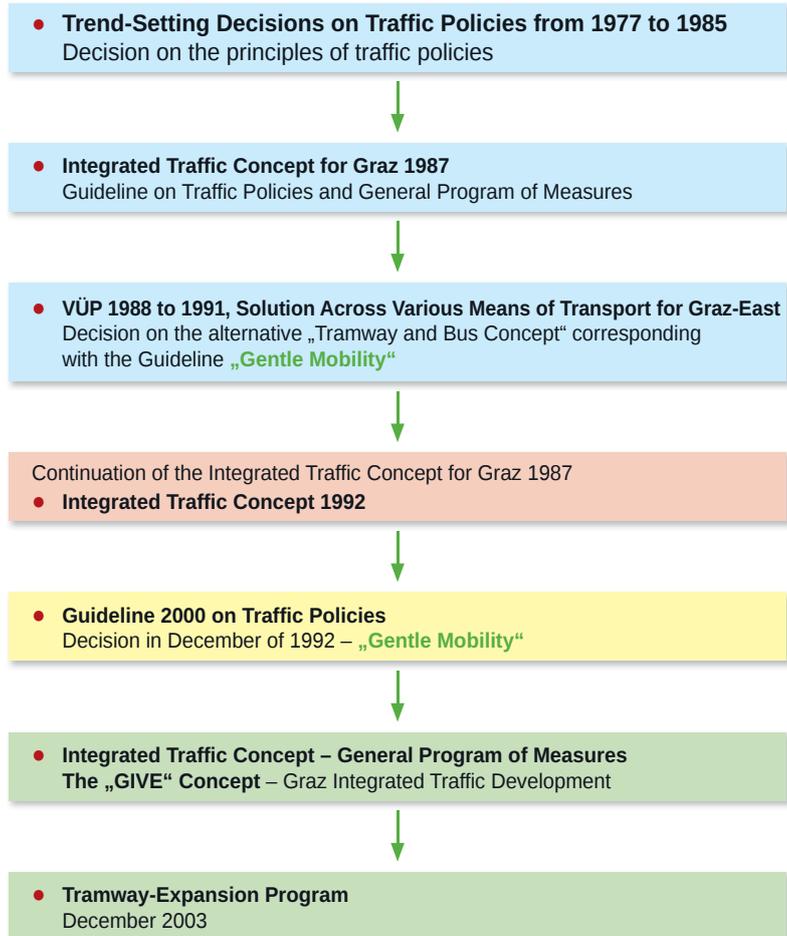
The proportion of bicycle riders and pedestrian to the total of traffic participants has to increase further. Public transportation has to expand and increase and the portion of motorized individual traffic has to be reduced further to an environmentally acceptable limit. Particular focus is put on the ecological and economical interaction and cooperation of all means of transportation and traffic.

## Citizen Participation

There is little else inhabitants of the city feel as strongly about as the consequences and effects of traffic- as everyone of us is daily confronted with them. This is why traffic policies are democracy at its best.

## Decisions on Traffic Policies of the City of Graz

Source: Department for City Development/Department for City Planning, Graz City Magistrate



The inner city of Graz has not always been a place designated for people. As late as the 1970s cars were allowed to pass through Sporgasse (right), parked on Jakominiplatz or in Schmiedgasse- all places which have become pedestrian zones by now.



And this is also the reason why the „Guidelines on Gentle Mobility“ are the result of a long public discussion among citizens, experts and politicians, which included a lot of information sharing. As a result citizen participation measures are met with a high level of acceptance as confirmed by two popular referenda conducted on the topic in July 1995.

### The „GIVE“ Concept

The next step towards „Gentle Mobility“ was an Integrated Traffic Concept – the so called Graz Integrated Traffic Development – („Grazer Integrierte Verkehrsentwicklung -GIVE“), which was decided on by the city government of Graz at the end of 1995. The implementation was to be organized according to

215 points, which had been discussed and defined by experts in the field. The GIVE Concept includes focus projects, directives for routine works and traffic political measures, which encompass the region around Graz, the Province of Styria and the Federal level.

### Traffic Organisation

In order to limit the economic-, shopping-, and commuter traffic to a „necessary“ scale, a new way of handling traffic especially in the city center is called for:

Pedestrian zones, bicycle paths or restricted speed zones have effectively improved mobility in the city. The new traffic organization works on the basis of central pedestrian zones, which are crossed by bus

and tramway lines of public transportation and bicycle routes only. Adjacent to the pedestrian zones, access roads are open to inhabitants and transporting supplies. In order to improve the difficult parking situation along the streets, several new underground parking garages with hundreds of parking places have been built in the city center over the course of the past years. Outside of this core zone the chargeable short term parking zone „blue zone“ extends up to the circular beltways, followed by the new „green parking zone“.

Exemption rules allow for affordable long- term parking possibilities for residents, whereby the commuters may get to the park & ride facilities with direct access to public transport.



# Space for People

Almost all areas of the city core are designated pedestrian zones to allow for space for people. Motorized traffic is limited to a necessary minimum.



**Walking not only is one of the most primal ways of movement of people, it also is healthy for the body and the circulatory system. Who walks sees more, can appreciate his/her environment and contributes to an intact environment.**

**T**he proportion of pedestrians among traffic participants in Graz has been decreasing continuously over the past decades and is currently at 14 %. The cause of this trend is the break-up of long-established structures: Local grocers are pushed out of the market by big shopping centers which offer large parking spaces for the customers. Urban sprawl and the increase in motorization give people the impression that they cannot do without cars anymore to get to where they need to

go. So it comes as little surprise that the proportion by pedestrians had decreased 24 % in the year 1982, from there it further decreased to still 21 % in 1991 and finally 14 % in 2004. By the way, in 1991 a percentage of 23 had still been estimated for the year 2000.

## Space for People

In the year 1986 the city of Graz set the course for the implementation of the concept of „Gentle Mobility“ for the inner city areas. The historic Old Town in the center and the historic Murvorstadt were turned into pedestrian zones, which may be used in some areas by bicycle riders, too. In the mornings this zone moreover is open to loading activities. Pedestrians may stroll through those areas without being subjected to the dangers

of road traffic- the inner city has once again become a recreational space for people and may be used for various activities. On the main square, for instance, which covers an area of 11,500 m<sup>2</sup> and which was reopened after a redesign in 2002 various activities such as Beach-Volleyball and Street-Soccer tournaments may take place. The Karmaliterplatz, which after its redesign in 2004 shines in its new splendor, is the latest addition to the pedestrian zone of the city. In winter of 2005 it was used as a ice skating rink for adults and children alike for the first time.

The Freiheitsplatz as well has been spared by some of its traffic since 2004 – part of the square has been turned from a parking area to a recreational space for the inhabitants of Graz and the visiting tourists alike.

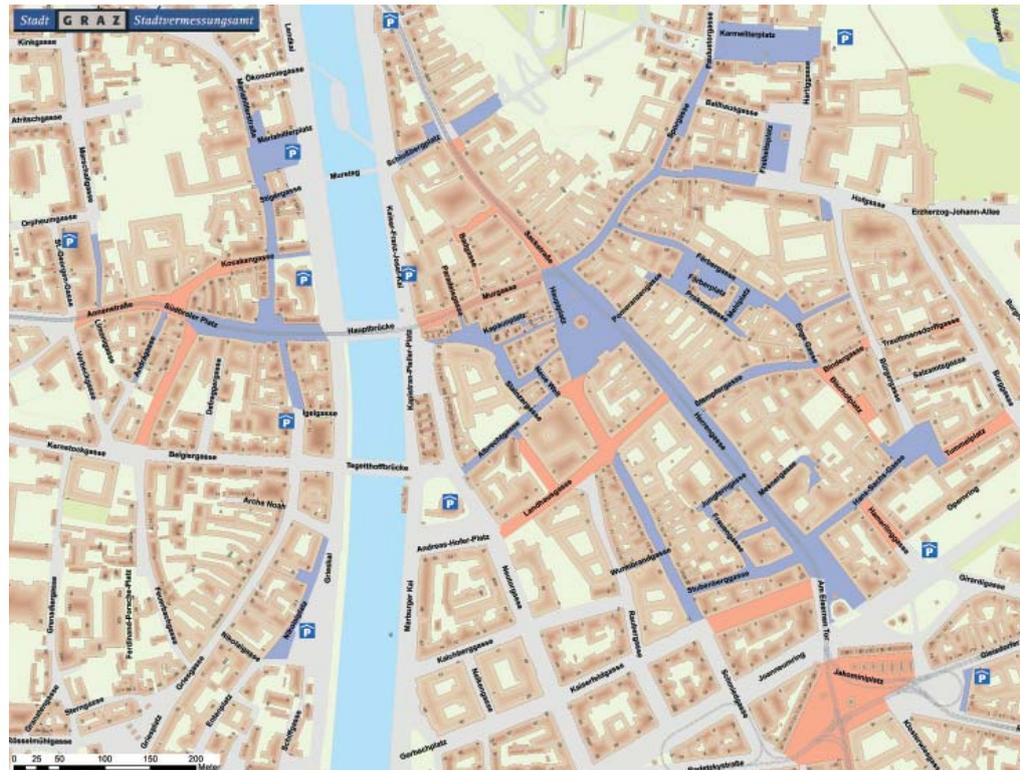
## Awards

In 1992 Graz was awarded „the most pedestrian- friendly city of Austria“. In 1993 the city won the contest of the campaign „Child Secure Road Traffic“ organized by the Austrian Road Safety Board. In 1994 Graz was once again awarded for its efforts in the frame of the campaign „Children on the Road“ organized by the Austrian Transport Clubs. And in 2005 the Austrian Road Safety Board honored Graz with the Traffic Security Award.

## Full Steam Ahead

Graz does not intent to rest on its laurels. The goal of the city is to be able to establish a comprehensive, comfortable and secure net of pedestrian zones. Especially in the outer districts of the city many measures will still be taken to ensure the protection and comfort for those on foot: Pedestrian axes are to make the different parts of the city more accessible on foot and allow for easy and fast reach of the various destinations.

This „green net“ which will also bring advantages for bicycle riders will connect all important goals, so that people may start on foot from home- and not by car. If shops, schools, child care facilities or public transportation stops are made more easily accessible for pedestrians, many car rides will become avoidable. In this way the



Adjoining to the pedestrian zone (blue) traffic – calmed areas (pink) may be found.



On Karmeliterplatz: pedestrian zone including a water fountain used as playground instead of its former use as a parking area.

quality of life in the city will increase. In addition Graz wants to offer its inhabitants and guests on foot many attractions: The Island in the river Mur which was designed for the city by the American star- architect Vito Acconci for the year 2003 in which Graz was „European Cultural Capital“, is a pedestrian zone in its own right in the center of the river. In the part designed as a amphitheater, outdoor theatre performances are staged, in the covered half of the island an attractive café looking out on the water may be found. The two halves are connected

by a small children's playground. On the left river side, next to the Mur-Island the promenade along the river Mur which was opened in 2002 starts. It leads under the Main Bridge and Tegetthof Bridge downriver up to the area of the Augarten park. The promenade with its many vantage points, benches and nice places to relax is always busy and very popular with people. Climbers are happy about the climbing wall which has been open since October 2003 and which is located along the promenade near the Mur – Island.

# A Green Net for Graz

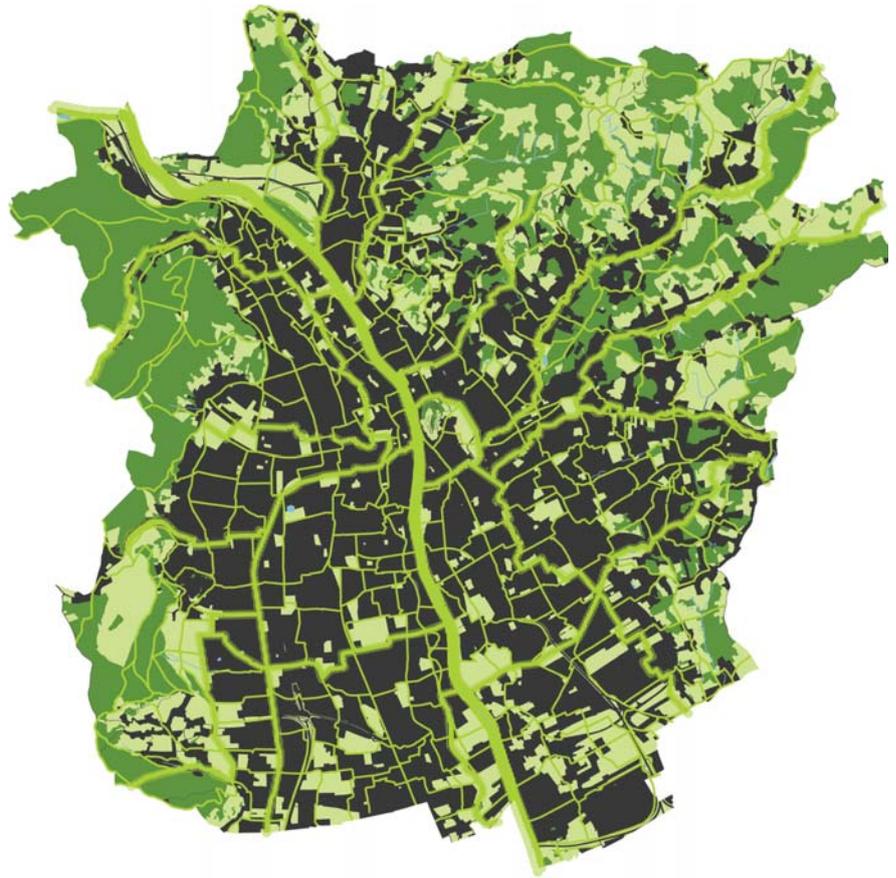
Green zones stand for a high quality of life in the city. In Graz many green zones at the same time serve as routes of gentle mobility. The „Green Net“ extends over 550 km and increases the quality of city life for bicycle riders, pedestrians, children and adults.

If you look at a satellite picture of Graz, the green face of the city becomes visible. Not only from far away, but also from a close-up perspective, Graz presents itself as a green city. Parks, tree-lined avenues, playgrounds, green courtyards and blooming gardens may be found all over the city.

The „Green Net“ connects these green zones, linking resident areas with parks, playgrounds and ultimately the woods at the city limits. The linking happens in a „green way“, by means of pathways, green foot- and bicycle paths and other lanes reserved for „Gentle Mobility“.

The „Green Net“ consists of green areas and their connections. The „Green Net“ takes into account the growth of the city. It is a commitment to the preservation of green zones even in the light of city development and the construction of new housing schemes and traffic roads. Parks, playgrounds and gardens and even individual trees are important for city ecology and the quality of life.

In order to secure the green areas accordingly, the need for their protection was stated as early as 1980 in the City Development Concept. The „Green Net“ is the logical consequence of the city development concept in this area. At the same time it is not an obligatory norm, but a dynamic system that serves city planning schemes as a basis to which the city feels committed. The long-term goal is the preservation and further development of a net bet-



ween all green areas, which allows nature to exist and to be experienced in an urban context. The „Green Net“ serves four major objectives. For one there is its traffic function. On green paths, traffic – calmed roads, along meadows or brooks people connect from their homes to the grocery store, work or the next park or playground in a recreational and healthy way. The car does not have to be used.

## Recreational and Healthy

The second objective is the recreational function. Doing sports in sport facilities, parks and playgrounds or simply spending time there is just as healthy as it is recreational. Relaxing after a tiring day is possible without taking a trip to faraway places. Thanks to the „Green Net“ it is possible to relax close by at places in easy gentle mobility reach. A further function of the net is the city ecological importance of green zones. It is

home to various wildlife and plants; it improves the air quality in Graz, influences the climate and filters air-borne pollutants. Last but not least the net has a creative and aesthetic function: Tree-lined avenues are not only beautiful to look at, they are an element of design which may give normally unattractive parts of the city a pleasant look and also makes orientation easier. The overall idea is to offer secure and recreational mobility for children and adults alike, recreation on the doorstep, green streets and resident areas and to provide clean air as well as ecological diversity within the city. In Graz this idea becomes reality.



Bicycle Route in Augarten

With the many innovative ideas Graz set for the promotion of the bicycle traffic, the city attained the reputation of being the „Bicycle Capital of Austria“. Graz continues to place a strong emphasis on the bicycle as the „gentle means of traffic“ par excellence.

**B**icycle riding is the thing to do in Graz. One look at the main square proves how popular the bicycle is in Graz: The parking places for bicycles are mostly crammed and bicycle riders mark the cityscape as much as pedestrians. No wonder; ever since its commitment to „Gentle Mobility“ the city has put much effort into the expansion of bicycle routes in Graz and has created a wide network of bicycle paths. Starting from the city center the bicycle path network spans across the city up to the outer districts and beyond into the communities surrounding Graz.

In 2008 its length was 110 km with continuous expansions in plan. The goal the city has set to achieve are 190 km of bicycle paths and routes in order to allow for the bicycle riders to move securely and fast around the city.

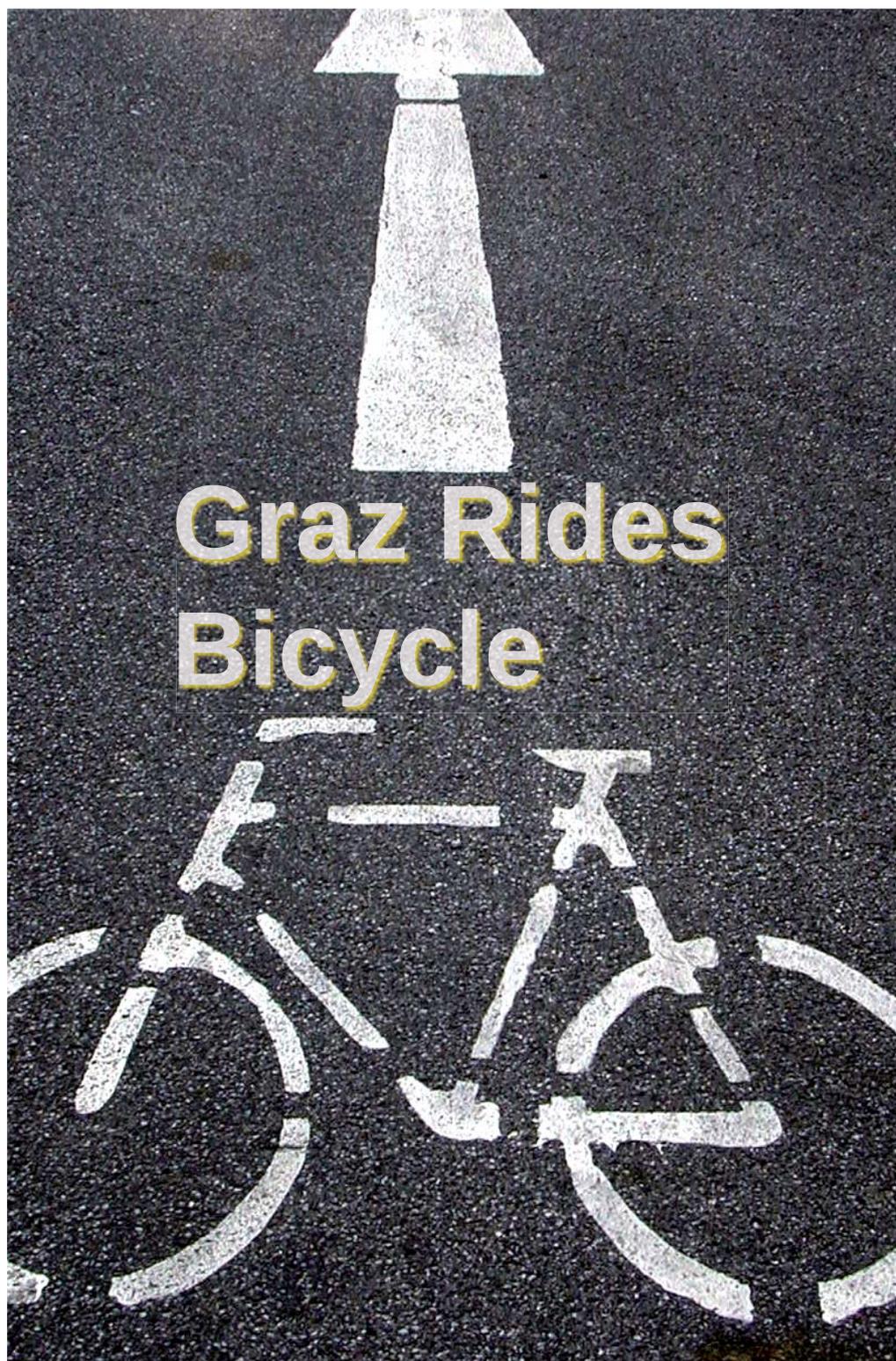
### Right of Way for Bicycle Riders

In order to increase the mobility by bicycle, the city has opened one way streets for bicycles and has granted exceptions for bicycles in traffic banned zones. Traffic areas have been designated to bicycle paths and bicycle parking areas. Where cars are stuck in traffic, bicycle riders can easily slip through.

### Velo-City 1999

In cooperation with the city of Maribor, Graz held the „Velo-City Congress“ in April 1999.

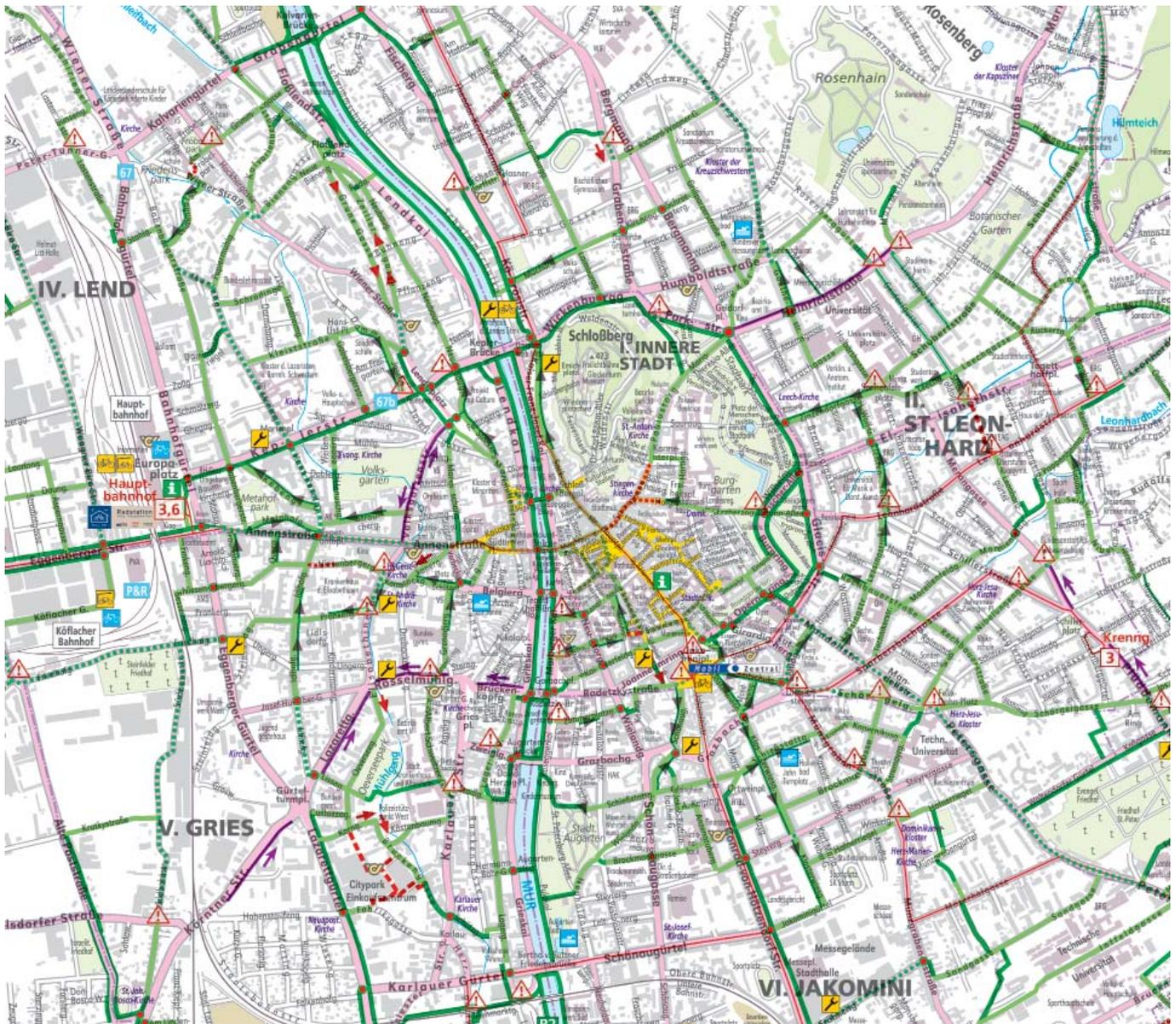
400 experts from 38 countries exchanged their expertise, knowledge and information on the topic. The congress had a sustainable effect on the city. The bicycle path along Lendkai



190 km will be the length of the Graz bicycle route network after its completion.



Model of best practice in bicycle traffic: the bicycle underpass beneath Kepler Bridge



Net of bicycle routes (110 km)

was, for instance, completed during this event.

After „Velo-City“ many connections to the „outer districts, tangential routes between the districts and routes out of the city were established. A highlight in the bicycle events of Graz was the connection to the „Alpentour“, the longest bicycle route across Austria which spans 1134 km with Graz and Vienna as its corner marks.

The staging of the Mountain-Bike-European Championship in Graz and Stattegg in the year 2003 and the „UEC Mountainbike Marathon Masters European Championship“ which took place in Graz and Stattegg from 2005 to 2007 prove once more that Graz is a stronghold and important center of bicycle riding.

### More Bicycle Riders in the City

The measures of the city are showing effect. In the year 1982 the proportion of bicycle riders was about 8 % which increased to 14 % by the year 2004. The goal set at finally 16 %. In order to achieve this goal, the city has undertaken further efforts and measures to make bicycle riding even more attractive to the inhabitants of Graz and commuters alike.

### Bicycle Station, digital Bicycle Route Map, Rent-a-Bike and Bicycle Service Unit

In December 2004 the bicycle station was opened at the main train station of Graz. As the first of its kind in Aus-

tria it offers bike & ride. To commute to the city by train and to continue from the train station to the working place by bike- no problem in Graz. A rent-a-bike facility and a bicycle service unit provide fast and easy mobility on two wheels. Those who are not familiar with Graz and want to explore the city on bicycle may make use of the online digital bicycle route map which is user- friendly. After typing in the destination of choice the map will show the best bicycle route connections to get you to your goal. The digital map also indicates points of danger, rent-a-bike.

# Right of Way for Public Transportation



**Especially in the public transportation system a lot of innovations have been achieved since the year 2000. Several tangential bus lines were established, new local traffic hubs were built, three tramway lines were prolonged. The overall aim is to make public transportation extremely attractive; to the extent of finally stopping the steady growth in the number of car drives.**

**A**s a consequence of urban sprawl and the growing number of people and vehicles in the greater area of Graz the volume of

traffic has increased drastically. Especially the traffic in cars between the surrounding communities and the city itself has reached alarming proportions – about 157.000 people come from the region to the city itself every day, of which 21.000 are using public transportation while the majority of 136.000 come by car- either driving themselves or riding with somebody. A further increase in these numbers can be expected.

The concept of „Gentle Mobility“ calls for an interception of this mass of car drives through public transportation. In 1991 the proportion of public transportation of the overall traffic situation in Graz was at 18 %. This value increased slightly to 19 % in 2005 – the objective stated in the „guidelines 2000“ to increase this value to 21 % by 2010 is in the face of the increase

in the total of car drives more relevant than ever. In order to be able to fulfill this requirement we not only have to increase the capacity of public regional transportation, but also make public transportation a more attractive offer. Graz is working hard to achieve this objective.

## **Attractive Public Transportation**

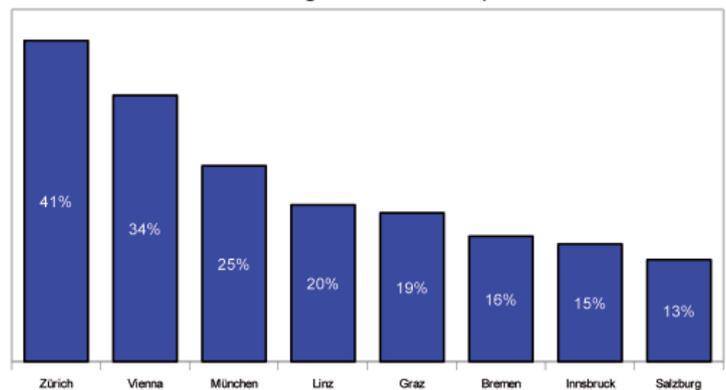
In The city of Graz, the Province of Styria and the Federal ministries have spent millions of Euro on investments in the public transportation system: In March 2001 the first of 18 new „City Runners“ was launched. The highly modern and comfortable low-floor tramway type has proved successful , more tramways of the type Variotram follow from 2009 to 2012.



Public transportation in Graz could not do without the tramway. More than 52 Million passengers are riding it per year.



Percentage of Public Transport



In the frame of the construction of the Koralm Railway two new local traffic hubs have been built along the Southern Railway in Puntigam und Don Bosco. Here commuters can connect to bus and/or tramway lines directly and in this way comfortably reach their destinations in the city. On February 1, 1999 the first tangential line, the „route 62“ was launched. It runs through six districts in the West of Graz. In the year 2000 „route 64“ followed to service the southern districts of the city. The city presently has an extensive tangential lines net comprising of the bus lines no. 41, 50, 52, 58, 62, 63 and 64. In order to provide the „night owls“ with an alternative to the car, seven night bus lines which securely carry their passengers home during the late hours have been established since January 2003. At the last stop a taxi is waiting which carries the passenger since 1997 from the

bus stop right up to their door step. In addition the busses of the Graz Public Transportation Company – GVB are role models as far as the environment is concerned. Already in 1994 the city initiated the project Ecodrive which aims at replacing diesel fuel by bio diesel derived from old food oil. Today all busses are fuelled with Biodiesel only. Furthermore all buses have been equipped with particle filters for the reduction of fine dust by the end of the year 2006.

### More Tramway

In 1999 the electric tramway in Graz celebrated its 100th anniversary. Today it is the foundation of a well functioning public transportation system. The tramways run a total of 11.6 million km per year on an integrated network of 286 km in the city and carry

up to 314.000 passengers per day! In order to be more attractive still, the tramway network was prolonged by about four km between 2005 and the end of 2007. Tramway line no. 6 now leads up to Peterstal and offers an attractive alternative to the car in its catchment area for roughly 12,000 inhabitants. Line no. 4 was prolonged by 1,3 km and now runs all the way to the shopping center Murpark, where a park & ride – facility has been installed. In this way commuting, connecting lines and shopping are combined perfectly. Line no. 5 now turns at the local – traffic hub Puntigam, which has started operations jointly with the launching of the prolonged tram line no. 5 in 2006. There commuters can easily connect from train to bus or tramway. Residents and passengers alike appreciate the noise – insulating and vibration – free substructures.

## Transport Association (Verkehrsverbund)

On February 28, 1994 the Traffic Association Styria was initiated. The Traffic Association is a cooperation network of 63 Styrian transportation companies (as of 2008). Styria is divided in zones. In this way with one transport association ticket (Verbundticket) several zones can be crossed, a unitary system for 1,2 million Styrians. Already in its first year after the launching of the new system the number of passengers using public transport increased by 16 %. More than 70 million passengers yearly (excluding pupils' rides!) use the Styrian transport association lines by now, of which 55 Million are using them in Graz and its surroundings, the pupils are not yet counted in those figures. Including pupils the Graz lines alone transport more than 100 million passengers a year! The Traffic Association Styria actively cooperates in the concept of „Steirertakt“ – starting in 1996 the railroad traffic in the Graz region and its environment (train stations and stops) has consistently been made more attractive. The goal is a suburban railway for the Graz region- the alternative for commuters consistent with the con-

cept of „Gentle Mobility“. The Desiro – low-floor – railcars of the Austrian Railway Services – ÖBB, which have been connecting Graz and the region since 2004 are a good and comfortable example how the railway can become the more attractive alternative to the street. The suburban railway was launched on December 12, 2007 with 71 new railway connections to Graz. The financing of the transport association system in the Graz region are shared between the federal government (33,33 %), the province of Styria (42,43 %) and the city of Graz (24,24 %). Because of the fact that the communities surrounding Graz contribute practically nothing towards the transport association lines, although the lines run through the very communities efforts are being made to establish a fairer funding key.

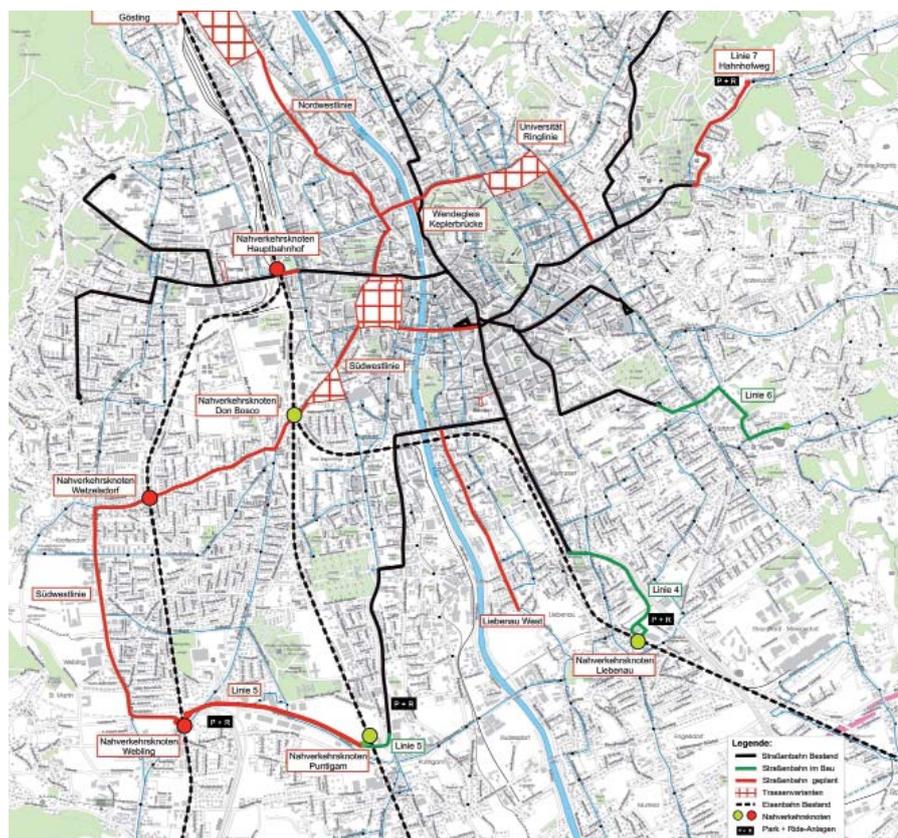
## A Better Way of Travelling Abroad

Commuters who have to cover great distances can't help but use the railway services. And this is why the Austrian railway Services, the city, province and the federal government are setting vital accents in order to upgrade the railway services. The central train station in Graz was reconstructed from July 2001 to Mar-

ch 2003 in such an attractive way that it was voted „most beautiful train station of Austria“ by passengers. Up to today a huge painting, which was completed in the frame of „Graz European Cultural Capital 2003“ decorates the ceiling evoking a unique ambience in the central entrance hall. Already during the time of the reconstruction the transformation of the Southern Railway Line to a high-performance line. After the completion the distance between Graz and Klagenfurt will be covered in less than one hour. In addition the railway line will be extended to the airport Thalerhof and will be connected to it underground, whereby the passengers are offered a comfortable and easy connection to the center. This construction site has been in progress since 2004 while the Koralm- Tunnel-Project is being undertaken in the time frame from 2008 to 2016.

## Railroads instead of Roads

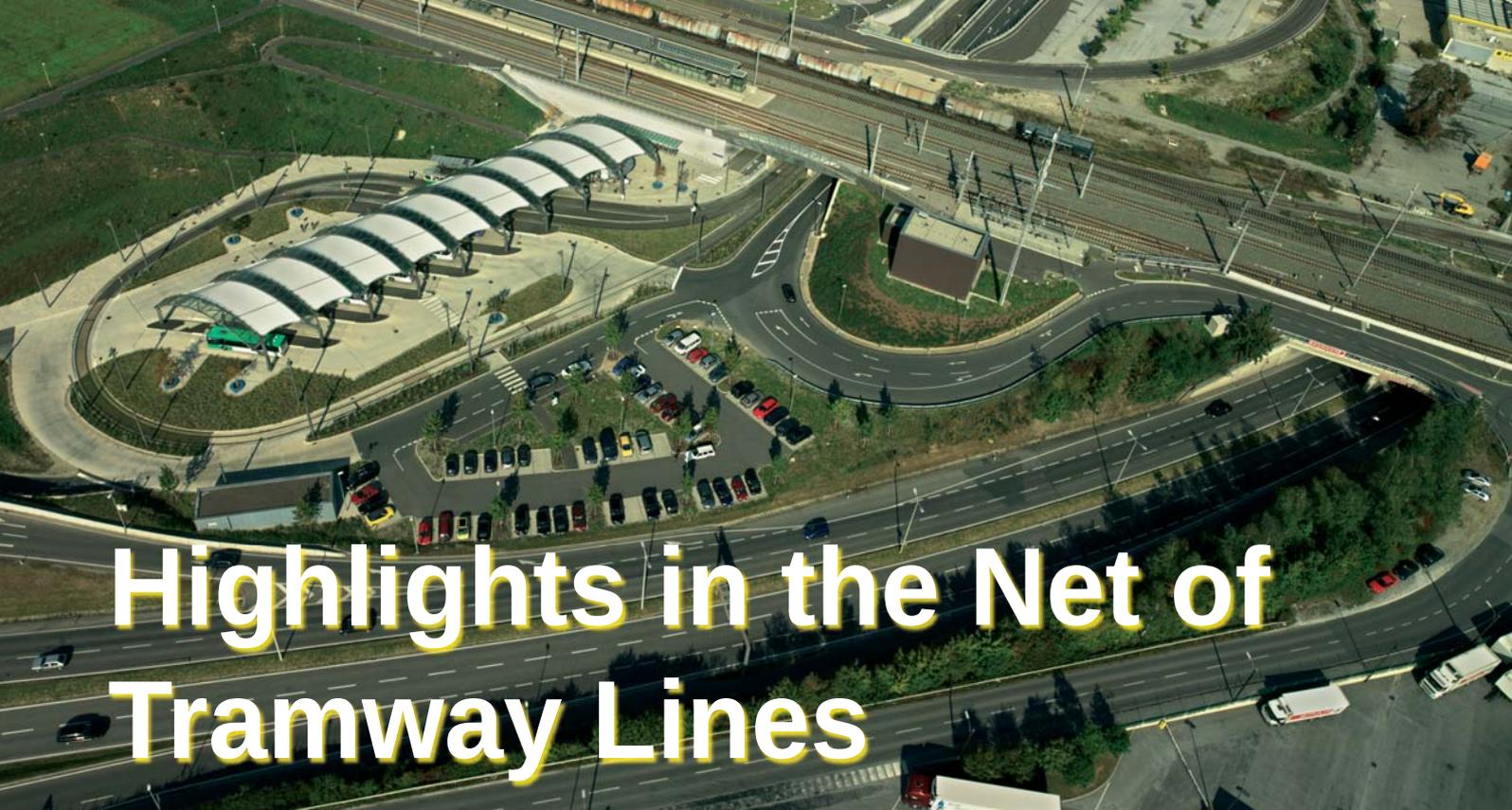
In June 2003 construction on the freight terminal Werndorf was completed. In an area of 500,000m<sup>2</sup> freight traffic is transferred from road to rail. This service helps to decrease truck traffic in the city of Graz and in this way contributes to environmental protection.



Plan net extension tramway lines



Dynamic passenger information



# Highlights in the Net of Tramway Lines

The local-traffic hub Puntigam connects tramway-, railway-, bus services, car- and bicycle traffic.

**Three tramway lines were lengthened between 2005 and 2007. In this way the total length of the net of tramway lines in Graz was extended by 3,5 km. Commuters, car drivers and bicycle riders as well as shoppers benefit from this improvement.**

Many improvements were made in public transportation in the period from 2005 to 2007-even more improvements than in 1986 when the tramway line was lengthened from Alt-Eggenberg to the Accident Hospital. The net of tramway lines in Graz was extended by 3,5 km. Bicycle riders, car drivers as well as pedestrians benefit from these tramway lines extensions.

## Local-Traffic Hub

How does it work? For instance through the upgrading of the Koralm Railway to a high- performance railway leading south from Graz Central Railway Station, seven new underpasses were built. In this way cars are no longer subjected to long waiting periods in front of railway gates. Pedestrians, bicycle riders and the car traffic now passes more easily from

East to West. Thanks to the building of the new Koralm Railway the tramway line no. 5 was lengthened passing through one of the underpasses to the new local-traffic hub built at Puntigam, an innovation which began construction in December 2006. The local-traffic hub in Puntigam is an attractive connecting service between the railway, tramway, bus, bicycle and the car.

## Connecting Lines and Shopping

For commuters and for those who are going shopping the tramway line no. 4 was lengthened by about 1,3 km now leading up to the shopping center Murpark in the district of Liebenau. There people can park their car in the new park & ride facility and connect to public transportation and/or go shopping in one of the 80 shops located in the shopping center Murpark. At night those 2.000 parking places of the shopping center also serve as park & ride places for guests of events in the City Hall (Stadthalle) or in the inner city.

## Line Extensions for the Residents of Graz

Not for commuters but for residents of Graz, the tramway line no. 6 was

lengthened from the former last stop Schulzentrum to Peterstal. The line extension was constructed in a special low-vibration, „typical for Graz“ way. Since November 2007 line no. 6 has been lengthened by 1,8 km and now leads up to the Wienerberger residential community through Petersgasse, Eisteichgasse, Breitenweg and Peterstalstraße. Roughly 12.000 people live in this catchment area and benefit from the lengthened tramway line no. 6.

The city of Graz, the province of Styria, the federal government, the company HL-AG and other project participants dug deep in their pockets in order to help out and promote the public transportation system in Graz. The extension of line no. 6 cost 21,4 million Euro. Line no. 4 cost 10,4 million Euro. Line no. 5 including the local-traffic hub cost 15,5 million Euro.

## Faster Transportation

In order to allow for faster transportation by tramway and bus, the city has installed more bus and tramway lanes. In addition, the light phases of traffic lights were set to correspond to the schedules for bus and tramway as a measure to increase the speed of public transportation.

# Speed 30/50 in Graz

Since the introduction of the tempo 30 zone in the year 1992, the number of accidents has decreased and the quality of life has greatly improved because of the reduction in noise and exhaust emissions.

The road network in Graz is 996 km long, (not including highways inside the city limits). 802 km of the total are designated tempo 30 zones. Only priority roads are tempo 50 zones.

The introduction of the extensive tempo 30 zones proved to be the step most fiercely challenged on the way towards „Gentle Mobility“ – and at the same time the most effective. This „deceleration“ policy increased the quality of life in Graz and the traffic security situation enormously. In front of schools the risk of accidents was decreased by the tempo 30 zones. The

risk of having a fatal accident has even decreased by 90 %!

## Fewer Injuries

Today the tempo 30 zone is met with a high level of acceptance – the latest extension by 23 km (on 40 streets) at the end of 2003 was highly welcomed. Currently 80 % of all roads in Graz are designated tempo 30 zones. On the remaining 20 % – main and priority roads – 80 % of all traffic accidents in Graz happen. This improvement of the traffic situation, which is internationally regarded as a positive innovation, was made after a pilot phase between September 1992 and August 1994, which showed positive results: With the introduction of the zone the numbers of accidents reduced by 24 %; in this way about 250 people were spared from being injured in traffic accidents per year!

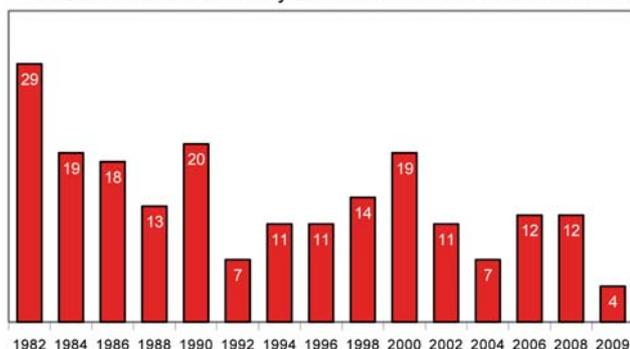
In addition the noise level and the exhaust emissions reduced noticeably

in the zone. The emissions of nitrogen oxides (NOx) could be reduced by 24 % within the test zone and by 2 % throughout the city. The subjectively perceived noise exposure of residents next to formerly busy roads decreased noticeably.

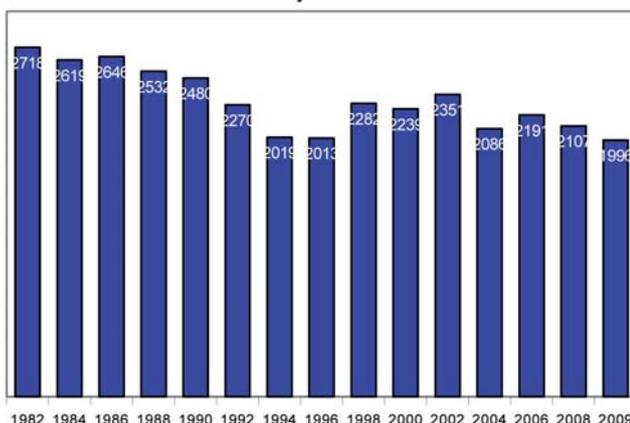
## More Traffic Security

The speed level decreased at first probably because of the constant speed controls. But as an increase in the speed level has been observed in recent years, private speed controls have been encouraged and supported in the zone since 2006, in order to further improve the traffic security. The initial rejection of the zone – in 1992 only one out of three car drivers supported it – gave way to a wide approval. In 1994 two out of three people were already in favor of the zone and today it has long proved its worth and is no longer a topic of discussion.

Fatal Accidents Caused By Individual Motor Car Traffic in Graz



Non-Letal Accidents Caused By Individual Motor Car Traffic in Graz



Since 1992 tempo 50 only on main roads



The limited parking zone in the city offers 13.000 parking places. Environmentally-friendly vehicles park at reduced rates.

# Parking in Graz

**The concept of parking facility management has proven to be an effective instrument for the management of motor vehicle traffic. The goal remains to effectively shift commuter flows to public transportation.**

A city has to be accessible; a city needs parking spaces. This is why the city of Graz aimed at facilitating shopping traffic and promoting business traffic. At the same time it is problematic for all cities to guarantee a sufficient amount of parking spaces for all inhabitants, shoppers and commuters. In the sense of „Gentle Mobility“ the main goal was to shift the massive commuter flows to public transportation. The space gained was to be designated to bicycle riders, joggers, pedestrians and playing children

## The Blue Zone

This concept worked out thanks to the proactive parking facility management and parking facility policies. In 1995 there were 12.500 parking

spaces available within the beltway limits – 8000 of which were transformed to the so called „Blue Zone“ with a maximum length of parking of three hours. Ever since the last extension of the Blue Zone in 2005 the city manages more than 13.000 parking spaces, which require a parking ticket at the cost of 1,2 Euro per hour and a maximum parking limit of 3 hours at a time on weekdays between 9AM and 8PM (9AM to 1PM on Saturdays).

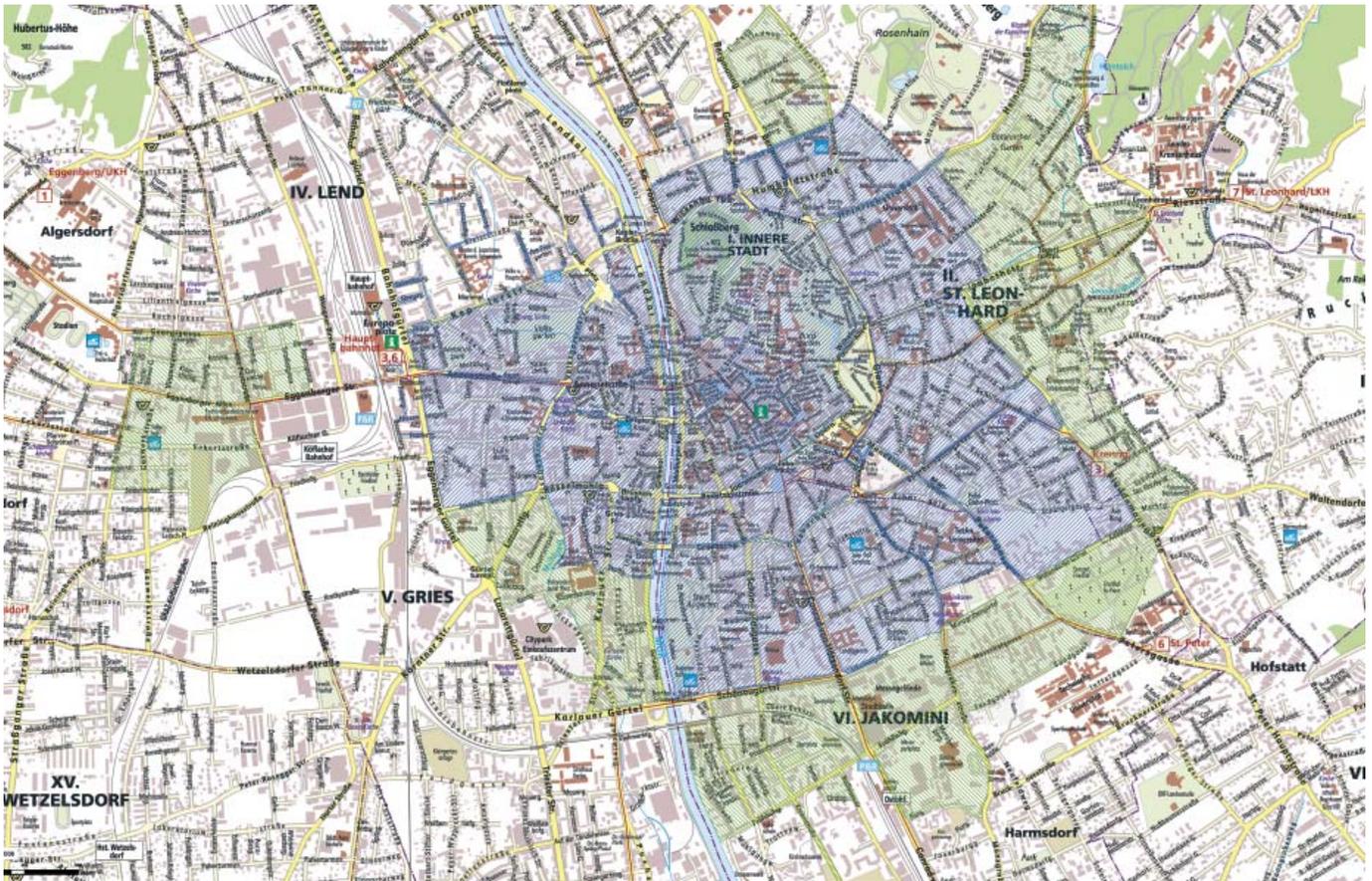
The Blue Zone extends to the beltway streets, a distance which gently forces commuters to make use of park & ride facilities – or of public transportation for their way to and from work.

Inhabitants of Graz may purchase a residents'-parking ticket, which permits them long-term parking within the Blue Zone. Since the extension of the Blue Zone and the introduction of residents'-ticket, the complaints about a lack of parking opportunities for residents have mostly stopped. A special lower rate („ecological parking“) is charged for environmentally friendly vehicles, which correspond to the Euro – IV – Exhaust Emission Standard and have low levels of CO<sub>2</sub>-emissions. These vehicles can be

parked for 40 instead of normally 80 Cents per half hour. In the length of parking the city sends a signal of tolerance rather than strict punishment: Only those who are late and exceed their parking period by more than 13 minutes get a fine.

## The Green Zone

„Parking Facility Management is the only effective means to convince people to change“, stated former Vice Mayor Erich Edegger. He introduced the Blue Zone which was the forerunner of „Gentle Mobility.“ In 2006 the „Green Zone“, a further parking zone surrounding the Blue Zone, was introduced under the city councilor of Traffic, Gerhard Rüschi. The Green Zone aims at stopping the commuter cars which cause major traffic problems at the city limits in Graz and to take the parking pressure off the residential areas. The Green Zones offered 8.000 parking spaces when it was initiated in the summer of 2006. Parking in the Green Zone costs 40 Cent per half hour. To park all day costs 5 Euro, whereby commuters may purchase a



The lower priced Green Zone connects to the Blue Zone in the city center.

monthly ticket of 34 Euro and a yearly ticket is offered for 324 Euro. Residents only pay four Euro a month for a parking place inside the Green Zone, which is then secured for them. The Green Zone really is an alternative model to the city toll, which is implemented in London or, for instance, Stockholm to control the traffic volume. Graz does not want to ban traffic from the city, but a system with parking tariffs graduated by price aims at promoting public transportation and making it more attractive to connect to this means of Gentle Mobility. The profit from the Blue and Green Zones is spent on further measures in traffic policies.

## Parking Garages

In order not to negatively affect the shopping traffic, many underground parking garages were built offering hundreds of additional parking spaces to those who shop in the inner city. Underneath the Museum of Contemporary Art (Kunsthaus) and Nikolaiplatz, since 2004 underneath the department store Kastner & Öhler

and below Karmeliterplatz (the garage called Pfauengarten) one can leave the car right in the center of the city and go shopping or enjoy the cultural highlights of Graz. The shortage of parking spaces in the inner city, which was discussed and received complaints in the late 1990s has in this way finally been eliminated. The parking garage Pfauengarten offers parking at a reasonable cost with parking tickets at an hourly rate of 2,2 Euro during the daytime. The construction of the parking garage had the effect that cars in that area no longer have to park on Freiheitsplatz and Karmeliterplatz and as a consequence these two squares could be transformed pedestrian – friendly. The entire Karmeliterplatz has become a pedestrian zone; children are happy with the water fountain in which they are allowed to splash and play. On Freiheitsplatz the cafés now offer inviting outside sitting areas.

## Park & Ride

To take away parking possibilities from commuters without offering

them an alternative would not have been fair. Instead Graz came to the conclusion that the best alternative would be to establish park & ride facilities, where commuters can easily and comfortably connect from car to public transportation in order to get to their working place in the city. Several projects have been realized already, as for instance the park & ride facility in Andritz, the parking garage near the company Magna Steyr in Liebenau and the park & ride facility on Sternäckerweg which started operations with the lengthening of the tramway line no. 4 in March 2007. The park & ride facility at the local traffic hub in Puntigam was completed in 2008 and more are to come in Graz-Webling and in Mariatrost at the east access road to Graz. In order to win the acceptance of the users, the city offers tickets for the park & ride facilities at attractive rates. The monthly ticket for the park & ride facility at Sternäckerweg, for instance, costs 53 Euro – including the monthly ticket for Public Transportation. This is only 16,9 Euro more than the cost for a monthly ticket for public transport alone!

# Graz sets Trends



Complete info on the schedule



Door-to-door information at Mobil Zentral



The footbridge E. Steininger-Steg is the longest bridge in Graz.

Since the year 2002 Graz has been a partner in the biggest EU-program on facilitating and promoting innovative traffic measure: „CIVITAS Trendsetter Graz“ sets new trends in traffic policies and prolongs the success story of the concept „gentle Mobility“.

An impressive total of 17 projects in traffic policies were realized in Graz in the time frame of the EU-project „CIVITAS Trendsetter“. Together with the project partners Stockholm, Lille, Pecs and Prague, Graz was awarded the project as one of eight winners in the CVITAS-Project Call of the European Commission. The project started in 2002 and was designed for a period of four years.

During this time a total of 12 million Euro was spent on new innovative strategies for a more environment-friendly and more efficient urban traffic concept. Of this sum 4,2 million Euro were EU-funded. The result: The project „Trendsetter“ actually set new trends in all areas of the traffic situation.

## Innovations in Public Transportation

The highest investments were made in public transportation. The introduction of the night busses in 2003 would not have been possible without „Trendsetter“. Currently seven lines successfully run through the nights in Graz and meanwhile transport up to 100.000 passengers per year. In order to avoid the tiresome waiting at the bus stops, a new electronic information system was installed which informs the passengers of the schedule and tells them in how many minutes the next bus tramway line will arrive. In addition adaptations at bus and tramway stops were made to make them wheelchair-accessible, barrier-free

transportation at its best. Another innovative improvement for passengers is the electronic control system which coordinates the positions of busses and tramways through a control center. It helps to reduce the chance that passengers miss their connecting bus or tramway by seconds to a minimum.

Information on the schedule and on all questions concerning „Gentle Mobility“ can be obtained at the mobility center in Jakominastraße which was opened in 2004 and is also recognized as part of the „Trendsetter“ program. Those who have no time to go there can make use of the „Bus-Train-Tram Information“ (BusBahnBim), the online electronic information service on the schedule of the Transport Association Lines. The „Bus-Train-Tram Information“ provides all schedules of the tramway lines in Graz, the schedules of all regional bus lines in Styria, and of the Austrian and international railway services. In addition, the „Door-to-Door-Information“ navigation service shows the best possible route from a given point A to a destination B within the city limits of Graz. This can be found at [www.busbahnbim.at](http://www.busbahnbim.at)

It is no longer necessary to know the name of the respective bus or tram stop, one can enter a street name or other points of orientation such as names of hotels, churches, tourist sites or event locations. At the end of 2005 the electronic „Bus-Train-Tram Information“ planned about 15.000 routes per day.

## More Space for People

Pedestrians profited from „Trendsetter“, too. The reconstruction of the upper Neutorgasse, which was planned taking into account the results of a citizen participation process, was also implemented in the time frame of this EU-project. The street is now traffic-calmed, was given an „entrance portal“ and ends in an enlarged square for people.

Even more space for people can be found on Karmeliterplatz which in May 2005 became the latest designated pedestrian zone of Graz.

The newly designed pedestrian zone offers a water fountain in which children are allowed to play, benches to relax on and some trees. The close-by Freiheitsplatz (Liberty Square) today lives up to its name: during its re-design parking spaces had to give way to people. Ten Field Maple trees, benches and a water fountain create a tranquil and reflective atmosphere on Freiheitsplatz.

### More Comfort for Bicycle Riders

Bicycle Riding has long been a tradition in Graz and is extremely popular not only because of its health – promoting aspects, but also because of the fact that bicycle riding is environmentally-friendly. The project „Trendsetter“ has invested in further innovations for this means of „Gentle Mobility“ in Graz. The „Digital Bicycle Map of Graz“ provides information on the best bicycle route from A to B with the least traffic to be expected. Right after its opening the „Elise-Steininger-Steg“ underpass beneath Kepler Bridge could be found on the digital

bicycle map. (The new underpass is a long expected close of the gap in the bicycle path along the river Mur (Murradweg) as well as a commitment to environment friendly politics.)

„Trendsetter“ also explored the mobility behavior in general and promoted mobility projects in companies in Graz which aimed at a change of its employees from car to bicycle use. Information sessions, fitness campaigns, bicycle events and sweepstakes helped to reduce the proportion of those driving their cars to work by 15 % among participating companies.

And in order for the little ones to learn how to ride a bike and feel secure on it, „Trendsetter“ made it possible for bicycle training to be offered in all primary schools in 2004. Ever since it has become part of the standard program offered for our young pupils.

### A Healthier Environment

Thanks to „Trendsetter“ apart from the city buses most of the taxis in Graz by now run on Biodiesel, too. The fuel derived from old oil is – because no fossil resources are used – almost environmentally neutral as far as the exhaust emissions are concerned. Furthermore Graz introduced



More traffic security because of tempo 30



Less CO<sub>2</sub>: Good for young and old



Project Ecodrive (Ökodrive): GVB-busses and taxis in Graz are fuelled with Biodiesel made from old oil and are, therefore, CO<sub>2</sub>-neutral and more environmental- friendly.

the system of „Ecological Parking“: The „Ecological Chip“ environment-friendly vehicles which have low levels of CO<sub>2</sub>-emissions pay 30 % less for parking in the Blue Zone. For more security on the roads the city has installed speed measuring instruments in the frame of „Trendsetter“ which inform car drivers in the tempo 30 zone on their actual speed.

The introduction of the speed measuring instruments alone caused a reduction in the average speed level of 5km/ hour, the highest speeds even reduced by 20 %-„gentle awareness raising“.

### „Green Fleets“

Because of the successful participation in the first EU- projects on the topic of traffic, the city continues to take part in traffic related EU- programs. The follow- up of Civitas Trendsetter is called „SUGRE-Sustainable Green Fleets“. The project aims at making urban public transportation environment- friendly. As started in Trendsetter, the project Ökodrive (Ecodrive) with its partners the company Graz AG (Grazer Stadtwerke- Public Utility Services) and the connected Graz City Transport (GVB) will be continu-

ed. Ökodrive stands for low- level-emission – or even zero – emission vehicles including the infrastructure necessary for their operation. At the same time through its participation in SUGRE, the city strengthens its position as a know-how leader in gentle and environment – friendly mobility. In this case 21 European cities benefit from the expertise of the city of Graz. In October 2005 the EU-Project PIMMS started. PIMMS stands for „Partner Initiatives for the Development of Mobility Management“. The main topic was to find out how mobility management can be implemented in a stronger and more effective way in regional transportation and environment- friendly policies. Mobility management is understood as a demand-oriented approach with the objective of facilitating environment-friendly mobility.

Graz, Bromley (UK), Stockholm (Sweden), Serres (Greece), Terrassa (Spain), Treviso (Italy), Almada (Poland) and Frankfurt (Germany) are the partner cities in the PIMMS-project. In the framework of the project the partner cities carried out travel management and awareness raising activities for the choice of means of transportation, offered mobility education in schools and promoted regional networking in mobility ma-

agement. The project turned out to be profitable for all partners involved: Every Euro spent on „Gentle Mobility“ measures such as the promotion of public transportation or bicycle traffic yields a profit of 10 Euro through a reduced traffic – and environmental burden!



### More Bicycle Riders and Pedestrians

In February 2006 the ASTUTE-Project of the EU-Commission started. It has an ambitious goal: to raise the proportion of bicycle riders and pedestrians in the traffic situation by 10 % at the same time reducing the CO<sub>2</sub> emissions by equally 10 %. Partner cities of Graz in ASTUTE were Budapest (Hungary), Dublin (Ireland), Granada (Spain), London (UK) und Syrakus (Greece). A survey conducted by the British government served as the



„Green“ bus fleets thanks to EU- projects



Awareness raising for more bicycle riders in Graz proves successful: A full parking place in front of Graz Central Railway Station.

basis for the project. The survey concluded that through improvements by mobility management, urban traffic would be reduced by up to 21 % during peak periods. At the same time walking and bicycle riding are the healthiest and most sustainable means of movement (in the sense of less CO<sub>2</sub>- emissions). The ASTUTE-project lasted until January 2009. The aim was to by then have significantly raised the acceptance of walking and bicycle riding in the participating cities, to have increased the proportion of pedestrians and bicycle riders in relation to the start of the project and to have decreased CO<sub>2</sub> – emissions.

Intelligent Energy  Europe

In addition, the support of companies, which clearly benefit from tailor-made mobility concepts, was an expected result.

## Less Fine Dust

The limits for fine dust (PM<sub>10</sub>) are massively exceeded on more than the EU-law acceptable 35 days in the winter half of the year in the cities Klagenfurt, Graz and Bolzano.

Research has found out that traffic is responsible for at least two thirds of the fine dust pollution – from exhausts and non – exhaust sources such as abrasion of tires, of brakes, road surfaces and the generation of fugitive dust. A further cause is domestic coal, while the proportion of the industry is negligible. The EU-LIFE project KAPA GS (the Anti-PM<sub>10</sub>-action program of Klagenfurt in cooperation with Graz and South Tyrol) is all about setting various measures based on the polluter's responsibility principle. While the partner city of Bolzano focuses on traffic bans during fine dust peak days to bring relief, Graz aims at reducing motorized individual traffic. The Graz approach does not place emphasis on traffic bans, but rather on making public transportation more attractive, optimizing street-cleaning as well as improved winter road maintenance.

Domestic coal is to be replaced by sustainable methods of heating such as subsidized district- central-heating-connections. An integrated air-quality measurement network and a mathematical model in real operation support the efforts of the participating cities against the fine dust particles

## Prize-Worthy

The commitment is paying off. Graz was awarded „CIVITAS City of the year 2008“ – for its long lasting exemplary efforts for innovative solutions for a cleaner City traffic.

## EU-Programs in Graz

Traffic programs of the EU have been welcomed in Graz ever since.

From 2002 to 2006 the Mobility Center, a modern schedule information service, and barrier-free bus stops were established in the frame of the CIVITAS „Trendsetter“ project. Furthermore, 100% of the bus fleet of the Graz public transportation company GVB changed to the use of Biodiesel as fuel. In October 2005 PIMMS started, which focused on a change of views in the mobility behavior.

The ASTUTE project targeted a reduction of the CO<sub>2</sub> emissions in Graz – through an increase in the proportion of bicycle riders and pedestrians in the traffic situation.



The local- traffic hub Don Bosco makes connecting to bus, tramway and railway services attractive– every car less helps to reduce fine dust.

# Data of Graz and it's Traffic

Area	127,6 km <sup>2</sup>	
<b>Inhabitants**</b>	<b>about 310.000</b>	
• thereof Principal Residents*	257.898	
• thereof Women	133.899	
• thereof Men	123.999	
Households	105.826	
Employees	183.393	
Companies	10.692	
<b>Individual Transport*</b>		
Commuters	about 136.000 with more than 100.000 Pkw	
Vehicles	146.923	
• thereof Cars	117.206	
Persons per Car	1,22	
Cars/1.000 Inhabitants	473	
<b>Road Network</b>	<b>1.100 km</b>	
• thereof Streets with Right of Way	194 km	
Traffic Lights	268	
Computer Controlled Traffic Lights	168	
Parking Sites within Limited Parking Area	21.800	
Parking Sites in Underground Garages	10.500	
Net of Bicycle Routes	> 110 km	
Pedestrian Areas	53.000 m <sup>2</sup>	
Parking Sites within the „Blue Zone“	Blue Zone: 14.300	
Parking Sites within the „Green Zone“	Green Zone: 7.500	
<b>Public Transportation*</b>		
Net of Tramway Routes	49 km	
Net of Bus Routes	343 km	
Number of Tramway Lines	8	
Number of Bus Lines	37	
Kilometers per Year (Public Transportation)	11,4 Millionen	
Transported Persons per Year	98,2 Millionen	
• thereof with Tramway	52,3 Millionen	
Amount of Fare Dodgers	4,3 %	
<b>Modal Split*</b>		
Car Drivers	35,7 %	
Car Passengers	9,5 %	
Public Transportation	19,9 %	
Cyclists	16,1 %	
Pedestrians	18,8 %	
<b>Transport Safety*</b>	<b>2008</b>	<b>2009</b>
Accidents with Persons Injured	2.107	1.996
Persons Hurt in Road Traffic	2.592	2.405
Persons Killed in Road Traffic	12	4
Accidents with Pedestrians Involved	280	224
Accidents with Cyclists Involved	442	434



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