



# Beyond Mapping Compilation Series

by Joseph K. Berry

...Beyond Mapping columns appearing in [GeoWorld](#) (formally GIS World) magazine from **March 1989** through **December 2013**.

Most GIS applications have focused on mapping and spatial data management for viewing and geo-query of mapped data. Map analysis and GIS modeling involve entirely new spatial reasoning concepts and procedures that are not reflected in our paper map legacy. The four books in the Beyond Mapping Compilation Series are based on Joe Berry's popular "Beyond Mapping" columns in GIS World/GeoWorld magazine that discuss the new breed of map analysis tools, how they can be used to better characterize and communicate spatial relationships, be organized into effective GIS model solutions, and spark entirely new spatial paradigms. The topics covered are written for novices, as well as GIS professionals, in a witty style that entertains as well as informs.

([click](#) to access additional **Chronological, Applications, Operations** and **Interactive Listings** with hyperlinks to individual Beyond Mapping columns)  
([click](#) for a hardcopy version of this document posted at <http://www.innovativegis.com/basis/BeyondMappingSeries/>)

## Combined Index

with hyperlinks to individual Beyond Mapping columns

\*\*\*\*\* *In Preparation* \*\*\*\*\*

### Table Overview:

The **Combined Index** identifies where **key words and phrases** appear in the four books in the Beyond Mapping Compilation Series.

### Table Structure:

Key Word/Phrase	Book IV GIS Modeling (Column 2)	Book III Map Analysis (Column 3)	Book II Spatial Reasoning (Column 4)	Book I Beyond Mapping (Column 5)
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**Key Word/Phrase** (Column 1) is an alphabetical listing of key words/phrases appearing in the books. Many of the key words/phrases have multiple occurrences in one or more of the books.

**Books** (Columns 2 through 5) identify the books in the series. Entries in these columns identify/link to the **Topic** and **Section** or **sub-section** in a book that contains discussion of the key word/phrase listed in column 1 for that row (table record).

The **Occurrence Code** hyperlinks identify the Topic ("T\_"), Section ("S\_") or Further Reading Sub-section ("R\_"). For example—

**T3S1** in **column 3**, identifies **Book III, Topic 3, Section 1**

**T10S3** in **column 5**, identifies **Book I, Topic 10, Section 3**

**T8S3R5** in **column 2**, identifies **Book IV, Topic 8, Section 3, Further Reading Sub-section 5**.

< click> on any of the hyperlinks to access the individual Beyond Mapping column in one of the four books that discusses the listed key word/phrase

<b>Key Word/Phrase</b> (Column 1)	<b>Book IV GIS Modeling</b> (Column 2)	<b>Book III Map Analysis</b> (Column 3)	<b>Book II Spatial Reasoning</b> (Column 4)	<b>Book I Beyond Mapping</b> (Column 5)
<b>A</b>				
Analytical classes		T3S1		
Arithmetic mean		T2S3, T5S3		
Averages		T2S3, T3S4, T3S6,		
<b>B</b>				
Balancing		T9S3, T10S5		
Base maps		T8S2		
<b>C</b>				
Cartographic modeling		EpilogS2		
Coefficient of variation		T2S3, T3S4, T8S3, T9S1, T9S2		
Clusters, data		T10S5		
<b>D</b>				
Data				
and information		T2S1, T3S1, T6S2		
grid-based		T1S1		
layers		T2S1, T2S2		
linked or indexed tables		T1S1, T2S1		
mapped		IntroS1, T1S2		
mining		T2S4, T10S6		
vector-based		T1S1		
Databases				
management		IntroS1, T1S1		
spatial		EpilogS1		
Display types		T1S1		
<b>E</b>				
Effective distance		T2S1, T2S2, T4S2, T4S4, T8S1		
<b>F</b>				
Flowcharts		T5S4, T7S3, T8S2, T8S3, T10S6		
Formulae, see also Models				
classification		T3S1		
distance two points		T2S2, T4S3, T4S4, T9S3		
weighted average		T3S4, T6S3, T7S2, T7S3, T9S3		
gravity model				
intersect two lines				
normal distribution				
slope and aspect				
spatial				
standardizing data				
trend surface models				
<b>G</b>				

Geographic Information Systems				
analytic operations				
as decision support system				
and general users				
evolution				
graphical interface				
“guaranteed income stream”				
multifaceted community				
revolution				
“spatial spreadsheet”				
suitability modeling				
Global positioning system				
applications				
integrated GIS/GPS/RS				
<b>H</b>				
Hardware advances				
Hugag example				
<b>I</b>				
Inverse distance interpolation				
Iterative smoothing interpolation				
<b>J</b>				
<b>K</b>				
Knowledge				
lines of				
Kriging interpolation				
<b>L</b>				
Layers				
“Light-table gymnastics”				
Line-of-sight buffers				
<b>M</b>				
Map analysis				
and modeling				
approaches				
limitation				
quantitative				
sequence				
tools				
Maps				
base map				
binary				
cluster				
coincidence table				

comparison				
digital				
discrete				
discrete-cost				
error propagation				
“floating”				
prescriptive analysis				
residual analysis				
similarity				
shadow maps of certainty				
uncertainty				
Models and modeling				
analytical				
binary				
calibration				
cartographic				
distance buffers				
empirical				
error propagation				
logical levels				
“mapemtical”				
mathematical				
multiplicative				
overlay operations				
predictive				
prescriptive				
rating				
simple proximity				
spatial				
static				
statistical				
suitability modeling				
surface				
types				
weighting				
<b>N</b>				
Number of samples				
<b>O</b>				
Object-oriented programming				
<b>P</b>				
Polynomial fitting				
Preferred route calculations				
Precision Farming				
Predictive modeling				

<b>Q</b>				
<b>R</b>				
Rasters				
compared with vectors				
data model				
Reach				
Reclassification				
Remote sensing				
Residual analysis				
Routing				
optimal path				
preferred route calculation				
<b>S</b>				
Shadow maps of certainty				
Spatial analysis				
aggregated				
context				
spatial dependency				
spatial database mgt software				
Spatial interpolation				
Spatial modeling				
Spatial reasoning				
Spatial statistics				
Spatially aggregated reporting				
Standard deviation				
Standard normal variable maps				
Statistics				
descriptive				
predictive				
prescriptive				
Surfaces				
smoothing techniques				
interactively smoothed				
polynomial fitting				
<b>T</b>				
<b>U</b>				
<b>V</b>				
Variable-width buffers				
Vector				
algebra				

