Minnerva Software

Harnessing the Web for Transport Planning

The Minnerva Transport Assessor

1 What is the Transport Assessor?

The Transport Assessor® is **aimed at better decision-making on transport policies and plans**, which is achieved through improved communication and understanding of often complex data. The system is **suited to varied public agencies**, including local authorities managing Local Transport Plans.

It is a web-based system for helping transport policy makers and analysts. Its chief feature is the way that **it makes transport-related information available in an intuitive way to different groups of people** who may have different interests and perspectives on transport matters.

The Transport Assessor uses GIS[1] software to make much of its **information available in the form of readily-understood maps**. This is done in such a way that use of the Transport Assessor only requires a standard web browser[2], but the user can still control and analyse the information on the map much as if they had a GIS on their own computer. This is done using MapInfo's MapXtreme® web-enabled GIS software technology.

The Transport Assessor not only makes information available but it also supports multi-way communication through a built-in message board so that **interested parties can express views and exchange comments**.

The Transport Assessor's control system **allows information to be published at levels suited to varied readerships**. These can include the general public, but also politicians and their senior policy advisors, as well as technical specialists such as policy analysts and transport modellers.

The Transport Assessor is implemented by **a software system that is customised for your own interests**. Much of this customisation is 'data driven' and is simply a matter of entering information, but standardised changes to code are possible to make the system better tailored to the situation and needs of your organisation.

2 How Does It Work?

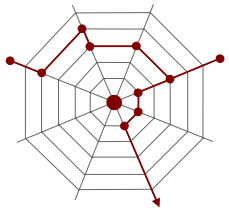
The information at the centre of the Transport Assessor is accessed via a web server, that is, a computer accessed via an Internet Service Provider (ISP). This means that the information is hosted, securely, by a third party's computer and is administered for your organisation by Minnerva. This implies that your own organisation's computing system is not implicated in running the Transport Assessor. Nevertheless, the system is open and responsive to the pattern of your policy interests and concerns as they vary over time.

Users simply need to know the web address for your implementation of the Transport Assessor. As with any web system, this can be achieved from a hyperlink in your standard web site or by any suitable means.

The web system supports a public view, so some information is always available, but more complex or sensitive information can only be accessed by registering via the Transport Assessor for privileged use. You determine the different categories of privileged users but, typically, these categories would include senior decision makers, policy analysts, and technical specialists. The registration process requires authorising action by an administrator, so firm control can be retained of who gets to see what information.

It should be noted that the value of the Transport Assessor is restricted if information availability is controlled too tightly, but obviously some information is confidential and other information requires an understanding of its context if it is not to be misinterpreted.

[1] Geographic Information Systems
[2] E.g. Windows Internet Explorer, Netscape



3 Managing the System

3.1 Getting Established

The primary requirement to establish your implementation is to populate the web database with transport data. There are two principal sources of this information, namely, surveys undertaken to monitor various aspects of transport conditions in all or part of your area and, secondly, outputs from transport models. However, much other information can be included within the system, including documentation and other non-spatial electronic information.

This set of information will grow over time and an incremental approach works well. However, it is useful that the Transport Assessor is first established in connection with some related topical and significant transport policy or scheme activities.

In practice, it takes a little time to assemble and organise the first set of information, although the usual process is to copy from existing sources, with more or less transformation of the data depending on circumstances.

Much of the data is organised into database tables that can be viewed as 'layers' in a map. The system will use digital map data to which your organisation already has licences, or additional map information can be provided.

Most of the work is done off-site and, once the customised implementation is commissioned, the Transport Assessor is available to all via their web browsers without the need to install software.

3.2 Maintaining the System

As with any information source, continued value from the Transport Assessor requires a diet of new information. This should be supplied naturally from surveys and modelling studies as they are undertaken.

Data will generally be transferred from another system to the Transport Assessor, but it is possible for the Transport Assessor to become the system in which data is stored in the first place. That is, the Transport Assessor acts as a primary repository of transport data, as well as providing the means to disseminate the information.

4 Achieving Results

4.1 Using the System

As with any information system, people will only use it if is easy to use and informative. After all, much of the information can be obtained by other means.

The supreme feature of web-enabled information is its accessibility, so this provides a natural starting point. This access is easy to provide for the presentation of relatively static information and can be very useful. For example, tables of aggregated information may be all that is required for many users of survey data. However, others will want to explore the data more deeply. For specialists, this will mean using powerful desktop application software, for which they will require more direct access to the underlying data. There remain, though, many users who want to understand data in more depth than pre-packaged presentations, but who do not have the opportunity or time to master complex application packages.

With the Transport Assessor users can access maps, organised by themes of transport policies and plans. This means that users get to see what is of most interest to them.

The Transport Assessor also supports the concept of a 'timeline', as indicated in Figure 4.1 on the next page by the arrow. The timeline allows information to be understood as it was in the past and present, as shown by monitoring, and how it will be in the future, as forecast by modelling. Clicking on the dates of the timeline[3] reveals information for that time and comparisons with another time.

The timeline diagram also shows policies and future plans as represented by associated reports. These reports can be accessed by right-clicking on their image, or their information can be viewed in map form by double-clicking. Of course, the details and number of the plans and policies will depend on your particular implementation

[3] Shown here colour-coded with green for the past and red for the future.

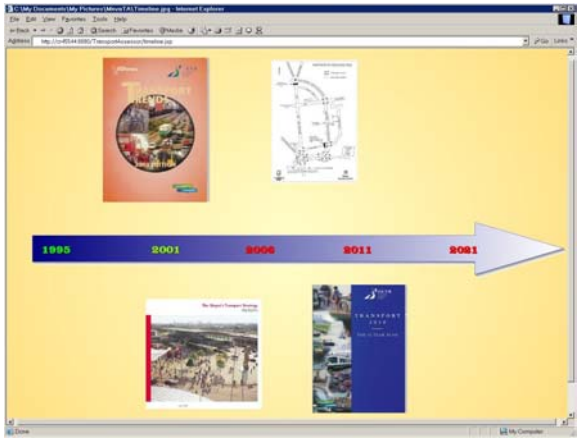


Figure 4.1 A 'Timeline' Linking Past and Future

Figure 4.2 shows such an example of map-based information application. The operations for the web-enabled version are deliberately simpler than that for typical GIS desktop applications, but the user may still exercise considerable control via their web browser.

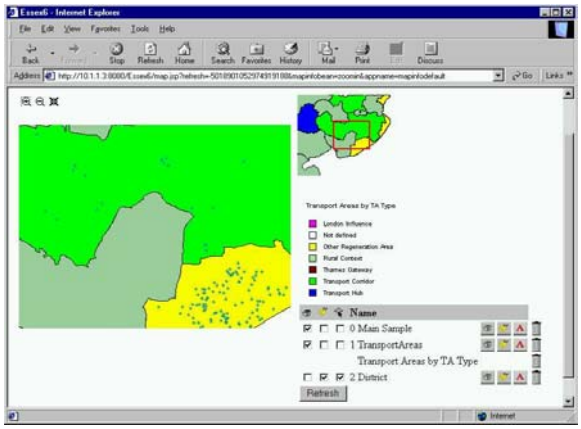


Figure 4.2 Web-enabled GIS application

4.2 Links with Modelling

The Transport Assessor is designed to work with published information, so it will typically access base year and forecast information obtained from validated transport models.

Information available from transport models includes passenger and traffic flows through networks, patterns of accessibility provided by public transport, and patterns of travel demand across a study area.

This information can be readily imported from transport models, see Figure 4.3, and is then transformed into map layers for viewing by the Transport Assessor.

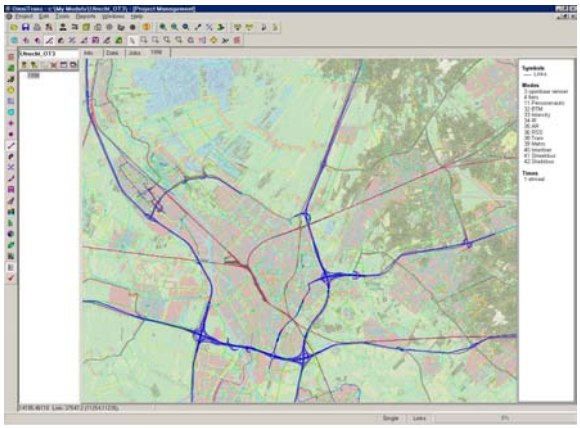


Figure 4.3 Example Model for Forecasting Transport Conditions

4.3 Scheme and Policy Appraisal

Modern approaches to appraising transport plans require consideration of a number of issues, which standard methods summarise in a standard appraisal table[4]. These valuable and necessary techniques are strengthened by the Transport Assessor, which is particularly suited to showing the geographical spread of effects.

Key performance indicators of policies and plans can be readily included within the Transport Assessor.

4.4 Links to Planning

There is a natural link between transport and land use planning issues that is readily highlighted through the way that the Transport Assessor easily handles both types of information.

4.5 Getting Value

The value derived from the Transport Assessor can be difficult to quantify but is real enough. Its ease of access means that it is particularly valuable for improving inter-departmental communications, while its unifying effect on information means that expensive measured and forecast data is used to full effect.

[4] As in DfT's NATA methodology and its AST summaries