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1. Introduction

For some time now various documents have been produced under the "GTA" logo, which relate to the geometric design of roads. This present note gives a short overview of the research and the types of documents prepared.

1.1 Project overview

Work on a number of road projects in different countries eventually led to questions such as

- How do countries around the world look at the design of roads?
- Are some approaches better than others?
- What are these standards and approaches?
- Can these standards and approaches be reduced or unified into one set of standards and approaches which can be used anywhere in the world?

At first the aim was to produce a document which lists, for each country, the main standards and guidelines which relate to the geometric design of roads. This was then extended to list the various design parameters which define the geometric design of roads, and which tend to appear in every standard, regardless of

country or the language of the document. Examples of these parameters include *side friction*, *lane width*, and *stopping sight distance*.

The research was then extended again, to look at and compare suggested values for different geometric parameters. This has led to a modified set of objectives, and to the production of a number of different types of document (as described in the section 1.3 below and in Annex A).

1.2 Summary of objectives

- To identify standards on road geometrics for different countries
- To suggest a new and perhaps simplified structure for road standards
- To identify global practice / values for the parameters involved in the geometric design of roads
- To extract and present values for individual parameters so that – eventually – they may be compared and assessed

1.3 Types of document

There are presently 8 different “document series” (for more brief details see annex A). Several have been prepared with the help of other engineers and planners. The document series are :

The basics	1. Road geometric design standards by country 2. Road geometric design parameters
The details	3. Parameter analysis 4. Parameter values
Solutions	5. Technical examples 6. Real world examples
Other	7. Other documents
Libraries	8. Document libraries

4 Document numbering system

During the early part of the work the document structure was slightly different to that discussed above, and documents were numbered beginning with the number of the appropriate group. This has now changed to a simple sequential numbering system, with more details being included in the document title; and with a summary table giving details of the documents produced so far.

5 Communication plan

There is a tech blog, where posts will be added to advise of the publication of new documents. At present the documents themselves are being made available as free downloads on Academia and on ResearchGate. The creation of online document libraries is something which is still being thought out.

- <https://comparativegeometrics.wordpress.com>
- <https://www.academia.edu>

- <https://www.researchgate.net>

2. Annex A Description of the different series of research document

The basics

1. Road geometric design standards by country

A main document listing the most important road geometric design standards from around the world, on a country-by-country basis, and including some discussion notes and notes on some multi-country standards and on some textbooks and reference works.

The purpose is to identify the sources of parameters, road design standards and guidelines on best practice, in every country.

More recently there has been a move towards producing short documents, one for each country. One reason is that things change - countries frequently update their standards, or new information becomes available, so that by the time the information on the first 100 countries has been updated the details of the first countries reviewed have changed.

2. Road geometric design parameters

A single document which lists (some of) the parameters presently used in road geometric design, and attempts to put them into some sort of structure. The parameters are identified by checking through some of the design standards identified in document 1 above.

Rather than have just a list of a hundred or more parameters – and there are a dozen or more different types of “*sight distance*” for example - these parameters can be arranged in a structured way which can help you find your way around them.

Given the various languages in which a parameter might be expressed plus the different definitions which exist for what appear to be the same parameter, developing a common terminology can be helpful. So for example, values of minimum horizontal radius in two different documents may look the same, but one set relates to operating speed and one set to design speed

The details

3. Parameter analysis

This is a series of documents, each of which looks in some detail at the meaning and detail of a particular parameter, and at the concept and approach which underly the values which are produced for them. The documents include notes collated from different design standards and documents, and should give the reader some idea of how reliable the concept and suggested values are, and what are their limitations.

4. Parameter values

A series of short documents, each of which, for one particular parameter, list values from a number of different design standards and other sources. These summary lists give the reader the chance to see how big the spread of values is.

Solutions

5. Technical examples

A series of short documents which take individual examples of suggested good practice from a design standard, usually with some discussion notes. The documents look for example at suggested road types, cross-sections, and parameters such as side friction and horizontal radius.

6. Real world examples

A series of short documents which present real world examples of good practice.

Other

7. Other documents

A series of documents prepared on other topics loosely related to road geometric design, such as *"The dimensions of cycles"*, *"Motocarros in Peru"* etc.

Libraries

8. Libraries

The intention here is to prepare online libraries of the identified country standards, and of the documents produced in this research.

Summary list of the 8 document groups:

1	RDS Country notes	Road geometric design standards by country
2.	RDS Parameters	Road geometric design parameters
3	RDS P-analysis	Parameter analysis
4	RDS P-values	Parameter values
5	RDS tech	Technical examples
6	RDS real	Real world examples
7	RDS other	Other documents
8	RDS libraries	Document libraries

3. Cover note, disclaimer and copyright

Cover note

GTA – Global Transport Atlas : A series of studies looking into road geometrics, highway and traffic engineering in different countries. There is an associated blog, at <https://comparativegeometrics.wordpress.com>

This paper is one of a series, as explained in the text.

Disclaimer

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Revisions

01	July 2023	First version
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