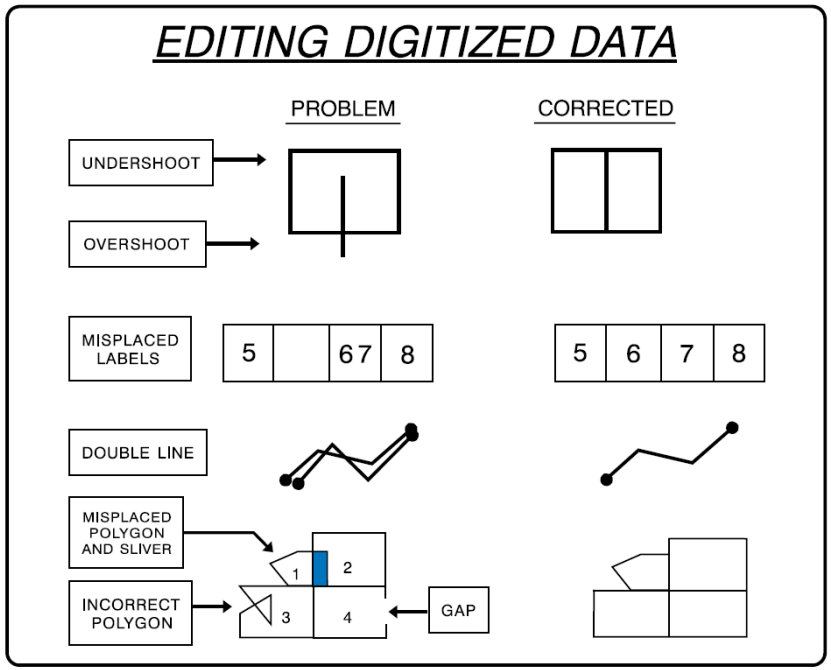
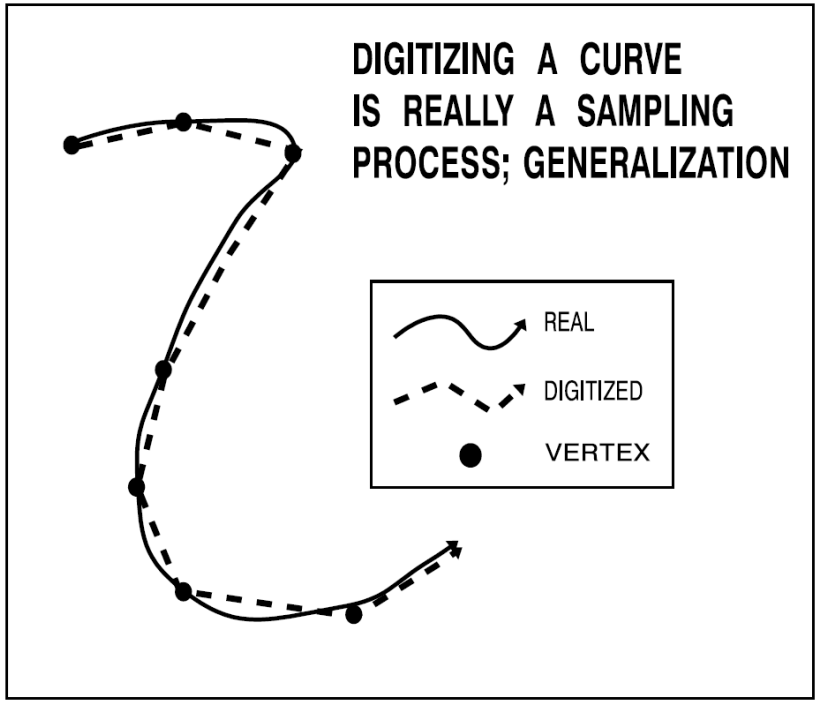
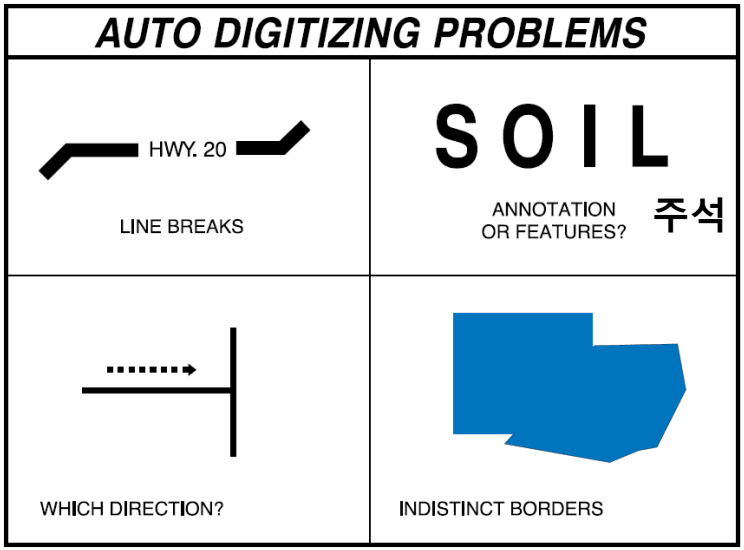
공간정보 자료 처리 (공간 질의)

Spatial Query

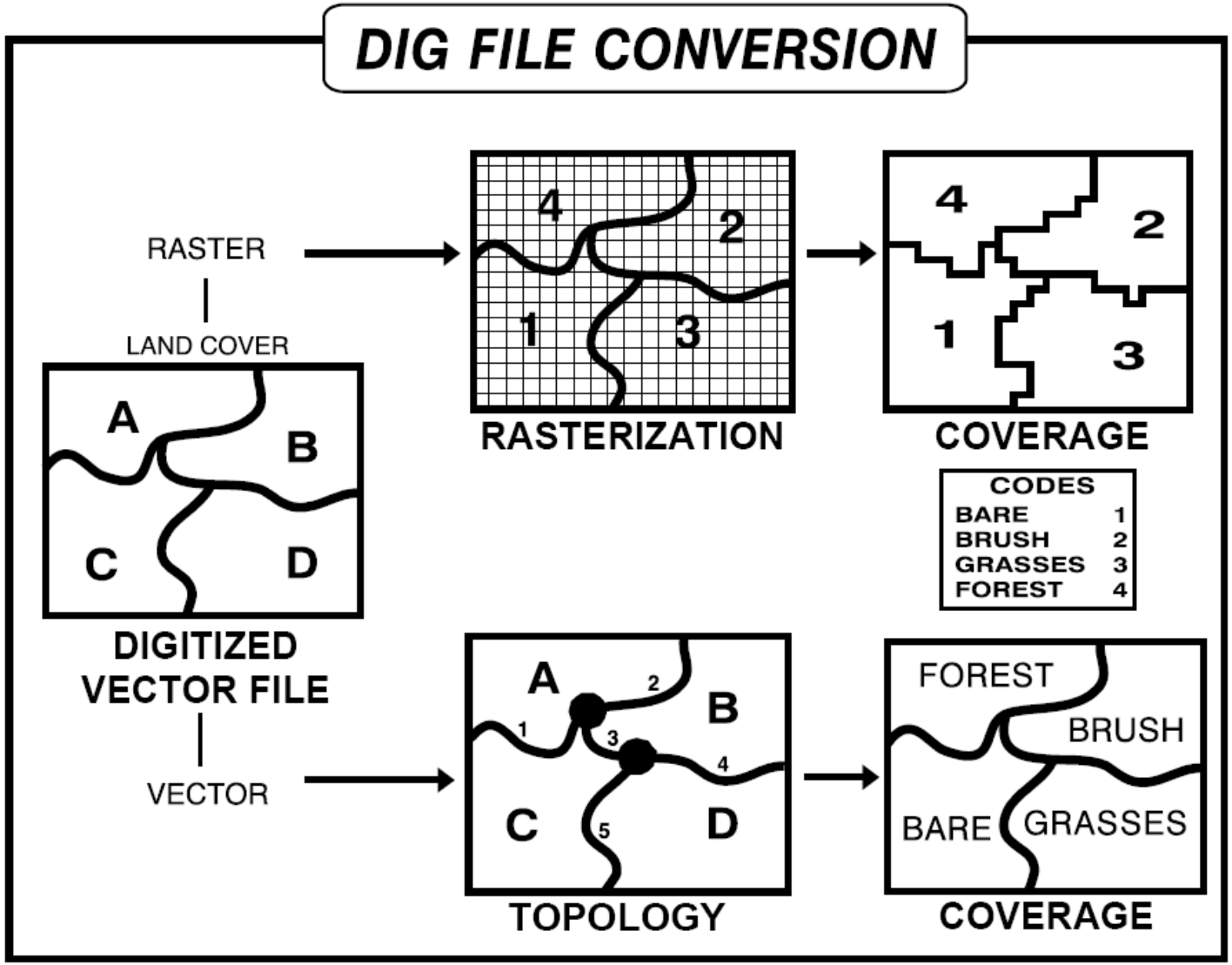
공간 질의


EDITING DIGITIZED DATA
PROBLEM
CORRECTED
UNDERSHOOT
OVERSHOOT
MISPLACED LABELS
5
67
8
5
6
7
8
DOUBLE LINE
MISPLACED POLYGON AND SLIVER
INCORRECT POLYGON
1
2
3
4
GAP

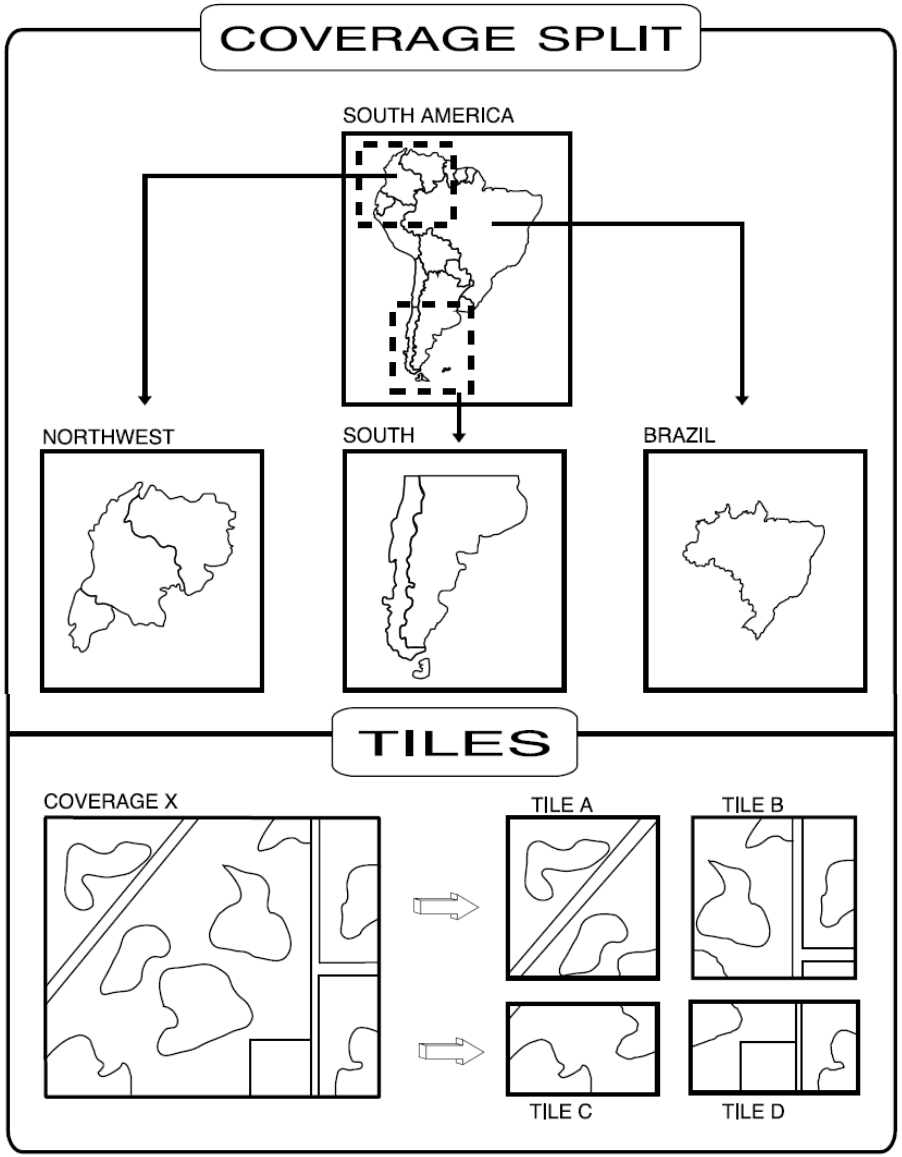

DIGITIZING A CURVE IS REALLY A SAMPLING PROCESS; GENERALIZATION
REAL
DIGITIZED
VERTEX

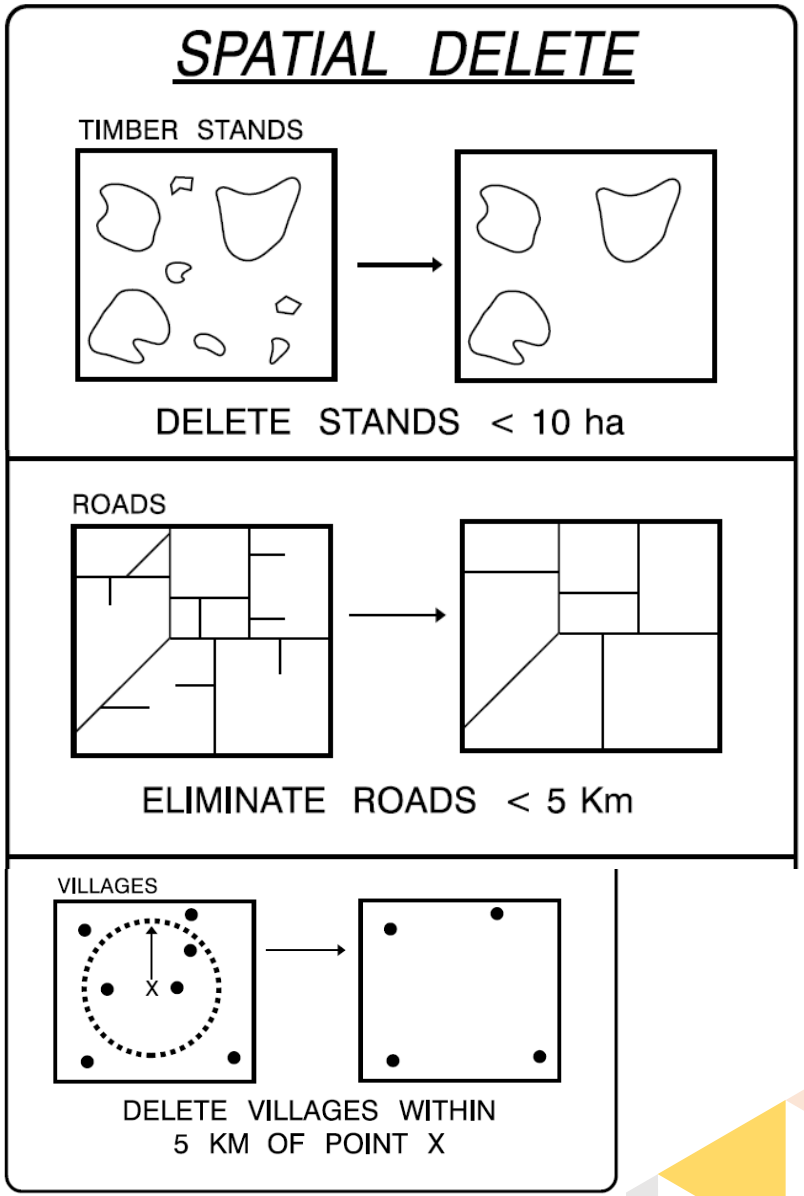

AUTO DIGITIZING PROBLEMS
HWY. 20
LINE BREAKS
SOIL
ANNOTATION OR FEATURES?
주석
WHICH DIRECTION?
INDISTINCT BORDERS

공간 질의

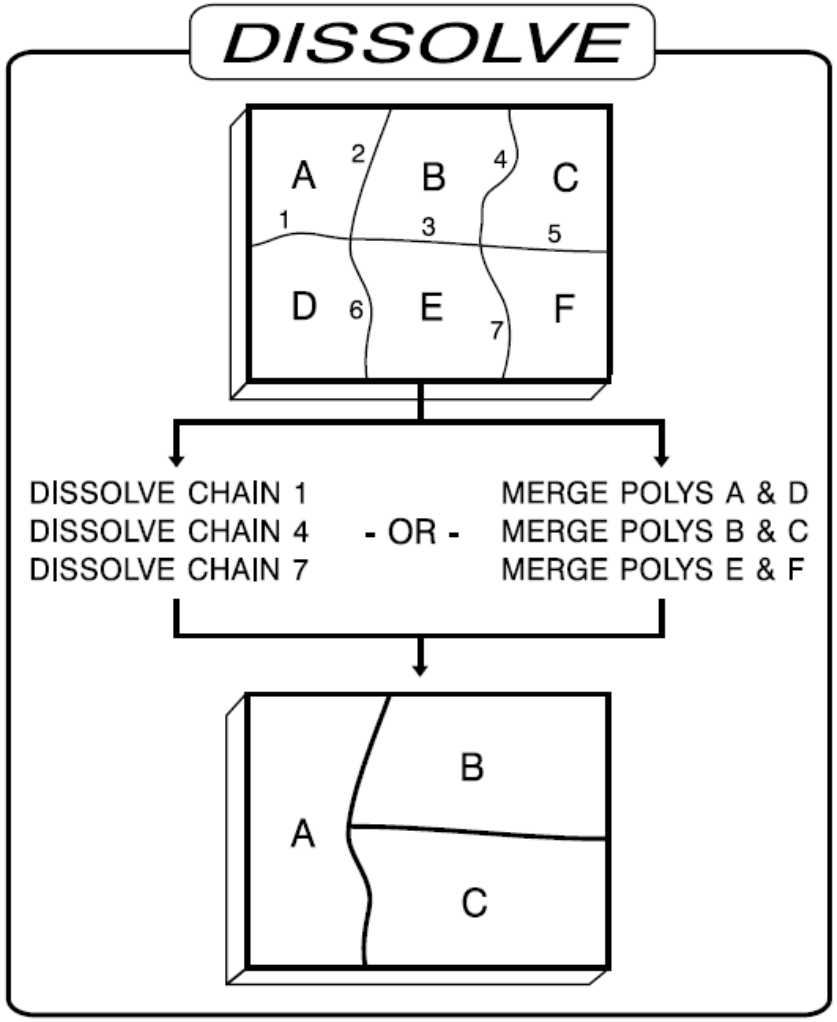

DIG FILE CONVERSION
RASTER
LAND COVER
A
B
C
D
DIGITIZED
VECTOR FILE
VECTOR
4
2
1
3
RASTERIZATION
4
2
1
3
COVERAGE
CODES
BARE 1
BRUSH 2
GRASSES 3
FOREST 4
A
B
C
D
1
2
3
4
5
TOPOLOGY
FOREST
BRUSH
BARE
GRASSES
COVERAGE

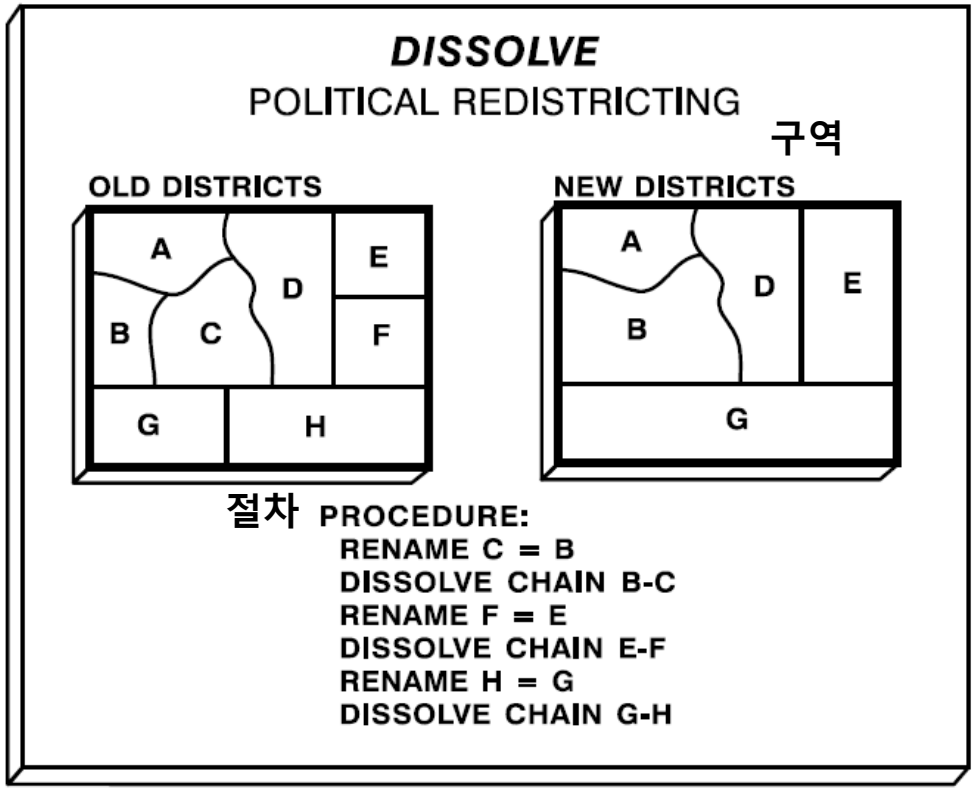
공간 질의


COVERAGE SPLIT
SOUTH AMERICA
NORTHWEST
SOUTH
BRAZIL
TILES
COVERAGE X
TILE A
TILE B
TILE C
TILE D


SPATIAL DELETE
TIMBER STANDS
DELETE STANDS < 10 ha
ROADS
ELIMINATE ROADS < 5 Km
VILLAGES
X
DELETE VILLAGES WITHIN
5 KM OF POINT X

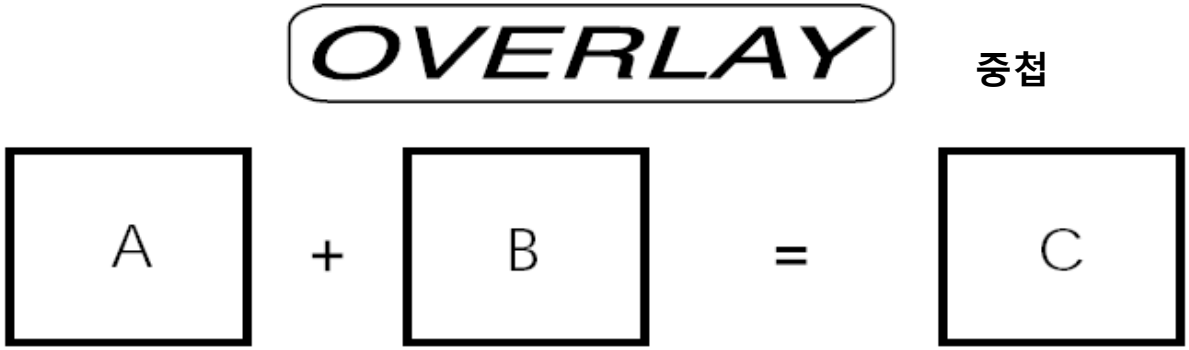
공간 질의

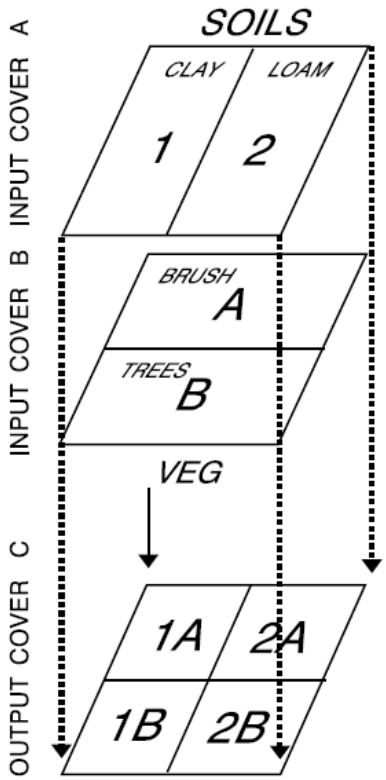

DISSOLVE
A
B
C
D
E
F
1
2
3
4
5
6
7
DISSOLVE CHAIN 1
DISSOLVE CHAIN 4
DISSOLVE CHAIN 7
- OR -
MERGE POLYS A & D
MERGE POLYS B & C
MERGE POLYS E & F
A
B
C


DISSOLVE
POLITICAL REDISTRICTING
구역
OLD DISTRICTS
NEW DISTRICTS
A
B
C
D
E
F
G
H
절차 PROCEDURE:
RENAME C = B
DISSOLVE CHAIN B-C
RENAME F = E
DISSOLVE CHAIN E-F
RENAME H = G
DISSOLVE CHAIN G-H

공간 질의

OVERLAY 중첩





INPUT DATA FILE 1

+

INPUT DATA FILE 2

SOILS

POLYGON	NAME	SIZE (Ha)
1	CLAY	2
2	LOAM	2

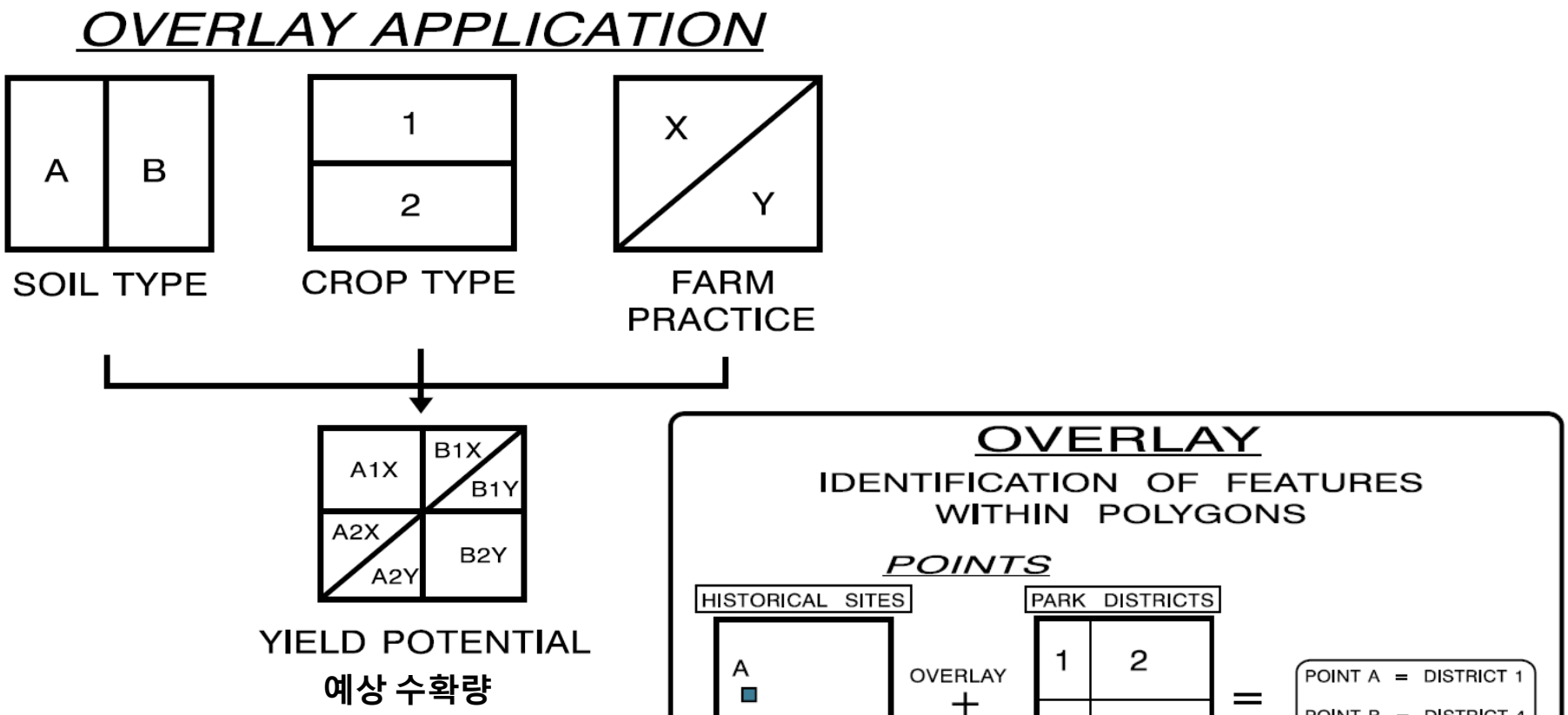
VEG

POLYGON	NAME	SIZE (Ha)
A	BRUSH	2
B	TREES	2

OUTPUT DATA FILE

POLYGON	SOIL	VEG	SIZE (Ha)
1A	CLAY	BRUSH	1
1B	CLAY	TREES	1
2A	LOAM	BRUSH	1
2B	LOAM	TREES	1

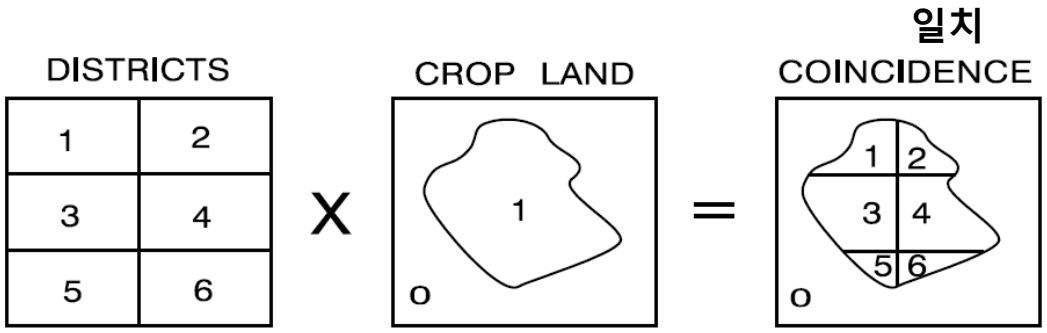
공간 질의


OVERLAY APPLICATION
A
B
SOIL TYPE
1
2
CROP TYPE
X
Y
FARM PRACTICE
A1X
B1X
B1Y
A2X
A2Y
B2Y
YIELD POTENTIAL
예상 수확량
OVERLAY
IDENTIFICATION OF FEATURES WITHIN POLYGONS
POINTS
HISTORICAL SITES
A
B
OVERLAY
+
PARK DISTRICTS
1
2
3
4
=
POINT A = DISTRICT 1
POINT B = DISTRICT 4
LINES
RIVERS
RIVER X
RIVER Y
OVERLAY
+
PARK DISTRICTS
1
2
3
4
=
RIVER X = DISTRICTS 1,3
RIVER Y = DISTRICTS 3,4

공간 질의

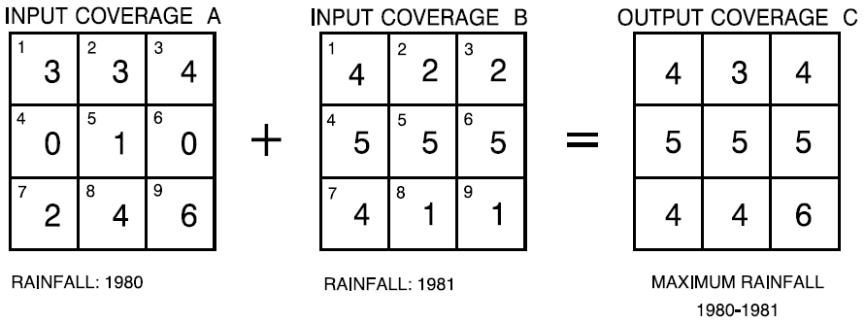
MAP ALGEBRA
MULTIPLICATION

OVERLAY
USING
MULTIPLY



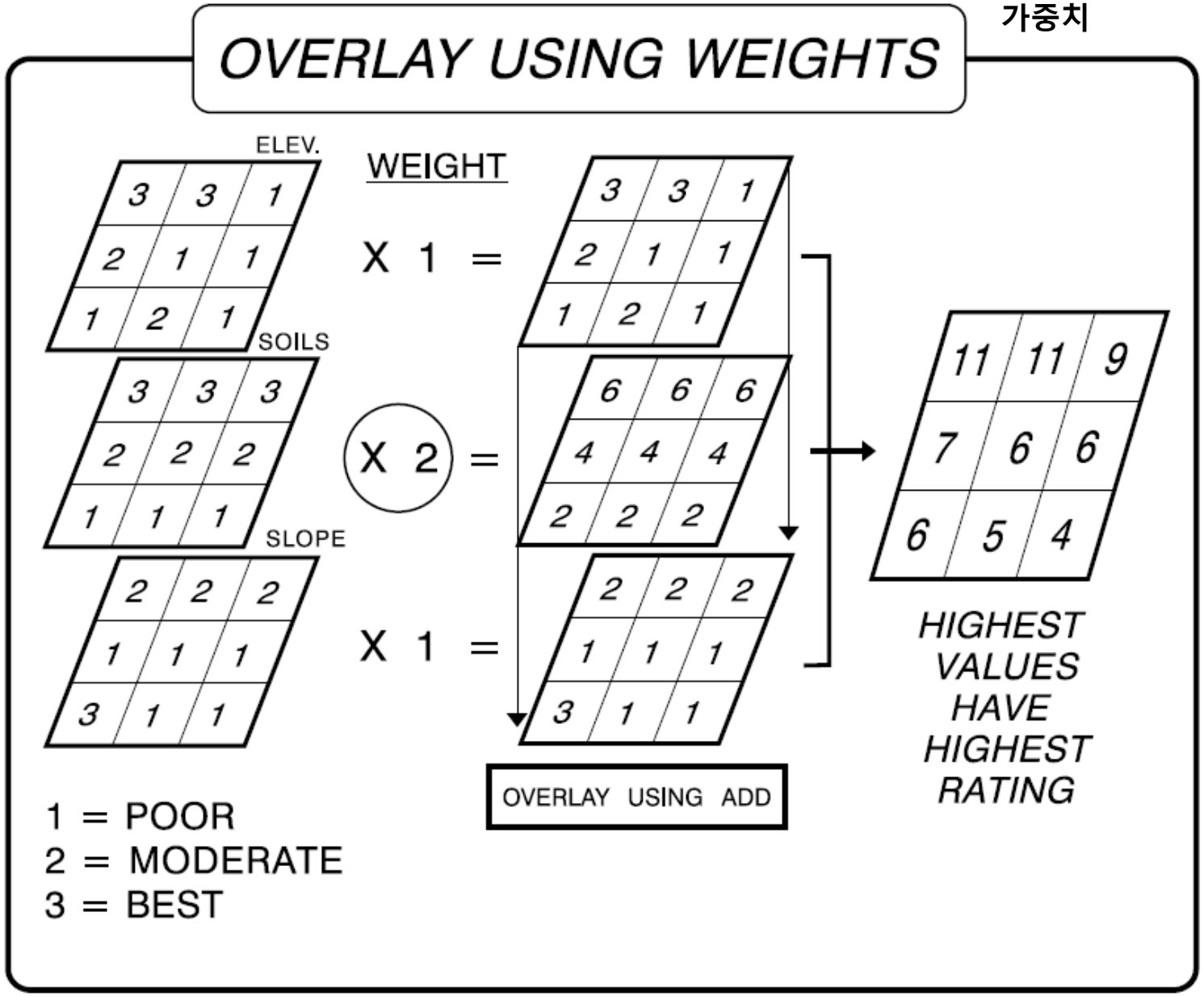
MAP ALGEBRA

OVERLAY
USING
MAXIMUM

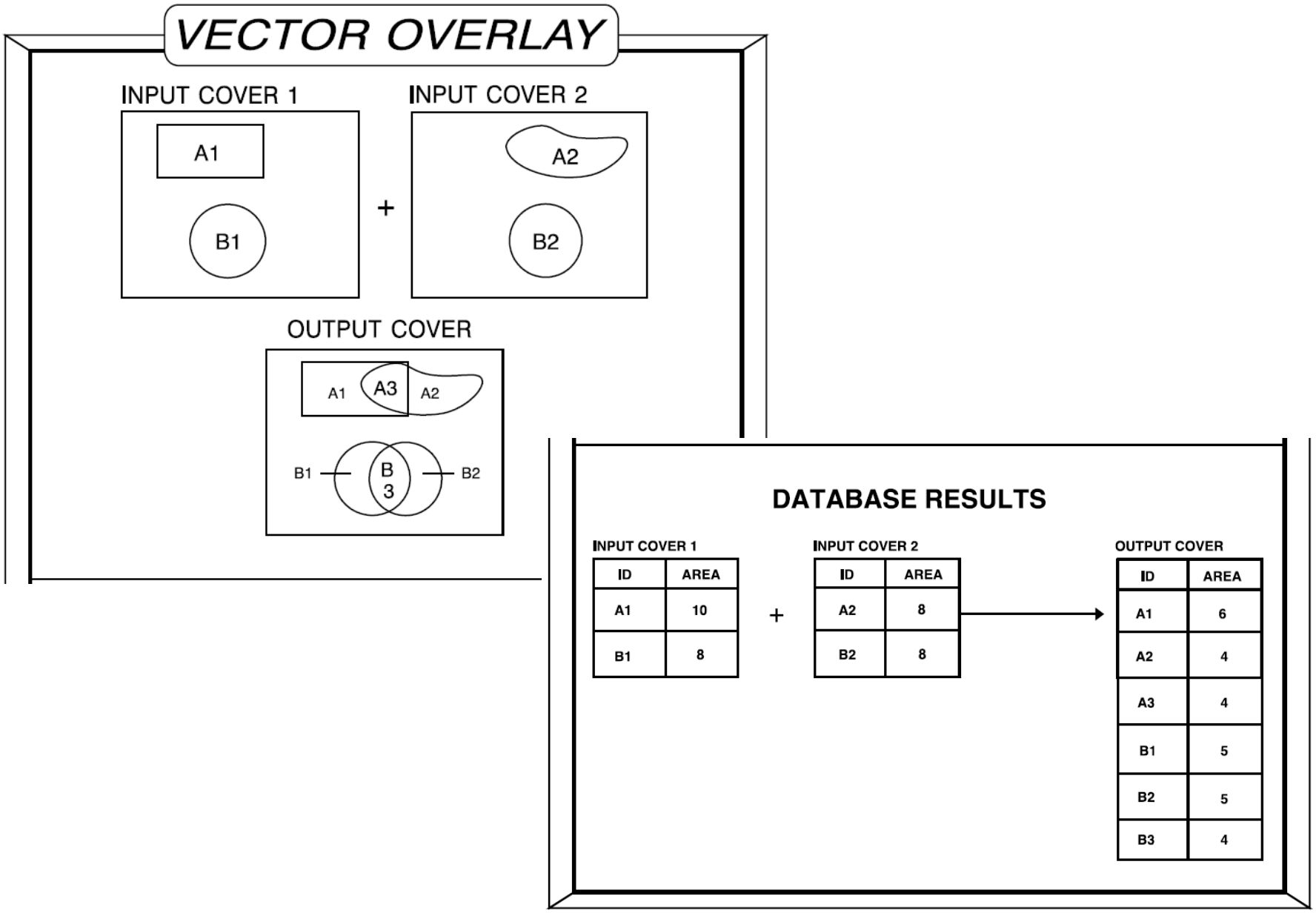


공간 질의

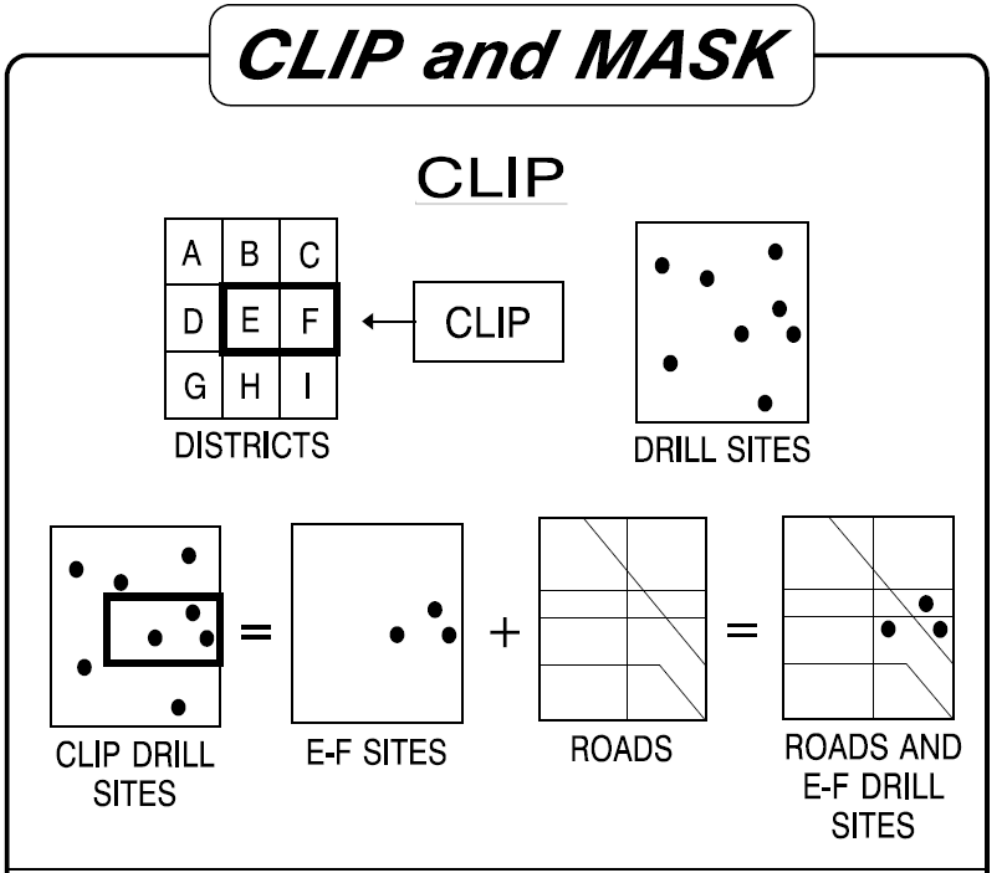
가중치

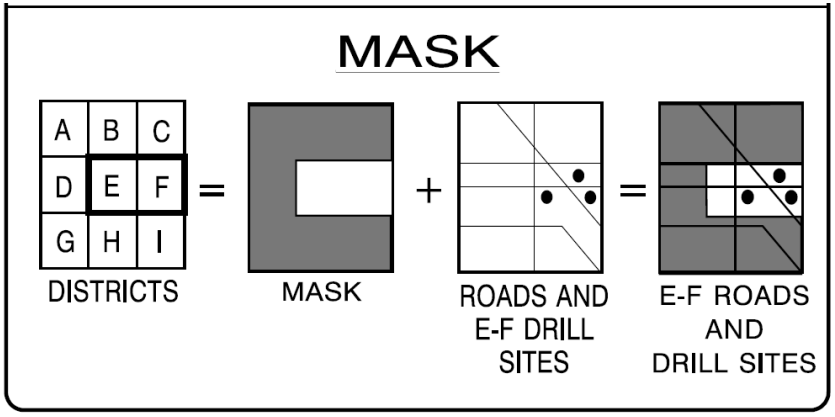

OVERLAY USING WEIGHTS
ELEV.
SOILS
SLOPE
WEIGHT
X 1 =
X 2 =
X 1 =
3 3 1
2 1 1
1 2 1
3 3 3
2 2 2
1 1 1
2 2 2
1 1 1
3 1 1
6 6 6
4 4 4
2 2 2
2 2 2
1 1 1
3 1 1
11 11 9
7 6 6
6 5 4
OVERLAY USING ADD
HIGHEST VALUES HAVE HIGHEST RATING
1 = POOR
2 = MODERATE
3 = BEST

공간 질의

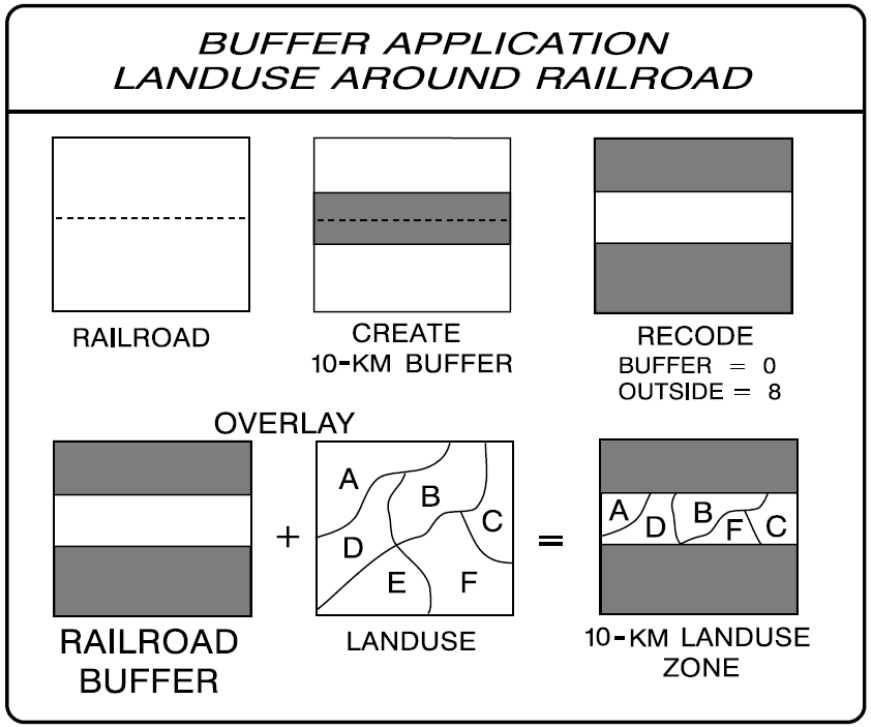

VECTOR OVERLAY
INPUT COVER 1
A1
B1
+
INPUT COVER 2
A2
B2
OUTPUT COVER
A1
A3
A2
B1
B
3
B2
DATABASE RESULTS
INPUT COVER 1
ID
AREA
A1
10
B1
8
+
INPUT COVER 2
ID
AREA
A2
8
B2
8
OUTPUT COVER
ID
AREA
A1
6
A2
4
A3
4
B1
5
B2
5
B3
4

공간 질의


CLIP and MASK
CLIP
A B C
D E F
G H I
CLIP
DISTRICTS
DRILL SITES
=
+
=
CLIP DRILL SITES
E-F SITES
ROADS
ROADS AND E-F DRILL SITES

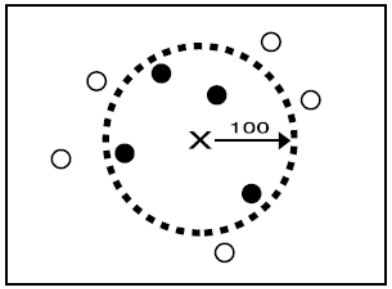

MASK
A B C
D E F
G H I
=
+
=
DISTRICTS
MASK
ROADS AND E-F DRILL SITES
E-F ROADS AND DRILL SITES

공간 질의



SPATIAL QUERY:
SHOW ALL
CITIES WITHIN
100 KM OF X

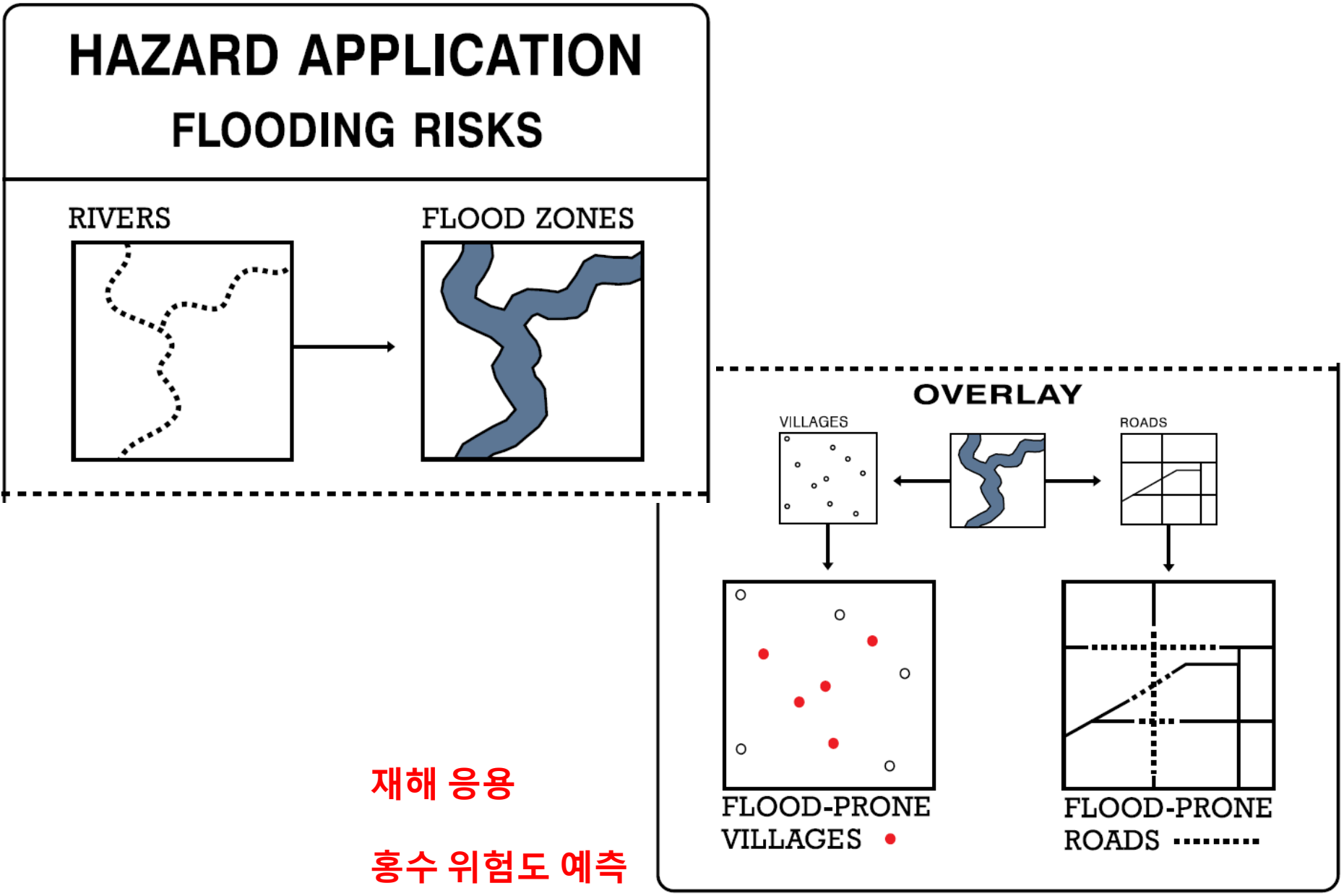
CITIES



DISTANCE SELECTION

NAME	POP	CLASS
DUBOP	12.5	A
TRIMAN	9.0	A
TIBOO	10.1	B
POST	11.4	C
MANT	7.1	A
RATAP	5.0	C
FEENAN	7.0	C
JOST	11.7	B

공간 질의

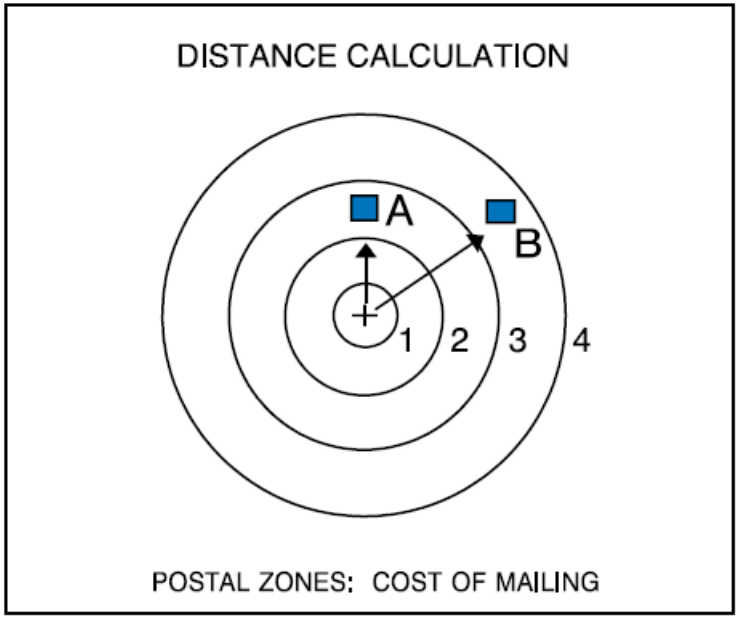


재해 응용

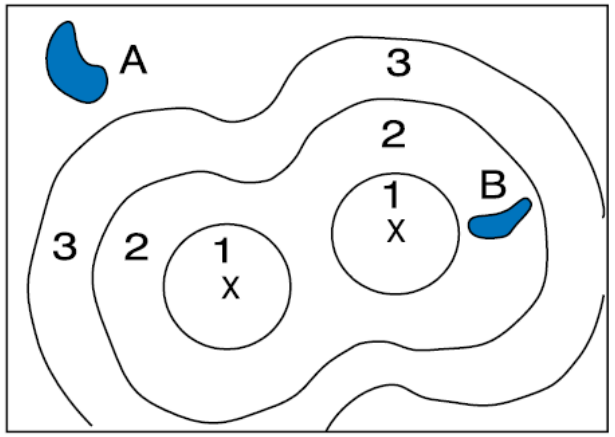
홍수 위험도 예측

공간 질의

BUFFER DISTANCE



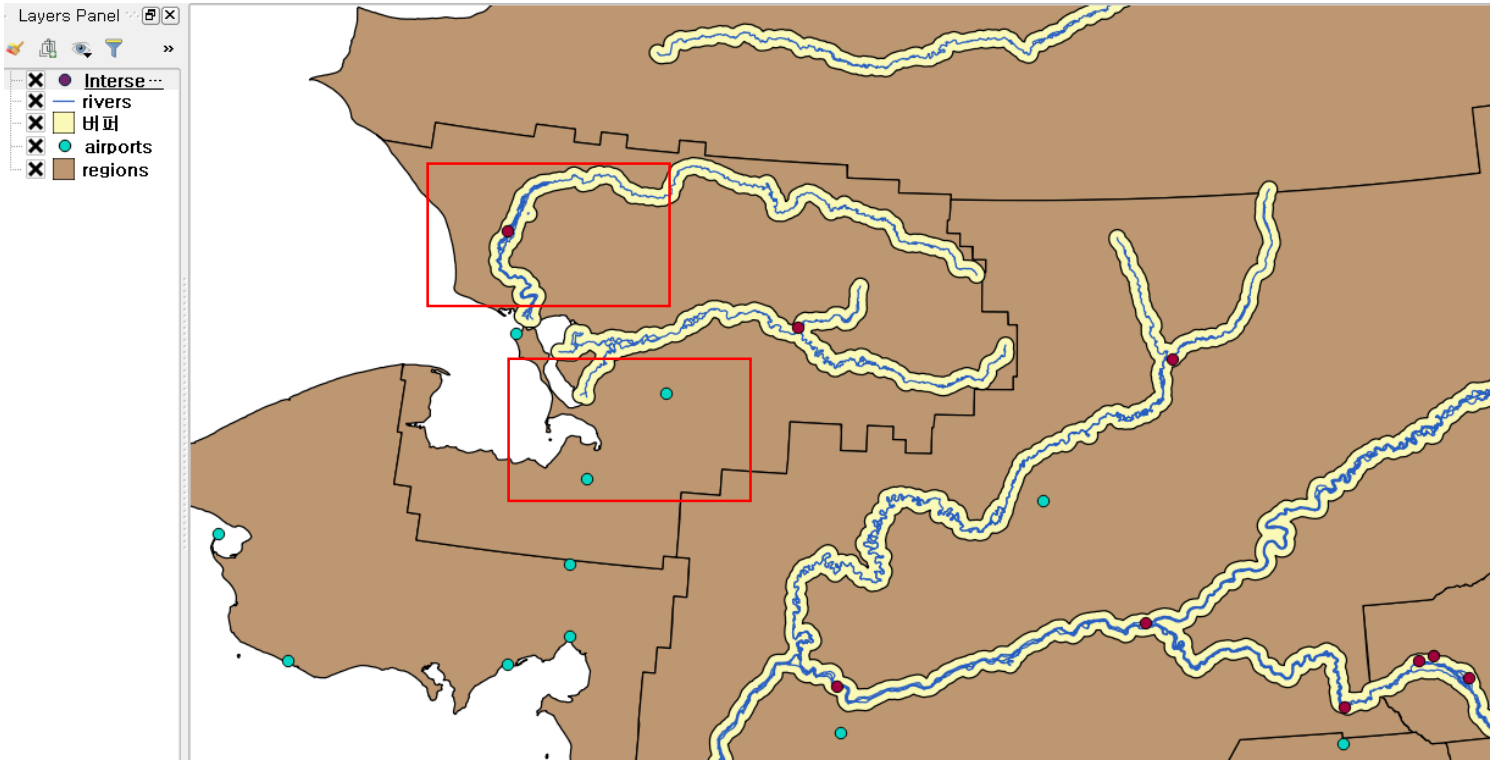
우편, 택배 비용 산정



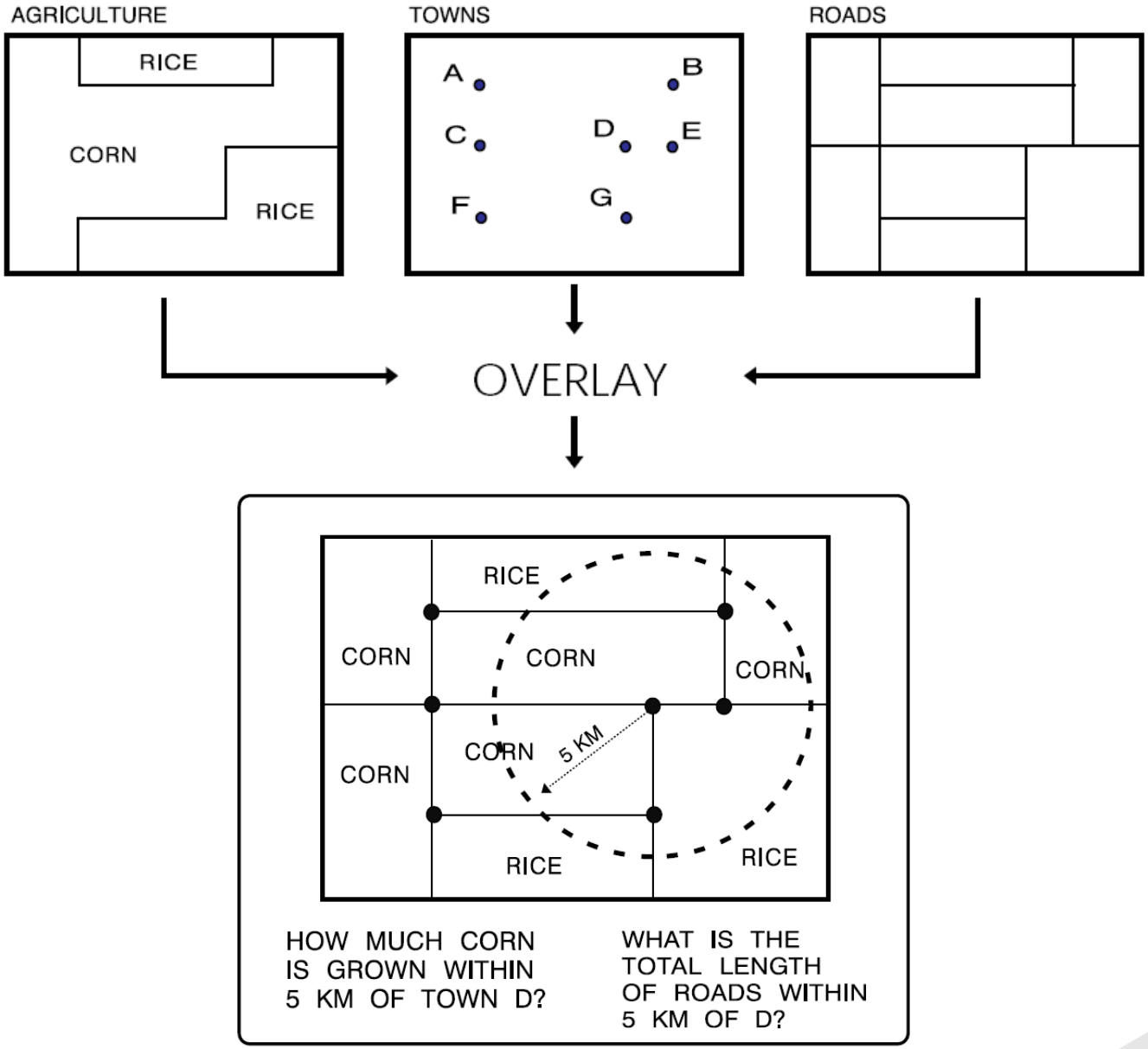
오염도

공간 질의

Buffer Zones + Intersect



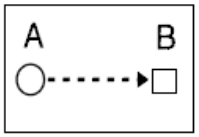
공간 질의


AGRICULTURE
RICE
CORN
RICE
TOWNS
A
B
C
D
E
F
G
ROADS
OVERLAY
RICE
CORN
CORN
CORN
CORN
CORN
5 KM
RICE
RICE
HOW MUCH CORN IS GROWN WITHIN 5 KM OF TOWN D?
WHAT IS THE TOTAL LENGTH OF ROADS WITHIN 5 KM OF D?

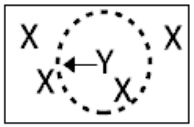
공간 질의

PROXIMITY ANALYSIS
EXAMPLES

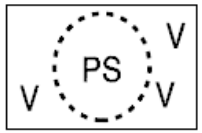
- HOW FAR IS A FROM B?



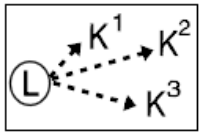
- HOW MANY X FEATURES ARE WITHIN 5 KM OF FEATURE Y?



- ARE THERE ANY VILLAGES WITHIN 5 KM OF THE PROPOSED SITE?

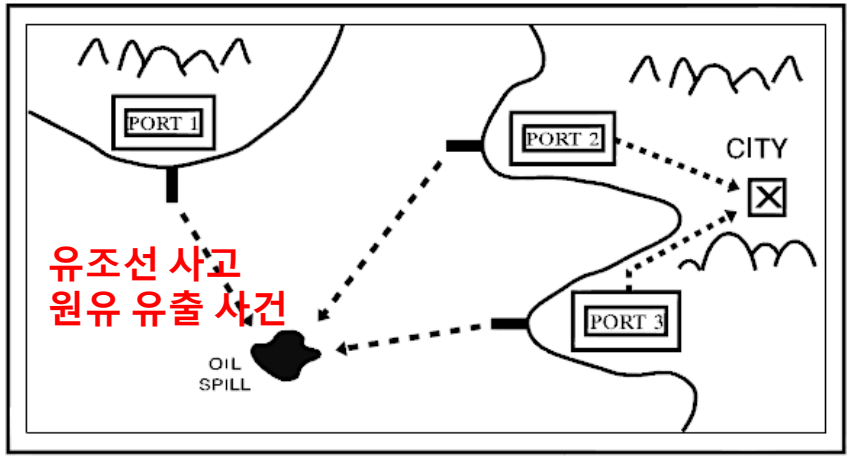


- WHAT IS THE NEAREST K FEATURE TO FEATURE L?



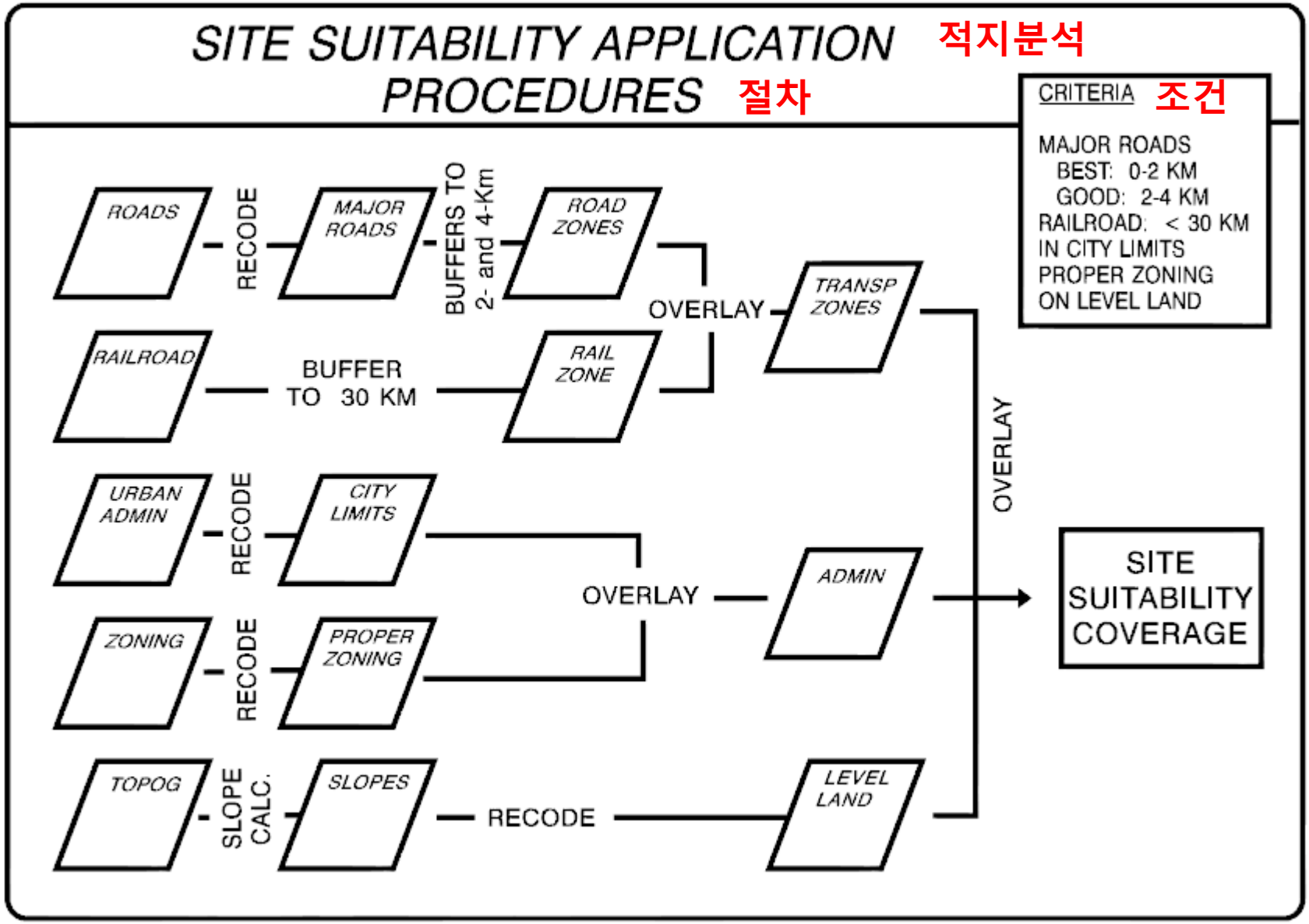
인접분석

PROXIMITY ANALYSIS: NEAREST LANDFALL



WHICH PORT IS CLOSEST TO THE SPILL?
DISTANCE BETWEEN SPILL AND PORT?
WHICH PORT IS CLOSEST TO THE CITY?
WHICH PORT HAS THE BEST EQUIPMENT?
WHAT IS THE RESPONSE TIME?

공간 질의


SITE SUITABILITY APPLICATION PROCEDURES
적지분석
절차
CRITERIA
조건
MAJOR ROADS
BEST: 0-2 KM
GOOD: 2-4 KM
RAILROAD: < 30 KM
IN CITY LIMITS
PROPER ZONING
ON LEVEL LAND
ROADS
RECODE
MAJOR ROADS
BUFFERS TO 2- and 4-Km
ROAD ZONES
OVERLAY
TRANSP ZONES
RAILROAD
BUFFER TO 30 KM
RAIL ZONE
OVERLAY
URBAN ADMIN
RECODE
CITY LIMITS
OVERLAY
ADMIN
SITE SUITABILITY COVERAGE
ZONING
RECODE
PROPER ZONING
TOPOG
SLOPE CALC.
SLOPES
RECODE
LEVEL LAND