

**Deutsches Institut für Urbanistik  
(German Institute of Urban Affairs)**

**Occasional Paper**

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**Monitoring**

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## **MONITORING**

Monitoring is a completely new challenge for German cities. Accordingly urban planners in Germany are very uncertain at the moment what monitoring in urban land use planning means, which tasks it is implicating and how to cope with them.

I would like to start my contribution with a glance at the German implementation of Article 10 SEA-Directive. In the following I will take up some of the questions concerning monitoring which German planners have. As far as the results of the practice test already give answers on these questions or at least an approach, I will present those, too. Concluding I will illustrate some practical ideas for the design of a monitoring concept which have been developed in the practice test.

### **Implementation of Article 10 SEA-Directive**

The German Building Act is being amended at the moment to implement the requirements of the SEA-Directive into national law. The draft bill has been adopted by the German Bundestag - the national parliament - on April 30<sup>th</sup>, the Bundesrat - the Federal Assembly - still has to accept the law. It is expected that this agreement will be given, so that the amended building act can be set in force right on time on July 21<sup>st</sup>.

The wording of the monitoring obligation in the German building act is quite similar to Article 10 SEA-Directive. According to Section 4c of the amended code:

- communes monitor the significant environmental effects of the implementation of plans and programmes
- in particular to identify unforeseen adverse effects at an early stage
- and to be able to undertake appropriate remedial action.
- In doing so they use the monitoring measures mentioned in the environmental report
- and the information of the authorities.

The obligation to monitor the effects of the plan concerns all urban land use plans - both preparatory and binding plan. Furthermore regional, traffic and other spatial plannings are affected by the obligation but those have not been subject of the practice test.

So the responsibility for monitoring will be given to the communes who are also responsible for local urban planning as they have local planning autonomy. The rather general wording of Section 4c, gives the communes a wide scope for implementing the monitoring obligation in the individual case.

One result of the practice test was that the participating towns appreciate the communal responsibility for the monitoring as well as the scope of implementation. The regulation gives them the possibility to develop an individual monitoring concept depending on the plan respectively the planning subject and the size of the commune.

Of course there are other opinions:

- Some urban planners argue that the legal uncertainties have been passed on to the communes by implementing the European directive 1:1 into national law. However we presume that those will be convinced by the advantages of the local, case-based implementation, too.
- From the point of environmental planning some ask for the regulation of minimum standards for the monitoring to ensure a minimum quality.

The information of the authorities mentioned in Section 4c refers to article 4, paragraph 3 of the German Building Act. According to it the authorities inform the communes if they take notice that the implementation of a plan has significant environmental effects. In this context “authority” means a non-local specialized authority for example on regional or county level.

To be able to comprehend this regulation one has to know that in Germany urban planning und environmental planning are mostly not located in the same department. In the larger cities there are local environmental departments which are in charge of the environmental tasks. For example they are responsible for the continuous survey and observation of the environment. With a view to the monitoring the major task will be to coordinate the different local departments.

The smaller towns do not have local environmental departments, authorities on the county level are responsible for their environmental issues. In addition there are other authorities for example on state level. For this reason the local authorities depend on using the information of the non-local authorities to fulfil the monitoring-obligation.

### **Monitoring in urban land use planning - what does that mean?**

Additionally to the practice test we organized a workshop concerning monitoring in urban land use planning in the German Institute of Urban Affairs last autumn. Representatives of local urban planning and local environmental planning as well as representatives of non-local environmental authorities took part.

In the following I would like to illustrate - as a result of practice test and workshop - the crucial questions and points of discussion concerning the monitoring:

- Which requirements for urban land use planning are caused by the new regulation? What is the subject of monitoring?
- When does it start and how often will it be repeated?
- Which methods and procedures to gain environmental information do already exist in the communes and how can they be used for the monitoring? Is there an additional need for information?
- Does monitoring cause an additional effort - in terms of money and persons?
- What are the consequences for urban land use planning if monitoring detects significant adverse environmental effects?

### *Subject of monitoring*

The participants of the practice test analysed the wording of Section 4c very closely and thus differentiated: The regulation states that the significant environmental effects shall be monitored, in particular to identify unforeseen adverse effects.

With view to this chart: Consequently it is primarily the upper quarter on the left side of this circle that has to be monitored. The regulation does not mention the non-significant effects that lie below this line and it is only in the second place about the non-adverse effects that lie above the threshold of relevancy.

According to the considerations of the city of Leipzig monitoring could be based on a concept like this:

- Non-significant effects are observed roughly and with a wide scope.
- If it is found out that significant adverse effects (possibly) exist or that they are in development, a focused and detailed monitoring will start.
- If the result is that significant non-adverse effects (possibly) exist or that they are in development, a focused but not detailed monitoring will start.

### *Timing and frequency of the monitoring*

Concerning the timing of the monitoring it has been discussed whether it should start with the approval of the plan, during the realization of the plan or not before the plan is completely realized. It is obvious that it does not make sense to start the monitoring with the approval of the plan, because without realization there are no environmental effects. As well, it was said, it would not be appropriate to wait until the complete realization of the plan, as this can take a lot of time. Consequently it will result in deciding on timing and frequency from case to case and in dependence on the planning subject and the size of the plan.

### *Utilization of existing environmental information systems*

In German communes there already are several environmental observation systems that collect sectoral environmental data. In the interest of an effective monitoring the most important point is to combine and to bundle the existing information.

For example in the city of Reutlingen they have a Communal Environmental Indicators System (German abbreviation: KUIS) which summarizes and evaluates environmental data. It is being updated once a year. How does the KUIS work? Four environmental subjects of protection - soil, water, air/climate and biotopes - as well as two other environmental topics - transport and waste - are being observed through the development of 16 indicators. To evaluate these results, they are compared with county or federal average values or threshold values.

For the observation of the environmental topic „energy“ and the protection subject „Human health“ indicators still have to be added. In the opinion of the environmental appointee of Reutlingen the KUIS provides a very good basis for the monitoring of preparatory land use plans. But as the data is only representative at the level of the whole city, this basis is not suitable for the monitoring of binding land use plans. Further ideas of the city of Reutlingen concerning this point will be presented later on.

Communes which have environmental data on communal level at their disposal or which have already established an environmental information system will not have problems monitoring the environmental effects of preparatory land use plans. Probably the survey of additional data will be necessary only in a few cases, for example with regard to environmental topics which have not been subject to the observation yet. The smaller towns which do not survey environmental data on their own emphasize that the information of the authorities is very important for them. They depend on being informed by the authorities if the environmental observation concludes that unforeseen adverse effects occur.

### *Effort of the monitoring*

Many German communes are afraid that monitoring will cause an additional demand for money and employees, which they are not able to supply as they are short of funds.

In the practice test the participants concerned themselves very intensely with the monitoring and the conclusion was that they expect more work only for the first period of time - as long as they need to familiarize themselves with the monitoring-procedures. They presume that the additional effort will decrease as soon as they gain experience and have a certain routine. In their opinion it is only a question of time that monitoring will be a natural part of the planning process.

### *Consequences*

The environmental report has to contain information on the intended monitoring measures. If they are missing or insufficient the justification of the plan is incorrect which can invalidate the plan. But what are the consequences if significant adverse effects on the environment which have not been foreseen are monitored - and thus no measures to reduce or offset these effects have been defined?

The urban land use plan is not invalid because of that, but if substantial impairments of nature or humans occur, remedial actions need to be undertaken. The necessity to intervene already arises according to the current law from the defined thresholds. If for example the noise-impacts of a street are too heavy, there are remedial actions like speed reduction or diverting the flow of traffic. To change the realized plan on paper only, will not solve the problem.

First of all this conclusion will cause a learning process for future planning: if it is detected by monitoring that the prediction has been wrong, the planners can improve their methods of prediction for future planning. Thus monitoring qualifies planning.

## **Monitoring concept - approaches of the cities Leipzig and Reutlingen**

In the following I will present the considerations of the cities Leipzig and Reutlingen on the design of a monitoring concept. Both cities took part in the practice test and the workshop and thus are somewhat ahead in this topic.

### *Leipzig*

Discussing the subject of monitoring I already mentioned the consideration of the city of Leipzig on monitoring with different intensity and detail depending on whether the significant effects are adverse or not. Differentiated like that a monitoring concept for a binding land use plan with the impacts “traffic noise” and “industrial noise” could look like this:

**Traffic noise:** The threshold of relevancy is provided by an orientation value in DIN standard 18005, annex 1 (German Industrial Standard). As soon as a certain part of the plan is realized, the observation starts: traffic censuses are used to determine the traffic noise. If the result is that the orientation value is exceeded or possibly soon exceeded monitoring starts: the traffic noise is being measured.

**Another example: industrial noise.** The residents “observe” the noise level. If there are complaints from residents concerning noise pollution, the official monitoring begins: the sound level is being measured.

### *Reutlingen*

The city of Reutlingen has developed another monitoring matrix which is structured according to four questions. These are:

What?	Likely environmental effects of the binding land use plan
When?	Timing of the monitoring and where required the frequency
Who?	Responsibility for the monitoring
How?	Type and content of the monitoring method

According to this scheme a monitoring matrix for a binding land use plan for a residential area has been developed. I will show a part of this matrix.

## **Conclusion**

There will not be only one kind of monitoring but depending on the content of the plan and its size a suitable monitoring concept will be developed. The size of the planning commune and its labor capacity will have an influence on the concept as well. Cities like Leipzig and Reutlingen which have their own environmental departments and environmental information systems will invent other monitoring concepts than smaller towns which have fewer employees and rely on the information of county authorities.

A pragmatic approach could be that - according to the examples of Leipzig and Reutlingen - for certain effects of a land use plan appropriate monitoring-schemes are developed. Depending on the planning and the expected environmental effects these schemes could be combined in the sense of a modular construction system to get a suitable monitoring concept.

The participants of the practice test estimate that significant adverse effects will be monitored only in a very few cases. According to their experience the prediction of environmental effects of land use plans is very reliable, thus monitoring will primarily control the remedial actions.