



Available online at www.sciencedirect.com

# SciVerse ScienceDirect



Procedia - Social and Behavioral Sciences 48 (2012) 2597 - 2606

Transport Research Arena- Europe 2012

# Accessibility management at municipal level for people with restricted mobility: The case of Thessaloniki

Panagiotis Tsalis<sup>a,\*</sup>, Aristotelis Naniopoulos<sup>a</sup>

<sup>a</sup>Transport Systems Research Group, Aristotle University of Thessaloniki, Dept. of Engineering, AUTh Campus, Thessaloniki 54124, Greece

#### Abstract

Ensuring accessibility throughout the "travel chain" is fundamental in order to ensure equal opportunities for people with restricted mobility. This paper deals with the need of investigating the municipal services related to the procedure of ensuring accessibility. Intending to develop a system that can be applied to municipalities of different size, the Municipality of Thessaloniki was used as a case study. The municipal structure was analysed, and a form of Delphi method was established through contacts with the corresponding municipal departments, members of the Municipality of Thessaloniki Accessibility Office, people active in disability issues as well as persons who are disabled themselves.

© 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of the Programme Committee of the Transport Research Arena 2012 Open access under CC BY-NC-ND license.

Keywords: Accessibility; Universal Design; Municipal services

<sup>\*</sup> Corresponding author. Tel.: +30-6938-475-556; fax: +30-2310-995-789. E-mail address: pwlet14@yahoo.gr, ptsalis@civil.auth.gr

#### 1. Introduction

Ensuring accessibility throughout the "travel chain" is fundamental in order to ensure equal opportunities for people with restricted mobility. The notion of "travel chain", as used in this paper, includes:

- The internal built environment (public buildings/ infrastructure)
- The external built environment (public spaces, connecting routes)
- Public transport (accessible vehicles and transport stations, network coverage)
- Information provision

The notion of "restricted mobility" includes people with disabilities, the elderly, pregnant women, children, those with unusual physical dimensions, those who face difficulties in understanding and communication, etc. According to the Greek Ministry of Public Works, these population groups account for more than 50% of the total population. (Greek Ministry of Public Works, 2003)

Despite the fact that in the fields of "accessibility" and "Design for all" significant legislation and guidelines have been developed that, more or less, cover the needs of the designer on a micro scale, Greece still lacks a fundamental accessibility improvement strategy, both on national and on local authorities level.

It should also be noted that, internationally, there is a lack of a definite accessibility evaluation system on Local Authority level. Some of the reasons that have led to this include:

- Lack at local authority level of a concrete disability policy
- Lack of an holistic approach on the accessibility issue
- Lack of an International Certification on accessibility issues
- Lack of common legislation between countries on accessibility issues
- Lack of common international guidelines on accessibility issues

In any case, it is obvious that the development of an accessibility policy on Municipal and Local Authority level in general, has a considerable significance for Greece. Local authorities play a fundamental role on providing accessible services to their citizens, as they are responsible for both the planning and the creation of the built environment, with their role being strengthened further. In the transport sector, many municipalities operate municipal urban transport services and are responsible for the design and operation of supporting infrastructure (e.g. bus stops). Finally, local authorities are responsible for a large percentage of public services to citizens and, in many cases, are responsible for information provision.

The Greek Municipalities in their current form rather pose significant obstacles to the unobstructed and safe movement of their citizens with restricted mobility. These are due to a combination of:

- Lack of an holistic approach on the accessibility issue
- Non proper implementation of existing accessibility guidelines and abundance of improper construction
- Preoccupations concerning disability
- Lack of information provision

The lack of a holistic approach on accessibility issues in particular is obvious, despite the fact that, in the last few years, the Ministry of Internal Affairs has made significant efforts towards the promotion of accessibility. Characteristic examples include: Circular 18036/22.09.2002 "Ensuring access of people

with disability to public buildings", where all Ministries and Regions are asked to assign to at least one employee the responsibility of all projects related to accessibility improvement, and Circular 8303/08.02.2008 "Network of accessibility of People with Disability – eliminating obstacles from public spaces used by pedestrians and People with Disability", in which the creation of accessible environments for the safe and unobstructed movement of pedestrians is assigned to Local Authorities.

Despite these legislation efforts, the Accessibility offices created did not result in a marked improvement of the accessibility level offered to the citizens, as they had a strictly consulting role, their personnel did not have as sole responsibility the promotion of accessibility and did not have under their jurisdiction the examination of the existing accessibility level and the approval of new designs and constructions. Thus, many constructions lack accessibility provisions or the provisions created act merely as an "alibi" to the rest of the society, not ensuring the equal participation of citizens with restricted mobility to public life.

The standard presented here aims to cover the need for the creation of a mechanism that will lead Municipalities to a more holistic approach on accessibility issues, giving at the same time the tools for ensuring the provision of an accessible environment to citizens, on both a policy and an infrastructure level. In essence, the aim is to develop a useful tool, based on the principles of standardization, for the assessment and continuous improvement of the provided accessibility.

# 2. Methodology

The creation of the proposed managerial structure and standard for the assessment and continuous improvement of the accessibility of Municipalities was based on both research in relevant bibliography and the application of a form of "Delphi method" among involved actors, in order to identify the areas where the proposed standard would be implemented in the municipalities' structure as well as the obstacles that citizens with disabilities face in their everyday lives. In this process, employees of the Municipality of Thessaloniki, persons specialized in accessibility issues, persons specialized in disability issues as well as persons with disability took part.

More specifically, the process involved:

- Research of existing practices concerning accessibility procedures and disability policies on municipal level
- Research on standardization methodologies that are employed in various fields
- Research on accessibility policies employed by various municipalities
- Creation of the basic structure of the standard based on the structures of Environmental Management Standards, and in particular the Port Environmental Review System (PERS). This, due to its characteristics (its implementation is focused more on monitoring the progress the authority makes and has a more "voluntary" approach) was considered more suitable as a basis for the creation of a similar notion focused on accessibility. (Ecoports, 2008)(US Environmental Protection Agency, 2008)(ISO,2009)
- Examination of practices followed at the Municipality of Thessaloniki, its structure, the divisions and offices involved in the accessibility provision process, in cooperation with the members of the Accessibility Office of the Division of Design of Architectural Works.
- Development of a "task model" for users of the basic groups of people with restricted mobility, according to the standards set by the European Projects TELSCAN and TELAID, with the cooperation of citizens with restricted mobility.

- Examination of existing accessibility evaluation methodologies. Enhancement according to the data developed from the task model and relative Greek Legislation.
- Development of a methodology for the examination of infrastructure's accessibility level and verification of it with the participation of users and persons specialized in accessibility and disability
- Pilot implementation of the developed methodology. The results led to restructuring according to in situ application. This restructured methodology was again evaluated by the team of experts and this process was continued until consensus was achieved.
- Finalization of the proposed standard and implementation in the Municipality of Thessaloniki.

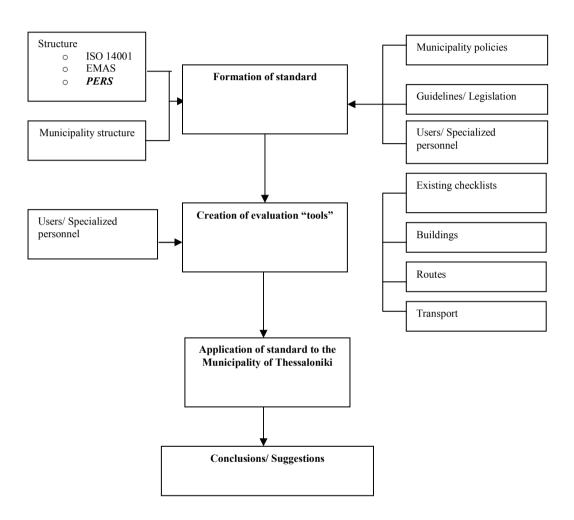


Fig.1. Methodology for the creation of the proposed standard

#### 3. The proposed standard

The process described above led to the creation of a proposed accessibility standard which includes the following main parts:

- Part 1: Short description of the Municipality and its characteristics that are related to accessibility
- Part 2: Policy statement of the Municipality concerning the equal participation of citizens with disability
- Part 3: Actions that are related to accessibility. Relevant legislation
- Part 4: Municipality departments related to accessibility and their responsibilities
- Part 5: Accessibility report
- Part 6: Good practice examples

The aim of Part 1 is to provide a general description of the Municipality as well as general information that is related to the municipality's accessibility provision level. This includes

- vital statistics (Municipality's area, population, population of citizens with disabilities, population of children under 9 years old and elderly which constitute vital groups of people with restricted mobility. It should be noted that Greek municipalities do not have data of the number of citizens with disability under their jurisdiction)
- municipality's importance in the area
- municipality's city plan
- characteristics of Municipality's districts

In Part 2 a policy statement on the issues of accessibility and disability in general is proposed. This is based on well known accessibility policy statements, focusing on elements related to Municipality's function. (EIDD, 2004) (Greek National Association of People with Disabilities, 2008) (UN, 1993)

In Part 3 Municipality's actions that are related to accessibility are identified. In order to effectively manage its accessibility issues, each Municipality has to identify all its actions that, according to its managerial structure, are evolved in the accessibility process. The aim is to identify all forms with which the accessibility notion is evolved in the Municipality's actions, their management according to existing legislation, as well as the use of relative performance index which would signify the Municipality's improvement. In essence, this creates a Table like Table 1. (Greek Law 1798, 2005).

The Performance Indexes used could differ focusing on each Municipality's needs. Indicative indexes include number of studies focused solely on accessibility improvement, number of construction projects focused on accessibility improvement, number of studies where accessibility level was evaluated, number of personnel trained on accessibility issues etc.

In Part 4 Municipality departments related to accessibility and their responsibilities are identified. The aim of this part is to give the Municipality the ability to show that it has developed the structure needed to achieve its accessibility improvement goals determined by the accessibility policy described in Part 2. Part 4 will produce a Table similar to Table 2. (Greek Law 1798, 2005).

Table 1. Identification of Municipality's actions related to accessibility

S/N	Authority/ Division responsible	Interested groups	Legislation	Additional info
	Actions			
	Division of Public Relations			
	Informing citizens with disabilities about Municipality's provisions	Citizens with disabilities		
	Division of Organization and Methods			
	Collecting statistical data about citizens with disabilities	Citizens with disabilities  - Public authorities - Municipal divisions		
	Division of Road Construction			
	Creation of accessible pathways and pavements	Persons with reduced mobility	Law18A15.01.2002	
			Circular of Ministry of Internal Affairs 8303/08.02.2008	
			Circular of Ministry of Internal Affairs 20/01/09	
			Circular of Ministry of Public Works 8298/26/3- 3-04	
			Accessibility design guidelines	

Table 2. Responsibilities of specific personnel as identified in Part 4

Responsibilities of specific personnel on accessibility issues  (Persons responsible for the following actions)				
Action	Person - position	Division		
Ensuring accessibility in the construction phase		Division of construction of architectural works		

In part 4 a structure for the creation of an Accessibility Committee which could play an important role in achieving the improvement of the Municipality's offered accessibility level is also described. This consists of two distinct subcommittees.

The first sub-committee has as a main aim to achieve cooperation between the main actors involved in accessible design as well as to suggest to the Municipal Board actions that will improve the municipality's

accessibility level. Thus, it consists of representatives form the Municipality's Construction Division, the Architectural Division, the Municipal Police Division etc.

It should be noted that Accessibility Offices will continue to exist under the new scheme. Their members should include representatives of at least the main engineering disciplines, that is:

- Civil Engineer
- Transport Engineer
- Architect
- Mechanical Engineer
- Electrical Engineer

These engineers should only be involved in advising the Municipality's Technical Services on accessibility issues. Furthermore, their approval will be asked for every design and construction completed by the Municipality's Technical Services or external constructors.

The second sub-committee is mainly focused on policy and education issues. Thus, representatives of the Municipality's Public Relations Division, Cultural division, Social services Division etc. participate in it. The main aim of this subcommittee is to suggest to the Municipal Board measures in order to improve procedures and policies related to citizens with restricted mobility, to inform citizens with restricted mobility of the Municipality's actions using means accessible to citizens with sensory disabilities, and to communicate with the Municipality's citizens using various means.

Representatives of local restricted mobility associations will participate in both subcommittees. It should be noted that particular members of each sub-committee may discuss specific design issues while all its members should meet once a month or once every two months, depending on each Municipality's needs. In each case, the sub-committee's members should have received specific training on accessibility issues.

Every four months, the members of the two subcommittees will meet in order to have a complete view of the actions taking place concerning the accessibility improvement in infrastructure, services, procedures and policies. A short essay will be prepared in order to create the final annual report each year which will present the Municipality's progress on accessibility issues.

This report constitutes the Part 5 of the proposed standard. It will be published annually or biannually, and will present in short the standard's data. It will be widely disseminated, using means accessible to citizens with sensory disabilities, and include good practice examples which took place in the period examined.

A template was created to present these good practice examples. The required information includes a description of the problems addressed, reasons that led to the actions taken, description of the actions taken, costs and benefits.

The proposed standard also includes a presentation of all national legislation related to disability, and in particular laws concerning each individual Municipality department. Furthermore, a methodology for the examination of the existing accessibility level is proposed. This is particularly analytical; so that it can be used by personnel not specialized in accessibility, and covers all everyday aspects of accessibility offered to citizens, that is:

routes and open spaces

- public buildings
- public transport
- policies related to disability. (RNIB, 1995)(RNIB, 1999)(UN, 1996)(ADAAG, 1992)

#### 4. Results of the implementation of the proposed standard in the Municipality of Thessaloniki

The proposed standard was implemented in the Municipality of Thessaloniki, with the cooperation of the Municipality's Accessibility Office. Data were collected from various Municipal Departments as well as the research projects "EUVATOS POLIS" and "EUVATOS POLIS 08" which the Municipality completed in cooperation with the Transport Systems Research Group of the Aristotle University of Thessaloniki. The methodology for examining the existing accessibility level was applied to 17 Municipal buildings which covered various uses, more than 10 kms. of major routes at the centre of the city and the 3 most common types of buses used by the local public transport authority. In general, the following results became evident:

- There is significant increase in the number of elderly citizens during the last 10 years which potentially leads to an increase of the number of citizens with restricted mobility.
- Some good practice examples do exist. In public transport these include the purchase of accessible vehicles, the application of telematics that are particularly useful for passengers with sensory disabilities, the creation of Demand Responsive Transport services by the public transport operator and the municipality, the creation in the near future of an accessible METRO line. As far as pedestrian routes are concerned, the newest constructions offer improved accessibility and the newly reconstructed seafront creates a, more or less, accessible axis. The newly constructed buildings offer some accessibility provisions as well.
- The examination of pedestrian routes highlighted the abundance of various obstacles. The created ramps are in most cases not constructed properly, not following the accessibility guidelines as far as their width, their slope and their equipment is concerned. There is distinct lack of tactile signage for pedestrians with restricted vision and many mistakes in the application of Tactile Ground Surface Indicators (TGSIs). The free width and height available was restricted by various obstacles which included tree branches, kiosks, illegally parked vehicles, natural gas installations of buildings adjacent to the pavement, etc. The presence of illegally parked vehicles lead to the installation of bollards on the pavement which in many cases cannot be easily identified, thereby constituting themselves potential hazards. (Naniopoulos, Tsalis, Kalle, 2008)
- The examination of Municipal buildings showed considerable lack of accessible infrastructure. In most cases there are no accessible parking spaces available and the buildings' entrances are only reached via a staircase or an inappropriately constructed ramp. Various obstacles inside the building restrict the corridors' available free width, while existing lifts in most cases cannot be used by wheelchair users. There is distinct lack of colour contrast and information available in alternative formats which would be useful for visitors with sensory disabilities. The examined buildings lacked accessible toilets and accessible equipment in general, their personnel had not received any form of training on accessibility and disability issues and there was no plan for the evacuation of visitors with disability in case of an emergency. (DfT, 2002) (Greek Ministry of Environment and Public Works 2003)
- In general the examined infrastructure showed the need for the creation of good practice guides, guidelines, and standardized solutions on Municipal level. Existing practice leads to the implementation of only the basic provisions demanded by the legislation. The creation of Municipal guidelines which would be stricter than the existing legislation, as well as the standardization of solutions on specific topics throughout the Municipality's construction projects could lead to more efficient solutions and the abolishment of inappropriate practices.

- As far as public transport is concerned, the relatively newly acquired kneeling buses have portable ramps compared to the older vehicles which used mechanical lifts with constant malfunctions. The new articulated buses in particular are well specked for wheelchair users, with the possible exception being a lack of a "back" at the dedicated wheelchair user area. Most of the new buses have wider seats available for passengers with reduced mobility; however their location differs depending to the bus type. The adoption of a standard location would enable their unobstructed use by passengers with restricted vision. The tactile screens of the ticket vending machines may pose obstacles for some passengers. The telematics application informing about the upcoming stops is particularly useful for passengers with sensory disabilities, however a combination of capital and small letters at the VMS signs inside the vehicles could be more readable for passengers with restricted vision. (DfT, 2002)
- As far as policy issues is concerned, the Municipality lacks a clear policy and strategy, even though it is the only Greek Municipality which has signed the Declaration of Barcelona. The Disability/Accessibility office has tried to coordinate all relevant offices with limited success. As the office does not have the authority to reject designs and constructions on the grounds of insufficient accessibility, it is restricted to only consultative work. Thus, a more active role, like the one in the proposed standard in the frame of an accessibility committee is required. The existing services for citizens with disability mostly operate in a "social policy" framework, clearly depicted by the municipal transport service for citizens with disabilities "AINEIAS" which is under the vice mayor responsible for "social policy affairs".

## 5. Results from the creation and implementation of the proposed standard

- Ensuring accessibility of the "transport chain" constitutes an important step towards achieving equal
  opportunities and social integration for citizens with disabilities and restricted mobility in general.
  However, and despite the fact that a complete legislation framework has been created, Greece
  continues to lack a holistic strategy on accessibility issues.
- The notions of standardization and self-evaluation can be applied in the accessibility fields using the basic principles that have been developed in other scientific fields (e.g. environmental management)
- The development of an accessibility policy at local authority level is essential. In Greece the local authorities are responsible for creating infrastructure and providing a large number of services to the citizens. However, in the Greek municipalities, citizens with restricted mobility face a number of problems due to the lack of a holistic approach on accessibility issues, inappropriate application of accessibility guidelines, obstacles resulting from various preoccupations, and lack of information related to accessibility. The creation of accessibility offices by itself did not ensure the creation of accessible infrastructure, as these have been restricted to a consultative role, their personnel does not focus solely on accessibility and the approval of new constructions' accessibility level is not under their jurisdiction.
- Adopting an accessibility improvement standard can provide several benefits for municipalities which, among others, are: improvement of everyday lives of a large percentage of their population, improvement of the municipalities' public image, integration of a large part of citizen groups, reduction of cost of infrastructure's accessibility improvement, creation of infrastructure complying with latest legislation, development of accessible tourism. The proposed standard, with the analytical approach followed, ensures its easy implementation by Municipalities.
- The creation of an accessibility committee where all involved actors will participate is essential.
- The analytical approach followed in the proposed accessibility evaluation methodology ensures that
  the Municipality's technical office has sufficient data for an infrastructure's accessibility level without
  the use of specialized personnel.

### 6. Suggestions for further actions

The following actions would prove beneficial for the improvement of accessibility:

- The mandatory creation of accessibility studies for each new construction would ensure that accessibility provisions are available.
- The logical next step could be the development of a certification authority at national level whose
  prestige would ensure its efficiency. This could be the Greek Standardization Authority, the Ministry
  of Interior Decentralization and E-government, a University or the National Association of People
  with Disabilities.
- On a more practical level, the creation of a good practices implementation handbook, including guidelines, relevant legislation and good practice examples, would prove beneficial for the Municipality's engineers.

#### References

Ajuntament de Barcelona, Sector de Serveis Personals i Institut Municipal de Disminuits. *Declaration of Barcelona – The City and People with Disabilities*(1995) http://bcn.cat/ciutat-disminucio/en/ (recovered 7/2/2006)

Americans with Disabilities Act Accessibility Guidelines (1992). Checklist for Buildings and Facilities

Department for Transport (2002). Inclusive Mobility – A guide to best practice on access to pedestrian and transport infrastructure,

Ecoports Foundation. *Tool 4: Port Environmental Review System (PERS) Ecoports – ports sharing environmental experience.* http://www.ecoports.com/page.ocl?pageid=30&mode=&version= (recovered 14/8/2008)

EIDD – Design for All Europe (2004), Stockholm Declaration http://www.designforalleurope.org/Design-for-All/EIDD-Documents/Stockholm-Declaration/ (recovered 20/5/2008)

Greek Law 1798 / 21-12-2005

Greek Ministry of Environment and Public Works (2003). Σχεδιάζοντας για Όλους (In Greek),

Greek National Association of People with Disabilities (2008). Ιάσονας – τυπικό σχέδιο δράσης. Διασφαλίζοντας προσβάσιμες κοινωνίες για όλους (in Greek)

International Organization for Standardization ISO 14000 essentials, http://www.iso.org/iso/iso\_14000\_essentials (recovered 25/7/2009)

Naniopoulos A., Tsalis P., Kalle P. (2008) Προσβασιμότητα διαδρόμων όδευσης τυφλών. Αξιολόγηση ακολουθούμενων πρακτικών και προδιαγραφών στην Ελλάδα (in Greek), , 4<sup>th</sup> International Congree on Transport Research

Royal National Institute for the Blind, (1995). Building sight - A handbook of building and interior design solutions.

Royal National Insitute for the Blind, (1999). Rights of way - Transport and mobility for visually impaired people

United Nations. (1993). Standard rules on the Equalization of Opportunities for Persons with Disabilities, United Nations General Assembly, forty-eighth session

http://www.un.org/esa/socdev/enable/dissre00.htm (recovered 12/6/2006)

United Nations (1996). Accessibility for the Disabled - A Design Manual for a Barrier Free Environment

U.S. Environmental Protection Agency. *Environmental management systems*, http://www.epa.gov/EMS/info/index.htm (recovered 20/7/2008)