STUÎGART

Scripts by the Office for Environmental Protection - No. 1/2009

Environmental aspects in spatial planning in Stuttgart





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Environmental aspects in spatial planning in Stuttgart

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Preface



Matthias Hahn

Deputy Mayor for Urban Development and Environmental Protection of the City of Stuttgart



Joachim von Zimmermann

Head of the Office for Environmental Protection of the City of Stuttgart

The environment and its protection play a major role in all planning procedures. Environmental concerns are to be presented thoroughly in every spatial planning process and become an important part in the weighing process. Some 20 years ago, two sheets of paper presented to the City Council were a sufficient representation of the investigation of environmental aspects. Today, however, it is not rare that the environmental report is lengthier than the legally binding land-use plan itself.

Although the consideration of environmental aspects takes a considerable amount of additional time, we cannot do without as the consideration of different levels and influencing factors is necessary for an organized urban development and the prevention of negative tendencies and conflicts of interests and uses.

The more complex the procedures are, the more important it is to keep them as transparent as possible. The present publication is focused on environmental aspects relevant for planning, which must be considered as planning factors. These have an influence on city planning within the meaning of the precautionary principle. This script does not want to give a comprehensive presentation of the Office for Environmental Protection and its tasks and activities. It only outlines those areas of activity which are significant in planning processes. This publication concentrates on environmental protection data allowing for statements related to certain areas and which are therefore particularly appropriate for being used as planning aids.

These planning aids do not only concern the establishing of the representation of uses within preparatory landuse plans or legally binding land-use plan designations. They particularly help to draw up the required justifications as well as carry out environmental impact assessments and environmental reports as independent parts of a local development plan. This shows how the present script connects to the systematic representation of an environmental atlas, which, however, does not yet exist for Stuttgart. But efforts in this direction will certainly be encouraged this way. What this script finally wants to support is the targets of the Environmental Information Act from 22 December 2004, free access to any kind of information on the environment and the distribution of this information.

Worked up and refined environmental information is the basis for our inhabitants' right to participate appropriately. The participation of the public in combination with the weighing carried out by local decision makers play an important role especially in urban land-use planning.

Matthias Hahn Deputy Mayor

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Joachim von Zimmermann City director

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Introduction

Urban land-use planning is a municipality's main duty. In fact, municipalities have a significant scope for sorting out details. The legally binding land-use plan established by a municipality on the basis of a preparatory land-use plan is a binding means to decide whether land is used in an environment-friendly way and in accordance with environmental protection targets. German planning legislation in its complexity with numerous spatial planning levels helps to ensure the precautionary planning of environmental protection measures through the methods of regional and urban development and minimize all kinds of pollution resulting from the use of areas.

In this context, environmental planning has become an indispensable part of city planning during the last years. The Office for Environmental Protection provides experts for environmental studies, environmental assessments and environmental consulting, who

- assemble and provide environmental information,
- provide consultation in the field of spatial planning as early as in the blueprint stage,
- have important ideas for environment-friendly planning proceedings and
- monitor the planning process and, if necessary, impose environmental interests through obligations and indications.

This shows that Stuttgart is well positioned for the implementation of the Strategic Environmental Impact Assessment in order to improve environmental protection pursuant to the European Law Adaptation Act for the Construction.





Energy

NATURA 2000 areas

Protection target and plan contents

NATURA 2000 is a European nature conservation network whose target is to conserve biodiversity in Europe. This network of protected sites conserves precious natural habitats as well as rare species of animals and plants in all EU member states.

The EU Birds Directive from 1979 and the 1992 Habitats Directive form the basis of this nature conservation network. In Germany, the Habitats Directive is often called FFH Directive, with FFH signifying fauna, flora and habitat. The concerning habitats and species are listed in the Annexes. The targets of the Birds Directive are among others the protection of the breeding sites as well as the feed lots and resting places of migratory birds.

The Land of Baden-Württemberg has 48 habitats, 41 animal species and 11 plant species which are to be placed under special protection pursuant to the Habitats Directive. On Stuttgart's territory, these are the forest habitats woodrush-beech forest, woodruffbeech forest, chickweed-oak-hornbeam forest and the alluvial forests, whose protection has priority. The species comprise the yellow-bellied toad, the great crested newt, the stag beetle, the hermit beetle, the dusky large blue and the green Dicranum moss. It is the first time that a bird protection area is designated in Stuttgart. The reason for this is the breeding occurrence of the night heron on the bird island in the Max-Eyth-See lake for several years.

Special Areas of Conservation (SAC), i.e. areas designated under the Habitat Directive, within Stuttgart's boundaries are Stuttgart bight and parts of the SACs Filder, Glemswald forest, Lower Rems valley (Unteres Remstal) and Backnang bight (Backnanger Bucht). These areas together with the bird island Max-Eyth-See lake, an envisaged Special Protection Area (SPA) under the Birds Directive, form the NATURA 2000 network on Stuttgart's territory.

Borders:

NATURA 2000 areas are spread over all EU member states. They are submitted to the European Commission by the member states.

Scale:

Borders in a scale of 1 : 25,000 (EU)

Time scale:

Updated when required

Conservation and development plans (Pflege- und Entwicklungspläne, PEPL):

The member states are engaged to conserve or restore a favourable state of the habitats and species. Deteriorations must be avoided (prohibition of deterioration). Management plans are being established in Baden-Württemberg.

Legal foundations:

Habitats Directive (92/43/EEC) Birds Directive (79/409/EEC) Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG)

Participation of the public:

Consultation procedure engaged by the Land of Baden-Württemberg

Planning authorities responsible for designations:

Submission and designation: Ministry for Food and Rural Areas of Baden-Württemberg (MLR) and the State Institute for Environment, Measurements and Nature Conservation Baden-Württemberg (LUBW)

Supervisory authorities, support, reporting:

European Commission

Stuttgart's Regional Administrative Authority, Directorate 56, Nature Protection and Landscape Conservation City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Contact and information:

City of Stuttgart, C	Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de

www.lubw.baden-wuerttemberg.de/ www.rp-stuttgart.de http://europa.eu/scadplus/leg/en/lvb/l28076.htm





Nature conservation Soi

Nature reserves

Protection target

Nature reserves are legally binding conservation areas, in which nature, the landscape, species and biotopes are placed under special protection. Their purpose is to conserve, develop or restore biotopes or natural communities of certain wild species of animals and plants. Nature reserves are the most intense means of area protection and therefore of the preservation of areas where nature protection has priority over other uses. Nature reserves are marked by special signs.

The designation of a nature reserve ensues a statutory decree, specifying the protection purpose, prohibitions and restrictions. Detailed conservation and development measures are presented in separate conservation and development plans. All activities potentially leading to the destruction, damage or modification of a nature reserve in parts or as a whole are prohibited.

There are currently seven nature reserves in Stuttgart's territory. About 1,360 hectares of land, i.e. about 6.6 % of the whole district of Stuttgart, are protected under this category. They cover varied, scattered mosaics of habitats with structured forests, diverse grasslands, streamside trees and larger meadow orchards. The recreational areas Rotwildpark and Schwarzwildpark are former grazing forests with characteristic and mighty trees and groves. These protection areas house, preserve and develop endangered types of biotopes as well as species of animals and plants, which are rare in Baden-Württemberg, the whole of Germany and even in Europe. Examples of these species in the Stuttgart area are the alluvial and hillside forests rich in geophytes, neglected grassland exposed to the sun with numerous rare species of plants and insects as well as an extraordinarily large number of bat and bird species in areas with precious meadow orchards and forests.

Borders:

The borders in Baden-Württemberg are set by Stuttgart's Regional Administrative Authority, Directorate 56, Nature Protection and Landscape Conservation pursuant to nature protection criteria.

Scale:

1:25,000 and 1:2,500

Time scale:

No time limits

Conservation and development plans (Pflege- und Entwicklungspläne, PEPL):

Stuttgart's Regional Administrative Authority, Directorate 56, Nature Protection and Landscape Conservation

Legal foundations:

Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG) Decree by Stuttgart's Regional Administrative Authority on the nature reserve in question

Participation of the public:

1. Participation of public facilities, public agencies, municipalities and agricultural and forestry trade associations

2. Public display of the decree draft including a map

Planning authority responsible for designations:

Stuttgart's Regional Administrative Authority issues a decree on the nature reserve, the maps presenting the borders of the reserve as well as the text of the decree are constituents of the statutory decree.

Supervisory authorities:

Stuttgart's Regional Administrative Authority, Directorate 56, Nature Protection and Landscape Conservation

City of Stuttgart, Office for Environmental Protection, Lower nature conservation authority

Contact and information:

City of Stuttgart, (Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de

Information sheets (in German) on the individual nature reserves are available at www.lubw.baden-wuerttemberg.de www.rp-stuttgart.de





Nature conservation

Energy

Landscape conservation areas

Protection target

Landscape conservation areas are designated pursuant to § 29 of the Federal Nature Conservation Act (NatSchG) to ensure the conservation of the biodiversity, particularity and beauty of the landscape. They also serve the purpose of conserving or restoring the potential of the ecological balance and of preserving or improving the utility of the natural assets. They are also a means of preserving areas with a special recreational significance and of defining buffer zones towards nature reserves.

A landscape conservation area is designated by a statutory decree, specifying the protection purpose, prohibitions and restrictions. Duly agricultural and forestry uses are usually permitted as long as they are not against the protection purpose. Modifications require a special authorization. Landscape conservation areas are to be kept free from installations disturbing the landscape, like small constructions and enclosures outside designated garden shed areas. Landscape conservation areas are marked by special signs.

There are 26 landscape conservation areas in Stuttgart with a total area of about 6,700 hectares. This means that about 32 % of Stuttgart's territory is placed under landscape protection. These areas are mostly large and include for example the following types of landscapes:

- historical land uses, like terraced viticulture and orcharding
- near-natural deciduous forests and mature stands
- characteristic land forms, like stream clefts or lines of rocks
- meadow orchards shaping the landscape
- natural parks significant for the history of civilization

They present areas for recreation near settlements and the inner city and preserve a healthy urban climate thanks to the production of fresh air and their acting as ventilation lanes.

Borders:

Landscape conservation areas are designated throughout Germany by the responsible Länder authorities. In Baden-Württemberg, this is done by the Lower nature conservation authorities.

Scale:

Map presentation of the borders in a scale of 1 : 20,000 and 1 : 2,500 (allowing for a precise division into parcels of land)

Time scale:

No time limits

Legal foundations:

Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG) Decrees by the City of Stuttgart or by Stuttgart's Regional Administrative Authority on the landscape conservation area in question

Participation of the public:

1. Participation of public facilities, public agencies, municipalities and agricultural and forestry trade associations

2. Public display of the decree draft including a map

Planning authorities responsible for designations:

The City of Stuttgart or Stuttgart's Regional Administrative Authority issues a decree on the landscape conservation area. The maps presenting the borders of the landscape conservation area as well as the text of the decree are constituents of the statutory decree.

Supervisory authority:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Contact and information:

City of Stuttgart, C	Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de

www.stuttgart.de www.rp-stuttgart.de www.lubw.baden-wuerttemberg.de





Environmental aspects in spatial planning _

Nature conservation §

Noise

Natural monuments

Protection target and plan contents

Pursuant to § 31 of the Federal Nature Conservation Act (NatSchG), what is designated as natural monuments are both single features (e.g. precious trees, rocks, caves) and natural features with a size of up to 5 hectares (e.g. smaller water surfaces, moorland and heath).

Natural monuments are protected for their value concerning natural history, the history of the region, scientific and aesthetic aspects as well as for their rarity, particularity or beauty. They are designated by a statutory decree by the City of Stuttgart. Natural monuments are usually not placed under protection individually but summed up in one decree. Their protection status can be compared with that of a nature reserve. The removal of a natural monument as well as all activities potentially leading to its destruction, damage or modification are prohibited. Natural monuments are marked by special signs.

86 natural monuments are designated in Stuttgart. These include 40 single trees, most of them shape the landscape in particular, as well as 13 groves, including for example an old perry pear avenue or a group of chestnut trees. 33 of the monuments are areal monuments with a size totalling about 22 hectares. The areal monuments also include:

- eight waterbodies and springs
- eighteen geological exposures
- six stream clefts
- one ravine

Areal monuments are precious habitats for animals and plants. The riversides of the Probstsee lake, for example, house not only the breeding places of blackcap, chiffchaff and coot but also the biggest population of the reed warbler in Stuttgart.

One of the city's characteristic features is the comparatively high number of numerous geological exposures in Stuttgart's rolling topography, allowing for valuable insights into the diversity of subsoils. They mostly represent walls of former quarries and natural exposures at valley sides.

Borders:

Natural monuments are designated throughout Germany by the responsible Länder authorities. The borders are set pursuant to nature protection criteria, in Baden-Württemberg by the Lower nature conservation authority.

Scale:

1 : 20,000 for the outline map and 1 : 500 for the exact location and a precise division into parcels of land

Time scale:

No time limits

Due to the natural aging process, especially single trees disappear from time to time. New trees are designated in return.

Legal foundations:

Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG) Decree by the City of Stuttgart on the protection of

Decree by the City of Stuttgart on the protection of natural monuments

Participation of the public:

1. Participation of public facilities, public agencies, municipalities and agricultural and forestry trade associations

2. Public display of the decree draft including a map and consultation of the owners affected and other parties entitled

Planning authority responsible for designations:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Supervisory authority:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Contact and information:

City of Stuttgart,	Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de

Publication: Kreh, Ulrike: Naturdenkmale in Stuttgart, 2005. Editor: Amt für Umweltschutz, Landeshauptstadt Stuttgart, verlag regionalkultur.





Environmental aspects in spatial planning

Water

Noise

Biotopes under special protection

Protection target

Baden-Württemberg's Nature Conservation Act and Forest Act place particularly precious and endangered biotopes and forest biotopes under protection. In contrast to other protected sites, these biotopes are immediately protected through the above-mentioned Acts. No statutory decree is issued and there are no signs marking these biotopes. Biotopes which are particularly protected by the Nature Conservation Act comprise:

- moorland, marsh, litter meadows, reeds, sedge reeds and wet meadows
- near-natural stream and river sections, oxbow lakes of running waters, special ponds, tarns, always including riverbank vegetation, silting areas of standing waters
- ornamental and juniper heath, dry and neglected grassland
- hedges, wood, ravines, dry walls and rock barriers
- carrs, bog forests and alluvial forests

Pursuant to Baden-Württemberg's Forest Act, the following forest biotopes are additionally designated as protected sites:

- near-natural ravine forests, boulder forests and talus forests
- regionally rare and near-natural forest communities
- ravines, clefts, cirques and dead-ice holes in a forest with near-natural concomitant vegetation
- forests as residues of historical forms of cultivation and highly structured forest edges

The criteria for a legal protection of biotopes and forest communities are clearly defined in the Annexes to both Acts. The biotopes are gathered on data sheets and indicated in maps. The comparably numerous biotopes are areal or linear and must neither be destroyed nor disturbed. What is especially characteristic for the urban district of Stuttgart is the large number of deeply indented stream clefts as well as dry walls on the hillsides and vineyard terraces.

As the dry walls could hardly be represented recognizably with the map scales, it is the areas of occurrence which are marked here. However, only the walls are under legal protection. They can additionally be protected as a cultural monument.

Biotope borders:

The borders are set according to the legally defined criteria.

Scale:

Map representation of the borders in a scale of 1 : 5,000 and 1 : 2,500

Time scale:

No time limits

Legal foundations:

Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG) Forest Act for Baden-Württemberg

Planning authorities:

City of Stuttgart, Office for Environmental Protection, Lower nature conservation authority Research Institute for Forestry (Forstliche Versuchsund Forschungsanstalt), Freiburg State Institute for Environment, Measurements and Nature Conservation Baden-Württemberg (LUBW)

Supervisory authorities:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority Stuttgart's Regional Administrative Authority (for protected biotopes within nature reserves) Tübingen's Regional Administrative Authority, Section for Forestry Management

Contact and information:

Biotopes under sp	ecial protection:
City of Stuttgart, C	Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de
Waldbiotope:	Lower forestry authority Stuttgart
Phone:	0049-711-225539-0

www.stuttgart.de www.lubw.baden-wuerttemberg.de





Nature conservation

Protected green spaces

Protection target and plan contents

Protected green spaces are certain greens, especially within settlement areas, which are protected areally. In contrast to natural monuments, protected green spaces must not meet strict criteria, the protection purpose suffices for a designation of the greens as protected. Pursuant to the Federal Nature Conservation Act, protected green spaces comprise:

green zones in settlement areas, parks, cemeteries, significant gardens, single trees, lines of trees, avenues or groves in settled or unbuilt areas; rotective plantings and protective wood outside forests.

They allow for a preservation of the ecological balance, the sustainable use of natural assets or of habitats for animals and plants as well as the revival and structuring of the city's appearance and landscape. The history of the region and cultural aspects can also be reasons for the protection of greens.

It is prohibited to modify or impair protected green spaces or to use them in another way.

The City of Stuttgart protects all trees in a definite area (inner city and Cannstatt's inner city) with a trunk circumference of more than 80 cm, measured at an altitude of 1 m. For this purpose, Stuttgart's Lord Mayor has issued a decree on the protection of trees, which is being continued as tree preservation ordinance by the new nature protection legislation.

The conservation of these relatively big trees pursues the following purposes: revival of the city's appearance and landscape, improvement of the urban climate, conservation of habitats for animals, especially for birds.

Borders:

Pursuant to the tree preservation ordinance: inner city districts and parts of Bad Cannstatt

Scale:

1:500 and 1:1,000

Time scale:

No time limits

Legal foundations:

Federal Nature Conservation Act (BNatSchG) Nature Conservation Act by the Land of Baden-Württemberg (NatSchG) Tree preservation ordinance by the City of Stuttgart

Participation of the public:

Public display of the ordinance draft including a map or consultation of the owners affected

Planning and supervisory authority:

City of Stuttgart, Office for Urban Planning and Urban Renewal

Contact and information:

City of Stuttgart, Office for Urban Planning and Urban Renewal, Subject area of landscape planning, urban green space planning

Phone:	0049-711-216-3862 and
	0049-711-216-1941
E-mail:	poststelle.61@stuttgart.de

Information sheet: Bäume in der Stadt, Baumschutzsatzung und Freiflächen-Gestaltungsplan. Editor: Landeshauptstadt Stuttgart, Amt für Stadtplanung und Stadterneuerung, 2006.

www.stuttgart.de





Environmental aspects in spatial planning

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Biotope network planning

Protection target and plan contents

The purpose of a biotope network is the sustainable preservation of regional species of animals and plants and their population including their habitats and natural communities. A special focus is put on the preservation, restitution and development of viable ecological correlations through the linking of biotopes. The biotope network supports "NATURA 2000", a European network of protected sites. Pursuant to the Federal Nature Conservation Act, the biotope network must cover at least 10 % of the Land's territory. It consists of core areas, connection areas and connection elements. Already legally defined conservation areas can be part of the biotope network.

Areas in Stuttgart, where measures within biotope network planning are taken, include:

- meadows and farmland
- meadow orchards
- fruit garden areas
- vineyards and concomitant biotopes
- former heaths, semi-dry grassland, thermophilic border biotopes and bushes
- running waters and valley grassland
- greens and parks, settlement areas

A biotope network plan has been available for the whole outskirts of Stuttgart's urban district since 2005. Its targets and recommendations are represented in planning maps and explained in reports. Depending on the existing range of habitats and species, the areas are represented as protection and conservation area, as supplemental area or as deficit area requiring urgent compound measures. The maps also show target biotopes with signs and number codes.

Working committees have been established in several boroughs in order to coordinate the implementation of the biotope network plan between the municipality, clubs, local initiatives and agricultural interests. These committees concretize, accompany or realize the implementation of proposals and recommendations. Many individual activities, projects and sponsorships for precious biotopes could so be realized.

Examples of this are the green strips projects by the farmers of the city district Zazenhausen, the maintenance of the landscape in the Mussenbachtal valley through extensive grazing of Scottish highland cattle as well as the resettlement and promotion of concomitant vineyard flora in the Neckar Valley vineyards.

Borders:

Areas for which no legally binding land-use plan exists, without woodland

Scale:

1:2,500

Time scale:

No time limits

Legal foundation:

Nature Conservation Act by the Land of Baden-Württemberg (NatSchG)

Participation of the public:

Public participation in the context of the implementation

Planning authority:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Supervisory authority:

City of Stuttgart, Office for Environmental Protection Lower nature conservation authority

Contact and information:

City of Stuttgart,	Office for Environmental Protection
Phone:	0049-711-216-8727
E-mail:	poststelle.Amt36@stuttgart.de

Publication: Maass, Inge: Biotopverbundplanung in Stuttgart. Schriftenreihe des Amtes für Umweltschutz, No. 1/2006. www.stuttgart.de Noise





Soil quality

Protection target and plan contents

The soil planning map characterizes the quality of the soil in a simplified form. It is the basis for the assessment of soil uses.

The soil quality here portrayed is made up of the assessment of natural soil functions (vegetation, hydrologic cycle, filter and buffer) and human influences (sealing, existing contamination).

Soil quality plays an important role in urban landuse planning. First, a balance of the protective good soil is required for the environmental impact assessment pursuant to the planning legislation. Second, soil use management in Stuttgart follows sustainable principles wherever possible according to the Soil Protection Plan Stuttgart (Bodenschutzkonzept Stuttgart, BOKS).

In simple words, soil quality is the soil's capacity to participate in ecological cycles and to bear witness to natural history. What counts is the existing functional state.

The soil quality can be evaluated sufficiently provided that the natural soil functions like habitat, ecological balance, filter and buffer as well as the archival function are roughly known and the extent to which those are impaired by human influences like contamination and sealing is clear.

A systematic coverage of the soil quality and its representation on a "Planning map Soil quality" are required for a consideration in the course of planning processes.

Soil quality and its deterioration - along with the stressed area - are important parameters for what is called "soil indication" in the context of BOKS (www.stuttgart.de/bodenschutzkonzept).

Borders:

Stuttgart's whole urban area

Scale:

Planning map "Soil Quality - Soil Protection Plan Stuttgart" in a scale of 1 : 20,000 or digitally

Time scale:

Updated when required

Legal foundations:

Federal Soil Protection Act (BBodSchG), Federal Building Code (BauGB)

Designation:

None

Participation of the public: None

Planning authority:

City of Stuttgart, Office for Environmental Protection Lower water and soil protection authority

Available from:

Office for Environmental Protection (in a digital form)

Contact and information:

City of Stuttgart, Office for Environmental ProtectionTechnical soil and groundwater protectionPhone:0049-711-216-88416E-Mail:u360361@stuttgart.de





Soil

Noise

Sealing of the soil surface

Protection target and plan contents

The soil sealing map gives the degree of sealing for a particular area. Sealing means any form of development of soils (e.g. roads, squares, buildings).

The sealing of the soil or its modification have a considerable influence on the microclimate, soil functions, groundwater recharge and the surface run-off of precipitation. It is therefore an important indicator for the assessment of environmental impacts in the context of urban land-use planning.

There are six different sealing levels. Level I has a degree of sealing of less than 16 %, level VI of more than 90 %.

Borders:

Urban area of Stuttgart

Scale:

1: 20,000 and digitally

Time scale: Updated when required

Legal foundation:

Federal Building Code (BauGB)

Designation:

None

Participation of the public: None

Planning authority:

City of Stuttgart, Office for Environmental Protection Lower water and soil protection authority

Available from:

Office for Environmental Protection (in a digital form)

Contact and information:

City of Stuttgart, Office for Environmental ProtectionTechnical soil and groundwater protectionPhone:0049-711-216-88424E-Mail:u360369@stuttgart.de





Potentially and actually contaminated sites

Basis and plan contents

The mapping of potentially and actually contaminated sites is based on the historical data collection of potentially contaminated sites in Stuttgart from 1996 and 2005. The data is constantly updated in the Information system for contaminated sites in Stuttgart (Informationssystem Altlasten Stuttgart) through the digital acquisition of information. This helps to keep any information on the latest status. The information is only available in digital form and not published in a plan due to the constant updating.

Borders:

The borders of potentially and actually contaminated sites are set on the geographical basis of the Digital City Map according to the type of site: Abandoned industrial sites are delimited along the plot borders of the former plant. This means that the borders are set along the former land boundaries. Old deposits are delimited along the defined borders of the emplacement areas. The course of the borders does not depend on land boundaries.

Scale:

The borders are set digitally (according to coordinates) on the basis of the Digital City Map and therefore have no scale.

Time scale:

Constant updating

Legal foundations:

Act on the Protection against Harmful Changes to the Soil and on the Rehabilitation of Contaminated Sites (BBodSchG) Act on the Implementation of the Federal Soil Protection Act (LBodSchAG)

Participation of the public:

None

Planning authority:

The maps are developed and updated by the Office for Environmental Protection.

Support:

City of Stuttgart, Office for Environmental Protection

Available forms:

Digital and as a printout

Contact and information:

City of Stuttgart, Office for Environmental Protection Municipal contaminated sites Phone: 0049-711-216-5653 E-Mail: u360012@stuttgart.de





Groundwater recharge

Protection target and plan contents

The groundwater is constantly replenished by precipitation trickling through the ground (= groundwater recharge). The natural water cycle and consequently the groundwater balance is restricted due to soil sealing or the withdrawal of groundwater for the drainage of a building pit for example, or as drinking water.

The implications of individual urban land-use plans for the groundwater balance are assessed on the basis of plan-specific influences on the groundwater recharge. The same applies to projects which involve the use of groundwater (e.g. groundwater withdrawal or groundwater diversion in the context of building projects) and which require a water right permit.

The groundwater recharge depends on numerous factors, like climate, precipitation distribution, slope inclination, soil characteristics and land use. The analysis of the average long-term groundwater recharge was therefore realized using the necessary basic data and a numeric model calculation. Its distribution is represented in a groundwater recharge map for the urban area of Stuttgart in eight categories.

Borders:

Urban area of Stuttgart

Scale:

1: 20,000 and digitally

Time scale: Medium-term to long-term

Legal foundation:

Federal Building Code (BauGB)

Designation:

None

Participation of the public: None

Planning authority:

City of Stuttgart, Office for Environmental Protection Lower water and soil protection authority

Available from:

Office for Environmental Protection (in a digital form)

Contact and information:

City of Stuttgart, Office for Environmental ProtectionTechnical soil and groundwater protectionPhone:0049-711-216-88416E-Mail:u360361@stuttgart.de





Noise

Climate

Energy

Spa conservation areas

Protection target and plan contents

The conservation map shows the area within Stuttgart's territory in which the spa conservation regulation from 11 February 2002 is valid. The regulation's target is the preservation of the quality and quantity of the 12 officially recognized spas in Stuttgart. The spa conservation area is divided into three main zones (core zone, inner zone, buffer zone). The zones mark the sensitivity of the mineral water system and its degree of required protection against gualitative (substantial) and quantitative interferences. Major criteria for defining the zone borders are the existence of covering layers over the Upper Muschelkalk (aquifer for mineral water) as well as the depth of the pressure surface in the Upper Muschelkalk to the water table or its attitude above the ground (artesian zone).

The officially protected region is the immediate environment around the individual well systems (a radius of 5 m). This is where the strictest protection requirements prevail. The core zone comprises the actual area where Stuttgart's spa and mineral waters well up within the Neckar Valley, at the Nesenbach conjunction and at sections of the lower Nesenbach valley. The inner zone extends over the central Nesenbach valley and the Eastern Neckar slopes on both sides of the Nesenbachtal conjunction. Its external borders are identical with the outcrop of the boundary between galenite bed (km1BG) and middle gypsic horizon (km1MG).

On the periphery of the spa conservation area lies the buffer zone. Its border is identical with the catchment area of over 95 % of the spas' delivery.

Every zone has its own special conservation provisions. When groundwater is withdrawn from the buffer and inner zone for example, there are upper limits for the length and amount of the withdrawal. In the case of extensive interferences, different criteria for limiting the depth of e.g. the excavation of a building pit are defined depending on the zone. Furthermore, "irrelevance thresholds" are determined for standard interferences (e.g. foundation measures, drilling, development etc.) which must be exceeded for spa requirements to be effective. With the creation of clear and geographically-restricted regulations like these, the conservation map along with the spa conservation regulation contributes significantly to the transparency

in the assessment process of projects related to mineral water.

Borders:

Total conservation area: 335 km²; half of Stuttgart's urban area is superposed by protection zones (116 km²)

Scale:

Official maps: synoptic map in a scale of 1 : 25,000, 64 detailed maps in a scale of 1 : 2,500 as well as digitally

In print form: "Umweltatlas Wasser - Trinkwasserschutzgebiete, Heilguellenschutzgebiet, Überschwemmungsgebiete" ("Environmental atlas Water - Drinking water protection areas, spa conservation areas, flood areas") in a scale of 1 : 20,000

Legal foundations:

Federal Water Management Act (WHG), Water Act Baden-Württemberg (WG), Regulation by Stuttgart's Regional Administrative Authority on the protection of officially recognized spas in Stuttgart-Bad Cannstatt and Stuttgart-Berg

Designation:

Regulation by Stuttgart's Regional Administrative Authority on the protection of officially recognized spas in Stuttgart-Bad Cannstatt and Stuttgart-Berg from 11 June 2002

Participation of the public:

Through consultation and public display

Planning authority:

Stuttgart's Regional Administrative Authority

Available from:

City Surveyor's Office (printed map in a scale of 1: 20,000), Office for Environmental Protection (in a digital form)

Contact and information:

City of Stuttgart, Office for Environmental Protection Technical soil and groundwater protection 0049-711-216-88416 Phone: E-Mail: u360361@stuttgart.de





Environmental aspects in spatial planning _

Water

Noise

Drinking water protection areas

Protection target and plan contents

A statutory decree (regulation on protection areas) defines drinking water protection areas in order to preserve drinking water quality. Drinking water protection areas are divided into different protection zones with different levels of orders, restrictions and bans.

The protection zones' sizes and positions are determined from case to case according to the local hydrogeological conditions. The purpose of the broad protection zones (zones III, IIIA, IIIB) is to prevent far-reaching negative implications, especially chemical impurities. The target of the closer protection zone (zone II) is to protect also from bacterial impurities. Zone I is additionally to be protected from immediate hazards.

There are three drinking water protection areas in the urban area of Stuttgart (Blauäcker, Bruderhausquelle and Schattenquelle, Mahdentalquelle). The region used for the withdrawal of drinking water in the Blauäcker water protection area is the groundwater deposit of the Upper Muschelkalk, that of the protection areas Bruderhausquelle/Schattenquelle and Mahdentalquelle is the Keuper sandstone layer.

The protected groundwater deposits within Stuttgart's boundaries exclusively provide drinking water for the adjacent municipalities of Leonberg and Ditzingen.

Borders:

Total area of the drinking water protection areas within Stuttgart's boundaries: 12.62 km² (Mahdentalquelle/No.32, Bruderhausquelle and Schattenquelle/No. 152, Blauäcker/No. 148)

Scale:

Official maps: synoptic maps in a scale of 1 : 25,000, detailed maps in a scale of 1 : 2,500 as well as digitally

In print form: "Umweltatlas Wasser - Trinkwasserschutzgebiete, Heilquellenschutzgebiet, Überschwemmungsgebiete" ("Environmental atlas Water - Drinking water protection areas, spa conservation areas, flood areas") in a scale of 1 : 20,000

Legal foundations:

Federal Water Management Act (WHG), Water Act Baden-Württemberg (WG) Relevant regulations on water protection areas

Designation:

Relevant regulations on water protection areas

Participation of the public:

Through consultation and public display

Planning authorities:

Blauäcker water protection area: district of Ludwigsburg, other water protection areas: district of Böblingen

Available from:

City Surveyor's Office (printed map in a scale of 1 : 20,000) Office for Environmental Protection (in a digital form)

Contact and information:

City of Stuttgart, Office for Environmental ProtectionTechnical soil and groundwater protectionPhone:0049-711-216-88419E-Mail:u360364@stuttgart.de





Hydrogeology

Basis and plan contents

Intense investigations (bores) have been carried out in Stuttgart for decades in order to know more about building grounds, to protect mineral wells and spas and to solve the problems with contaminated sites. These bores provide information on the subsoil structure and the stratigraphic sequence, which is then used for geological and building ground maps. Environment-related data on the groundwater (hydrochemical and pollutant analyses) is increasingly collected, especially on groundwater levels. Data on groundwater levels is the basis for plans presenting stockwork-specific groundwater contour lines, which are used for the evaluation of hydrogeological conditions in a plan area and for the determination of the design flood. The Hydrogeological Map from 1974 currently available (in a scale of 1 : 10,000) is part of the set of building ground maps drawn up by Baden-Württemberg's State Agency for Geology, Raw Materials and Mining. The Hydrogeological Map is being updated by the Office for Environmental Protection and will be released in 2009.

What is used for the updating of the map is the drilling data information system BOISS (Bohrdaten-Informationssystem), which administers any available data on water management. BOISS currently comprises 17,100 drillings and groundwater outcrops in a digital form. BOISS is

successfully used by the city's technical offices when fulfilling local and sovereign tasks (geology, building on groundwater level, preservation of mineral water deposits, management of contaminated sites).

In order to make a connection with the area, BOISS was integrated into SIAS (Spatial Information and Access Services) and this allows for a linking of the individual outcrops with the city map.

Borders:

Stuttgart's whole urban area

Scale:

Map in a scale of 1 : 10,000 A digital version without scale is in preparation.

Time scale:

Constant updating of individual values (drilling and groundwater level data) in BOISS, updating of the plans presenting groundwater contour lines in preparation (2009)

Legal foundations:

Federal Water Management Act (WHG), Water Act Baden-Württemberg (WG)

Participation of the public:

None

Planning authority:

Office for Environmental Protection

Available from:

Map is no longer available, digital version by 2009

Contact and information:

City of Stuttgart, Office for Environmental ProtectionGeology and local spa protectionPhone:0049-711-216-3571E-Mail:u360031@stuttgart.de

Energy

Frauenkopf Dürrbach Rohracker

Environmental aspects in spatial planning.

Surface waters

Protection target

Natural or near-natural waterbodies are to be preserved. Developed waterbodies are to be restored to a near-natural state as far as possible. Waters are to be managed in a way that prevents negative ecological and chemical modifications and preserves or attains healthy ecological and chemical conditions. The creation, removal or substantial restructuring of waterbodies requires a plan approval decision.

Path and position:

The waterbodies plan (state of September 1997) by the Office for Civil Engineering of the City of Stuttgart presents the paths and positions of Stuttgart's main surface waters.

Scale:

Official city map in a scale of 1 : 20,000 (no longer available)

Digitized data exact to the plot is additionally available (SIAS/GEWISS).

Legal foundations:

Federal Water Management Act (WHG), Water Act Baden-Württemberg (WG)

Kontakt und Information:

City of Stuttgart, Office for Environmental Protection Surface waters, waste water Phone: 0049-711-216-88434 E-Mail: u360376@stuttgart.de

RNTAL-MÜNCHINGEN

Water

Noise

Climate

Energy

Development conditions of waterbodies

Plan contents

The categorization of Stuttgart's streams into a system consisting of four development degrees of waterbodies allows for a rough classification of the condition of sections of running water and therefore their degree of required protection or development.

In Stuttgart, a distinction is made between the four development degrees "natural or near-natural", "biological/technical", "technical" and "canalized underground".

The "natural or near-natural" development degree comprises both unchanged water segments and renaturized sections. A "biological/technical" development indicates that either river bed or slope is technically developed. When a stream section is "technically" developed, both river bed and slope are fixed. Stream sections which are "canalized underground" flow subterraneously in conduits or other cross-sectional shapes.

Map resolution/delimitation:

Due to the map scale, the individual development degrees can only be presented in larger sections of the same degree.

Scale:

Synoptic map in a scale of 1 : 100,000, published within the Scripts by the Office for Environmental Protection - No. 2/2004 "Waterbodies Report 2003" ("Gewässerbericht 2003"), figure 22

Available from:

The brochure "Gewässerbericht 2003" (in German) can be purchased at the Office for Environmental Protection for a fee of \in 5 plus \in 3 mailing expenses at 0049-711-216-2013.

Contact and information:

City of Stuttgart, Office for Environmental Protection Surface waters, waste water Phone: 0049-711-216-88434 E-Mail:

u360376@stuttgart.de	
usoos700stuttguttut	

Flood areas

Protection target and plan contents

In order to guarantee that flood water causes no damages when running off and to preserve natural flood plains, areas along second-order streams in the urban area of Stuttgart which are inundated in times of floods were designated as flood areas. This is the case for areas at the waters Bußbach, Erbgraben, Feuerbach, Glems with Steinbach, Körsch with Hattenbach, Lindenbach, Ramsbach with Weidachbach, Schnatzgraben, Sindelbach and Steinbach with Schwarzbach.

What requires a water right licence in flood areas is especially the construction, removal or restructuring of construction works, the raising or deepening of the ground level, the storage of materials and the planting or removal of trees or bushes.

The borders of flood areas are defined in 15 site plans and in a record of the affected plots. The site plans in a scale of 1 : 2,500 are deposited at the Office for Environmental Protection of the City of Stuttgart (Lower water authority), Gaisburgstraße 4, and can be reviewed during office hours.

Borders:

Areas along second-order running waters, which are being inundated in a 100-year flood, are bordered.

Scale:

Official site plans in a scale of 1 : 2,500

Map "Environmental atlas Water" ("Umweltatlas Wasser") in a scale of 1 : 20,000

The official site plans were revised. This provides digitized information exact to the plot (SIAS).

Time scale:

No time limits

Legal foundations:

Federal Water Management Act (WHG), Water Act Baden-Württemberg (WG)

Designation:

Statutory decree by Stuttgart's office of mayor

Available from:

The map "Umweltatlas Wasser- Trinkwasserschutzgebiete, Heilquellenschutzgebiet, Überschwemmungsgebiete" ("Environmental atlas Water - drinking water protection areas, spa conservation areas, flood areas") can be purchased at the Office for Environmental Protection for a fee of € 16.50 plus € 3 mailing expenses at 0049-711-216-5653.

Contact and information:

City of Stuttgart, Office for Environmental Protection Surface waters, waste water Phone: 0049-711-216-88434 E-Mail: u360376@stuttgart.de

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Riparian strips

Protection target

The purpose of riparian strips is to preserve and improve the ecological function of waterbodies. What is prohibited there is the ploughing of grassland, the handling of substances hazardous to waters and the construction of structural and other installations. Trees and bushes outside woodland is to be preserved.

Borders:

In areas for which no legally binding land-use plan exists, riparian strips cover by act of law those zones adjacent to the top edge of the bank to the landside in a width of 10 m.

In areas for which a legally binding land-use

plan exists, riparian strips are to be defined in a width of at least 5 m from the top edge of the bank through a statutory decree by the responsible authorities. Technical delimitations are available for the streams of Körsch, Ramsbach, Feuerbach, Lindenbach and Dürrbach.

In case there is no top edge of the bank, the line of the average flood water run-off is to be used.

Time scale, designation:

Without legally binding land-use plan: in force by act of law.

With legally binding land-use plan: implementation through a statutory decree by the Lower water authority in preparation.

Legal foundations:

Water Act Baden-Württemberg (WG)

Planning authority:

City of Stuttgart, Office for Environmental Protection Lower water and soil protection authority

Contact and information:

City of Stuttgart, Office for Environmental Protection Surface waters, waste water Phone: 0049-711-216-88435 E-Mail: u360377@stuttgart.de

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Calculation: Maps: Edition and mapping: Published by:

Accon GmbH (Ltd.), Greifenberg City Surveyor's Office, Stuttgart Heide Esswein, Dipl. - Geogr. (graduate geographer) City of Stuttgart, Office for Environmental Protection, Section of Urban Climatology, 2007

Calculation grid: 10 m

Calculation for $L_{\rm Night}$ pursuant to the Environmental Noise Directive / VBUS (preliminary method of calculation for environmental noise at roads)

Buildings

Roads

Urban district borders

- Borough borders

Nature conservation Soil Wat

Energy

Noise abatement plan

Protection target and plan contents

Noise abatement plans allow for coordinated steps against different noise sources.

Noise abatement plans and noise maps also represent an important assessment foundation for urban land-use planning and transport route planning. Noise maps are an objective representation of the noise pollution and make noise "visible". They clearly show areas with a high noise exposure, which require noise abatement measures, and those areas which have been only slightly noisy so far and therefore require protection.

The EU Directive on Environmental Noise (2002/49/EC of the European Parliament and of the Council from 25 June 2002 relating to the assessment and management of environmental noise) attaches greater importance to noise abatement planning. The Directive was transposed into national law on 24 June 2005 (the Federal Immission Control Act was amended by inserting §§ 47a to 47f - Noise Abatement Plans). The most important difference between the EU Directive and the previous § 47a of the Federal Immission Control Act is the deadlines determining by when noise maps and noise abatement plans (action plans) shall be set up for the first time. Noise maps shall be available by 30 June 2007 for agglomerations with more than 250,000 inhabitants, noise abatement plans by 18 July 2008. The plans must then be updated every 5 years. The Act also stipulates an adequate participation of the public.

The ultimate purpose of noise abatement planning is the reduction of noise pollution in all areas of the city requiring protection in order to meet defined target values everywhere. The medium-term target (by the German government) is not to exceed a rating level of 65 dB(A) during the day and 55 dB(A) during the night in areas exclusively or predominantly used for residential purposes. The long-term target is the adherence to a level of 55 dB(A) during the day and 45 dB(A) during the night (Vision Lärmschutz Stuttgart 2030, Vision for noise abatement in Stuttgart 2030).

Borders:

The whole city or single boroughs

Scale:

1 : 10,000 to 1 : 1,000

Time scale:

5 years

Legal foundation:

Federal Immission Control Act (BImSchG)

Participation of the public:

In accordance with the Federal Immission Control Act, the public is to be involved at an early stage and the draft plan is to be displayed with the possibility for the public to comment. Advisory committee on noise abatement, Round Tables

Planning authority:

City of Stuttgart, Office for Environmental Protection

Authorization/supervisory authorities:

The city council decides on the noise abatement plan. Noise abatement plans have no legal effects for the public but must be considered by the administration for further planning and weighing. As for the implementation of traffic law measures, Stuttgart's Regional Administrative Authority is the supervisory authority.

Contact and information:

City of Stuttgart,	Office for Environmental Protection
Phone:	0049-711-216-6703
E-Mail:	u360451@stuttgart.de

www.stadtklima-stuttgart.de (available in English and German)

Energy

Clean air and action plan

Protection target and plan contents

Immission measurements along highly polluted road sections in Stuttgart have revealed that the immission limit values for the air pollutants particulate matter (PM_{10}) and nitrogen dioxide (NO_2), which are effective throughout the EU for the protection of public health, are being exceeded. This is why an action plan must be drawn up. The measures defined therein are to bring short-term improvement.

From 2010, accentuated immission limit values for NO_2 will come into effect. Besides short-term measures, measures which have a medium-term and long-term focus must be taken in order to control air pollution sustainably.

A combined clean air and action plan was established for the city of Stuttgart for the complying with the various planning targets. This plan came into effect on 1 January 2006.

It consists of 36 measures, including the improvement of the local public transport system, the conversion of public vehicle fleets, mobile machines and equipment, infrastructural and road building measures, increased parking fees in the inner city, the reduction of parking search traffic as well as a ban on the combustion of solid fuels and garden waste.

The plan's most important content, however, are traffic bans. This includes the designation of the inner city as Low Emission Zone. Pursuant to the 35th Federal Immission Control Ordinance (35. BImSchV, Ordinance on marking of vehicles), vehicles belonging to Pollutant group 1 have not been allowed to drive in the Low Emission Zone since 1 March 2008. From 1 January 2012, this driving ban will also be applied to vehicles belonging to Pollutant group 2.

Borders:

Urban area of Stuttgart

Scale:

-- (textual plan)

Time scale:

Short-term to long-term

Legal foundation:

Federal Immission Control Act (BImSchG)

Participation of the public:

The public can participate in the establishment of the plan.

Planning authorities:

Land of Baden-Württemberg (Stuttgart's Regional Administrative Authority)

Authorization/supervisory authority:

Stuttgart's Regional Administrative Authority

Contact and information:

City of Stuttgart,	Office for Environmental Protection
Phone:	0049-711-216-6858
E-Mail:	u360002@stuttgart.de

www.stadtklima-stuttgart.de (available in English and German)

Legend

Sum of carbon dioxide emissions t/year per km²

Data basis:

Emission inventory by the State Institute for Environment, Measurement and Nature Conservation Baden-Württemberg (LUBW)

Map basis: City Surveyor's Office Stuttgart

Edition and mapping:

Section of Urban Climatology, Office for Environmental Protection, City of Stuttgart H. Esswein, Nov. 2007

Climate protection programme (KLIKS)

Protection target and plan contents

The impacts of the greenhouse effect are a threat to the global climate. Local governments and all citizens are called upon facing this threat. The most important thing is to fight efficiently against what threatens our climate most, i. e. the increase in greenhouse gas emissions. We must prevent a further increase of these emissions, which are mainly the result of the combustion of fossil fuels.

As capital of the Land of Baden-Württemberg, Stuttgart worked out a climate protection programme in 1997, containing a carbon dioxide balance and recommendations for reducing atmospheric emissions in various fields. The programme was carried forward in 2007.

The programme is not only addressed to the administration. Only the common effort of city, local industries and all inhabitants can make the reduction of Stuttgart's carbon dioxide emissions possible. Climate protection concerns all of us.

The programme consists of the following ten fields of duties: sustainable urban development, energy conservation and energy efficiency, an environmentfriendly development of traffic, soil protection, water protection, waste water, waste management, consultation and public relations, research projects as well as networks for exchanging ideas and experiences.

Important individual measures are for example a local support programme for the renovation of old buildings, the creation of an energy advice centre and a mobility advice centre as well as numerous measures in the context of local energy management.

Borders:

Urban area of Stuttgart

Scale: -- (textual plan)

Time scale: Short-term to long-term

Legal foundation:

City council decision

Participation of the public:

Discussion between the major partners (Round Table) in order to establish the duties and implementation concepts

Planning authority:

City of Stuttgart, Office for Environmental Protection

Authorization/supervisory authority: City council

Contact and information:

City of Stuttgart,	Office for Environmental Protection
Phone:	0049-711-216-6858
E-Mail:	u360002@stuttgart.de

www.stadtklima-stuttgart.de (available in English and German)

_ Environmental aspects in spatial planning _

Nature conservation Soil

Climate atlas

Protection target and plan contents

Climate and air are important factors in the weighing process of spatial planning and a permanent element of urban land use planning, environmental impact assessments and location analyses. What is still missing for an appropriate consideration of these aspects, however, also in view of competing planning targets, is area-related information.

In 1987, the Section of Urban Climatology received the order for the technical reworking of a climate analysis for the neighbourhood association Stuttgart. An accompanying task force on "Climate" was established within the neighbourhood association Stuttgart at the same time, whose job was to coordinate the extent, form and contents of the planned climate atlas.

The purpose of the analysis was to work out the basic materials required for a proper consideration of all climatic and air-related aspects and to prepare the information for the planning process within the association and its participating towns and municipalities. The scale of the analysis was brought in line with the level of preparatory land-use planning. A consequence of this, however, is the impossibility of gathering exact information on particular sectors from local climate maps. The mapped circumstances require a supplementary analysis, or at least an appropriate interpretation, in the context of the local development plan and even more so on the level of the individual project.

The land surveying office provided a digital surface model, which is the basis for various computerized mapping systems.

Stuttgart's City Surveyor's Office has largely contributed to the publication of the analyses in the form of a climate atlas thanks to its mapping materials and the graphic data processing. The printing of the climate atlas was also carried out by the City Surveyor's Office. The climate atlas comprises the following maps: thermal map, emission inventory, air pollution, wind speed, air temperature, sultriness, climate analysis and planning indications.

As an updating of the climate atlas, the climate atlas for the region of Stuttgart has been available in digital form since May 2008 including a significantly higher number of maps.

Borders:

Region of Stuttgart

Scale: 1:20,000

Time scale: Short-term to long-term

Legal foundation:

Federal Building Code (BauGB)

Participation of the public: None

Planning authority:

Verband Region Stuttgart

Authorization/supervisory authority:

Verband Region Stuttgart

Contact and information:

City of Stuttgart	, Office for Environmental Protection
Phone:	0049-711-216-6858
E-Mail:	u360002@stuttgart.de
Phone:	0049-711-216-2550

Phone:	0049-711-216-2550
E-Mail:	u360410@stuttgart.de

www.stadtklima-stuttgart.de (available in English and German)

Nature conservation Soil

Energy concepts

Protection target and plan contents

The purpose of an energy concept is to establish a future-oriented energy supply system in a particular area. One central claim of any energy concept is to reconcile ecological and economic aspects.

Any amount of energy which must not be produced is saved energy. An energy concept's primary task is therefore the identification and assessment of the various possibilities to reduce the required amount of heat and electricity. This covers both urban development measures and measures at future buildings. What must be done afterwards is to find ways to cover the required energy as efficiently as possible. Another challenge is the implementation of the energy concept. Incentives for future homeowners are to entice people to join in.

The areas for which energy concepts have already been established in Stuttgart are various. Examples are the city districts Burgholzhof and Im Raiser (with the Lauchäcker residential area). Areas for which energy concepts are being developed are the territory of the old fair and exhibition ground Killesberg and especially the territory for Stuttgart 21. For the latter, energy consultations are also offered in order to realize buildings significantly exceeding the legal standards required by the Energy Saving Ordinance (Energieeinsparverordnung, EnEV).

Besides energy concepts, which are established by the city itself, there is also the assessment of external concepts. Energetic minimum requirements are defined in urban development competitions for example and the concepts are examined with regard to their energy concepts. The city also sets up contractual settlements in the energy field, requiring in urban development contracts and sales agreements that the future building projects must clearly stay below the existing energy standards pursuant to the Energy Saving Ordinance.

Borders:

Usually cohesive residential areas or areas of a legally binding land-use plan

Scale:

1:500/1:1,000

Time scale:

No time limits

Legal foundation:

Energy Saving Ordinance (EnEV)

Participation of the public:

Energy consultations for people affected

Planning authority:

City of Stuttgart, Office for Environmental Protection

Supervision, support, reporting:

City of Stuttgart, Office for Environmental Protection **Energy Section**

Contact and information:

City of Stuttgart, Office for Environmental Protection Energy Section Phone: 0049-711-216-2241 E-mail: u360500@stuttgart.de

Climate

How to contact the Office for Environmental Protection

Landeshauptstadt Stuttgart (City of Stuttgart) Amt für Umweltschutz (Office for Environmental Protection)

Gaisburgstraße 4 D-70182 Stuttgart

Information office (purchase orders) 0049-711-216- 8724

Monday to Friday

9 am to 1 pm

Mail-administrating centre

Fax: 0049-711-216-3940 E-mail: poststelle.Amt36@stuttgart.de www.stuttgart.de/umwelt (available in German)

How to reach us by public transportation:

City railway

U5, U6, U7, U15 until Olgaeck stop

Bus

Lines 42 and 43 until Olgaeck stop

(Several phone numbers might have been changed after the date of printing. Unfortunately, neither the point of time nor the future phone numbers were known by then. Thank you for your cooperation!)

Office for Environmental Protection

The Office for Environmental Protection was founded in 1988. It consists of six sections and about 150 staff members. It is located in Gaisburgstraße 4 near Charlottenplatz.

As a public agency, the Office for Environmental Protection is engaged in planning procedures.

Four sections participate in the city planning process conducted by the Office for Urban Planning and Urban Renewal by means of the provision of environmental information, consultation and environmental proposals for optimization. This participation especially concerns the fields of preparatory landuse plans, framework plans for urban development and legally binding land-use plans.

The section for "Environmental consulting and Nature conservation" particularly sees to preserving intact environment, taking into account nature conservation and landscape protection principles, special nature conservation requirements and the protection of species.

What the section for "Immission control, Soil protection, Water rights and Waste management" brings into the city planning process is the prevention of water pollution, soil pollution and air pollution. Major aims are the protection of surface waters, groundwater and soil functions. Along with the

"Trade control" section, the section monitors the compliance with pollution control provisions in the context of commercial installations. What must be considered in a legally binding land-use plan already is the prevention of conflicts between neighbours whenever possible and that the intended development does not violate the general principles for the protection of our natural basis of life. The section provides for the implementation and compliance with nature conservation legislation in the city planning process and in individual building projects and for the prevention of avoidable air, water and soil pollutions as well as noise disturbances.

The Section of Urban Climatology evaluates the implications of intended development and larger buildings on the basis of meteorological measurements carried out since 1938, thermographic infrared measuring flights and more and more often on the basis of model calculations. This also includes the identification of influences to which the intended development will be exposed. The section intends an early participation in building projects and an early enough consultation with the Office for Urban Planning and also with architects and homeowners. Important working documents are the climate atlas with its planning indications for urban land-use planning as well as the climate atlas for the Verband Region Stuttgart on the level of regional planning. The long tradition of further developing the concerns of climatic hygiene in urban development as a means of promoting and preserving the health of Stuttgart's inhabitants has substantially contributed to the presentation of KLIKS in 1997, a well-founded climate protection programme. It treats (global) climate as a protective good.

The "Energy" section is responsible for the field of energy within the city. It develops energy concepts for city-owned buildings and properties and for whole urban areas. Furthermore it is concerned with the energy controlling of city properties as well as with contractual settlements in the field of energy (for example energy supply contracts, urban development contracts and sales agreements). It also sets up energetic minimum requirements for urban development competitions and evaluates the energy concepts within the drafts. In the course of ordinances or construction licensing procedures, provisions are embedded in order to create saving possibilities for heat, light and water. This guarantees the highest possible reduction of energy and water consumption through the use of the best available techniques.

All sections collect the results of environmental studies in maps, like the climate atlas or the biotope atlas, and as digital information, part of which is also available on the Internet. On the basis of these documents, the Office for Environmental Protection consults urban land-use and building planners. The information gathered is also an important basis for projects like the urban development project Stuttgart 21. The main purpose is to contribute to an environment-friendly realization of all projects and to achieve the best possible protection of soil, nature, landscape, groundwater, spas, (urban) climate and energy management. The Office for Environmental Protection also develops proposals for noise abatement measures and the implementation of the Convention on Climate Change.

Glossary

Abandoned industrial sites

Real properties that house closed-down installations and other real properties, on which environmentally harmful substances have been handled (§ 2 para. 5 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Alluvial forest

Natural forests along streams and rivers which are affected by floods and groundwater.

Aquifer

Water-filled part of a water-bearing stratum.

BlmSchG

German abbreviation for Bundes-Immissionsschutzgesetz (Federal Immission Control Act).

Bioclimatology

Climatic effects on people.

Biotope network

System of near-natural or extensively used surfaces, which connects scattered or isolated biotopes of similar or the same type.

Biotope

Biotope is one of the most-heard terms in the context of nature conservation and derives from the Greek words bios = life, topos = space or place. It is a habitat for the natural communities of animals and plants.

Border biotope

Mostly narrow line biotopes, which are formed when two different habitats adjoin each other, e.g. groves and meadows. The result is the development of wood or herb borders, which play an important role in the linking of biotopes.

Buffer zone

Clearance and protection zone around conservation areas for the prevention or attenuation of negative

impacts coming from surrounding uses. Nature reserves are often embedded in landscape conservation areas, serving as a buffer zone. Riparian strips along running waters form a buffer against adjacent harmful uses.

Building waste

Masses of building waste accumulating during construction works, like excavated soil, road construction waste and rubble, with the exception of waste from building sites. Masses of building waste are the biggest fraction in the local amount of waste. Building measures on some already used territories consistently produce contaminated building waste, which cannot be utilized or only under specific conditions.

Climate

The term climate designates the long-term aspect of weather. It is determined by the climatic elements air temperature, humidity, wind, precipitation and radiation.

Compensatory measures

Measures which are qualified to compensate nature and landscape interventions. When significant negative implications for nature and the landscape are expected in the context of building measures, the planning authorities must see to it that appropriate compensatory measures are taken.

Contaminated sites

Old deposits and abandoned industrial sites that cause harmful soil changes or other hazards for individuals or the general public (§ 2 para. 5 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Cultural monument

Evidence of human history and development, whose conservation is a concern of public interest.

Decibel

Logarithmic measure for the sound scale (abbr.: dB).

Depth to the groundwater table

Difference between the earth's surface and the groundwater surface of the first groundwater storey.

Design flood

Groundwater level relevant for the planning and designing of buildings and building pits with the purpose of guaranteeing durable protection from uplift as well as durable usability of the building.

Dry grassland

Plant community on sandy and shallow soils poor in humus. Grasses and herbs growing here like the warmth and can endure droughts.

Dry wall

A natural stone wall erected without the use of mortar. Due to their structure, dry walls are special habitats for species of animals and plants preferring dry and warm living conditions. Dry walls are placed under special protection.

Emission inventory

Spatial distribution of emissions, usually related to square kilometre areas.

Energy Saving Ordinance (Energieeinsparverordnung, EnEV)

This Ordinance determines the maximum permitted energy requirement of new buildings. For this, the Ordinance defines requirements for the buildings' consumption of primary energy and the maximum amount of heat loss through the envelope of the building. In the case of building measures at existing buildings, specific heat insulation requirements for exterior building components must be met.

Free-growing hedge

A hedge with local bushes and trees, often planted for wind protection reasons, which defines fields and meadows in former rural cultural landscapes. Besides the purpose of protecting cultivated plants, it also serves as an enclosure. It is placed under special legal protection as habitat for wild animals and plants.

Garden shed area

Area outside settled areas, where the construction of garden sheds is controlled by a development plan. The creation of garden shed areas is to concentrate recreational uses in these areas in order to prevent urban sprawl in sensitive areas.

Grassland

Agricultural area, where grass and herbs are cultivated as permanent crop. Grassland in the narrow sense of the word includes meadows, pastures or mowing pastures.

Green spaces in traffic areas

Planted areas and lawns including the batters in cuts or on an embankment, which are part of public roads, paths and squares.

Groundwater backwater = groundwater increase

Increase of groundwater table or groundwater pressure surface as a consequence of technical measures, requiring the narrowing of the run-off cross section for the groundwater.

Groundwater monitoring

Systematic monitoring of the groundwater for a continuous supervision of groundwater table and groundwater quality, an analysis of existing changes and a comparison with the prognosis of future changes.

Groundwater protection

Measures for the qualitative and quantitative conservation of groundwater. Groundwater protection deals with the preservation of the water yield by means of groundwater withdrawals for example and groundwater quality, like in the case of impurities.

Groundwater recharge

Precipitation which neither runs off above the ground nor evaporates on the earth's surface, but seeps into the ground. Part of this water is absorbed

by roots, the rest is added to the groundwater body. This amount of precipitation makes up the amount of groundwater recharge.

Groundwater table

Path of the groundwater surface within an aquifer (unconfined groundwater table). Groundwater is confined when the groundwater pressure surface lies above the aquifer's capping surface, e.g. within a hardly porous covering layer.

Groundwater

Water located beneath the ground surface, cohesively filling cavities in the earth's crust and whose movements are exclusively or nearly exclusively determined by gravity and the frictional forces provoked by the movement.

Groundwater, artesian

Groundwater whose pressure surface lies above the earth's surface.

Habitat

Biological designation for a characteristic living space and location of wild species of plants and animals. It can consist of several habitat patches fulfilling different functions, like food intake, reproduction or retreat.

Harmful soil changes

Harmful impacts on soil functions that are able to bring about hazards, considerable disadvantages or considerable nuisances for individuals or the general public (§ 2 para. 3 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Heath

Uncultivated territory, mostly poor in nutrients, sandy and stony, parts of it extensively pastured. Is predominantly covered with ornamental bushes in Northwest Germany. In Southern Germany as neglected grassland on lime soil and in mountainous and hilly country also as thin pine forests.

Hydrogeology

Special field of geology dealing with groundwater. Analysis and description of the groundwater balance, groundwater dynamics, hydrochemical properties and the interactions between groundwater storeys.

Immission

Immission as used within the Federal Immission Control Act (BImSchG) means any air pollution, noise, vibration, light, heat, radiation and similar effects on the environment which affect human beings, animals, plants and other.

Land take

Conversion of grassland into settlement area. Stuttgart's average annual land take amounts to an area of 65 hectares. About 50 % of Stuttgart's territory was used for settlement purposes in 2000.

Legally binding land-use plan

A legally binding urban development plan, which determines future structural or other uses for parts of a municipality allowing for a precise division into parcels of land. It is developed on the basis of a preparatory land-use plan.

Licence, water right licence

Required pursuant to § 76 of the Water Act Baden-Württemberg (Wassergesetz, WG) for installations or buildings, provided that they have an influence on the water run-off, water maintenance and water management or can impair the ecological functions of waters, fishery and shipping.

Litter meadow

Unmanured meadow on periodically flooded or wet land, which is mowed in autumn. Its function is not the production of pasture but of litter for cattle sheds.

Mature stand

Forest stand with a high percentage of standing and fallen old trees and deadwood, like in non-managed natural forest reservations. Due to their large diversi-

ty of structures, mature stands are significant for the occurrence of species living in old trees or deadwood, like hole-nesters, insects living in wood or mushrooms.

Meadow orchard

Traditional form of fruit cultivation with long-stemmed fruit trees, which are planted in the form of a grove. The area typically has several uses: It is used for both fruit production (primary use) and hay production or as a pasture (secondary use).

Mineral water

Groundwater with a higher concentration of dissolved substances with a minimum level of 1,000 mg/kg (Nauheim resolution, Nauheimer Beschlüsse). Mineral water is of natural purity and has its origin in underground water resources protected from impurities.

Natural assets

Natural components of the environment and basis for human life. They include for example natural landscape factors like soil, minerals, water, air, fauna and flora.

Neglected grassland

Plant community on land poor in nutrients, especially on dunes or in mountainous and alpine regions with low concomitant vegetation predominantly composed of grass and herbs.

Nitrogen dioxide

Nitrogen dioxide (NO_2) is a reddish-brown gas with a sharp and biting odour, which is very corrosive. Strong solar radiation reduces NO_2 to NO and O and contributes to the creation of ozone. NO_2 is an irritant gas, affecting particularly the mucous membranes of the upper respiratory tract.

Noise

Interfering sound or interfering noises are termed "noise" (see also Decibel).

Old deposits

Closed-down waste management installations and

other real properties, in/on which waste has been treated, stored or landfilled (§ 2 para. 5 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Ornamental heath

Natural or cultivated type of biotope along forest lines, which is characterized by ornamental bushes like heather, blueberries, Alpine roses or crowberries.

Oxbow lake

Natural body of standing water, created when a meander is cut off from the main river.

Permit, water right permit

The use of waters (surface waters and groundwater) requires a water right permit.

PM₁₀

The significance of PM_{10} , especially of diesel soot, for air hygiene has been much discussed in recent years, in particular following toxicological tests. The carcinogenic effect of PM_{10} is the result of the particles' mechanic-irritative properties.

Pollutant concentration

Mass of substances polluting environmental elements (air, water, soil). As for air, it refers to the volume of polluted air and is indicated as mass concentration in mg/m³. As for gases, it refers to the volume of the pollutants in relation with the volume of polluted air, indicated in cm³/m³ or ppm = parts per million (10,000 ppm = 1 % vol.). The conversion of mg/m³ into ppm depends on the type of gas as well as on pressure and temperature.

Potentially contaminated sites

Sites suspected of being contaminated sites are former waste disposal sites and former industrial sites that are suspected to contain harmful soil changes or other hazards for individuals or the general public (§ 2 para. 6 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Preparatory land-use plan

Presents the framework programme for urban

development for the whole municipal territory and a longer period of time (about 15 years).

Primary energy requirement

The primary energy requirement not only considers a building's total energy requirement but also losses through preceding process chains outside the building due to the extraction, conversion and distribution of the particular fuel.

Protected sites

There are different levels of protection for protected sites with the target of nature and landscape protection. They include for example nature reserves, landscape conservation areas, national parks or biosphere reserves.

Protective planting

One to several rows of planted trees and bushes. They protect from erosion, immission, noise, view or wind, prevent soil dehydration and avert cold-air flows.

Public agency

This often used legal term summarizes public facilities and offices which must or should be consulted in the context of particular public or private projects (especially in the field of building and planning legislation) in order to give their opinion on the project from the point of view of their responsibilities in accordance with the individual acts. Public agencies include for example all public facilities and utilities which carry out spatial planning themselves (e.g. landscape authority, water authority), institutions of the economy (e.g. the Chamber of Industry and Commerce, the Chamber of Agriculture), of the welfare work (e.g. Caritas, Diakonisches Werk, German Red Cross (DRK), Workers' Welfare Association (AWO)), police, traffic and supply companies and churches.

Ravine

Path in a cleft, mostly in areas with slightly erodible soils (loess, bunter). This cultural landscape element develops, depending on the age, in decades or centuries of use. This biotope is placed under special protection.

Reed

Plant community in the shallow water and riverbank areas of waterbodies. It consists of tall, grass-like plants like common reed, bulrush or reed canarygrass. Reed is placed under special protection.

Rock barrier

Line of fieldstone deposits, which were picked up from fields and stacked at the margins of plots. A fieldstone barrier is an extremely dry and warm habitat and is settled by plants, insects and reptiles preferring warm and dry living conditions.

Sealing

The covering of areas with seamless traffic facilities or buildings, preventing the seepage of rainwater.

Sedge reed

Plant community predominantly consisting of grasses on seasonally flooded silting zones along bodies of standing water or on fen soil, which is mainly vegetated with sedge species.

Settlement pressure

Demand for new dwellings. Settlement pressure is the result of both people moving in from outside and the relocation of the resident population.

Small constructions

Roofed, closed or open architectural objects, not for residential use. They are mostly dish and garden sheds for recreational use, which are built in areas for which no legally binding land-use plan exists. Small constructions are often in conflict with the targets of nature protection and landscape conservation.

Soil functions

(Pursuant to § 2 para. 2 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz) *Natural functions:*

Basis for life and a habitat for people, animals,

plants and soil organisms; part of natural systems, especially by means of its water and nutrient cycles; a medium for decomposition, balance and restoration as a result of its filtering, buffering and substance-converting properties and especially groundwater protection.

Archive functions:

Archive of natural and cultural history.

Functions useful to man:

Holding of deposits of raw materials, land for settlement and recreation, land for agricultural and silvicultural use, land for other economic and public uses, for transport, supply, provision and disposal.

Soil map

Presentation of the spatial distribution of soil types (genetic soil units) and their functions. Three maps have been established for Stuttgart, displaying soil types, soil with natural vegetation as well as the soil's filtering and buffering properties for heavy metals.

Soil material

Material from soil and its original substrates (DIN 19731).

Soil protection

The purpose of soil protection is the sustainable preservation or restitution of the soil functions.

Soil

Upper layer of the earth's crust, as far as this layer fulfils soil functions, and including its liquid and gaseous components, except groundwater and beds of waterbodies (§ 2 para. 1 of the Federal Soil Protection Act, Bundes-Bodenschutzgesetz).

Spa

Installation for the catchment of mineral and spa water, used for medical purposes due to its chemical composition, physical properties or balneological experiences.

Stress

Physical, chemical, biological or other influence on water, soil, air, food or organisms with actual or expected significant negative implications.

Urban climate

While the climate in undeveloped areas largely depends on natural conditions and factors, the climate in towns and cities is influenced by buildings and is called urban climate. The term also includes changes in the natural composition of the air as a consequence of man-made influences. Urban climate = climatic conditions and air hygiene within the city.

Urban land-use planning

Urban development plans are drawn up by the municipalities. They consist of preparatory land-use plans and legally binding land-use plans. They are to guarantee sustainable urban development.

Water protection

Measures taken to preserve waters as habitats, keep the water balance efficient and prevent a modification of the water run-off. Legal foundations: Federal Water Management Act (WHG) on the national level, Water Acts by the Länder (WG) on the federal level.

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