

A Study on the Urban Planning and Design Principles on Riverfront

Kwon, Young Sang
Cho, Min Sun

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A Study on the Urban Planning and Design Principles on Riverfront

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YU NAKAI

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- 3.

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(背山臨水), (風水地理)

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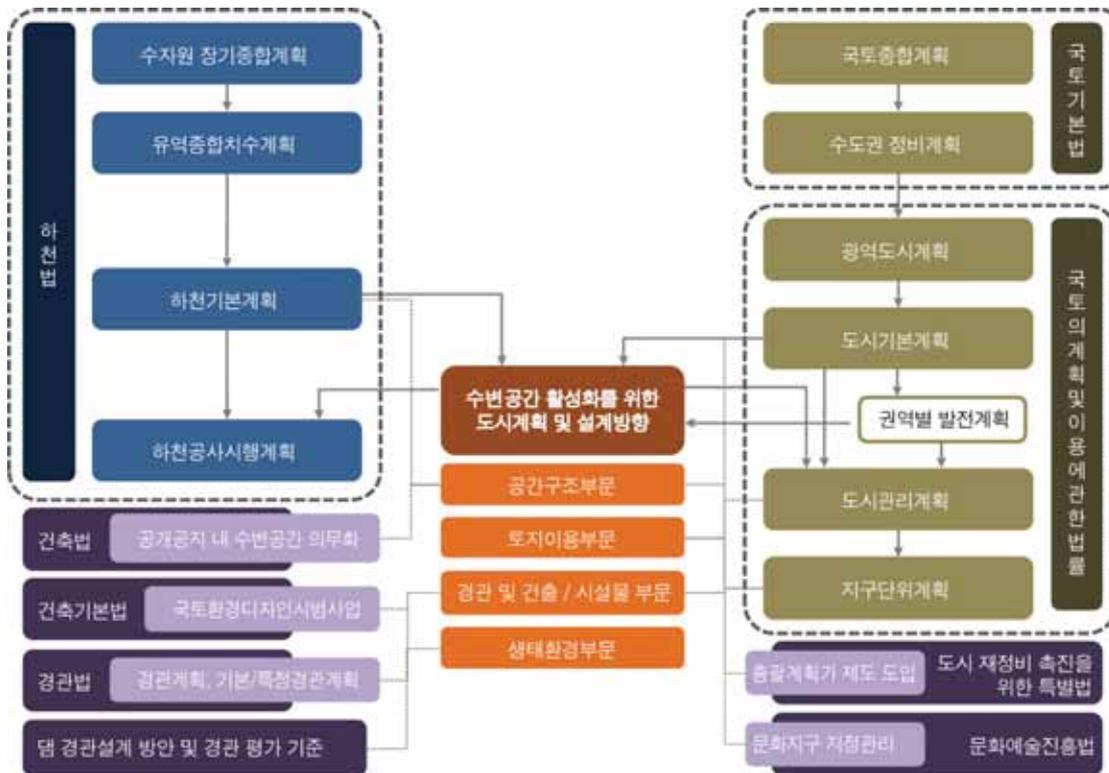
2)

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[1-1]

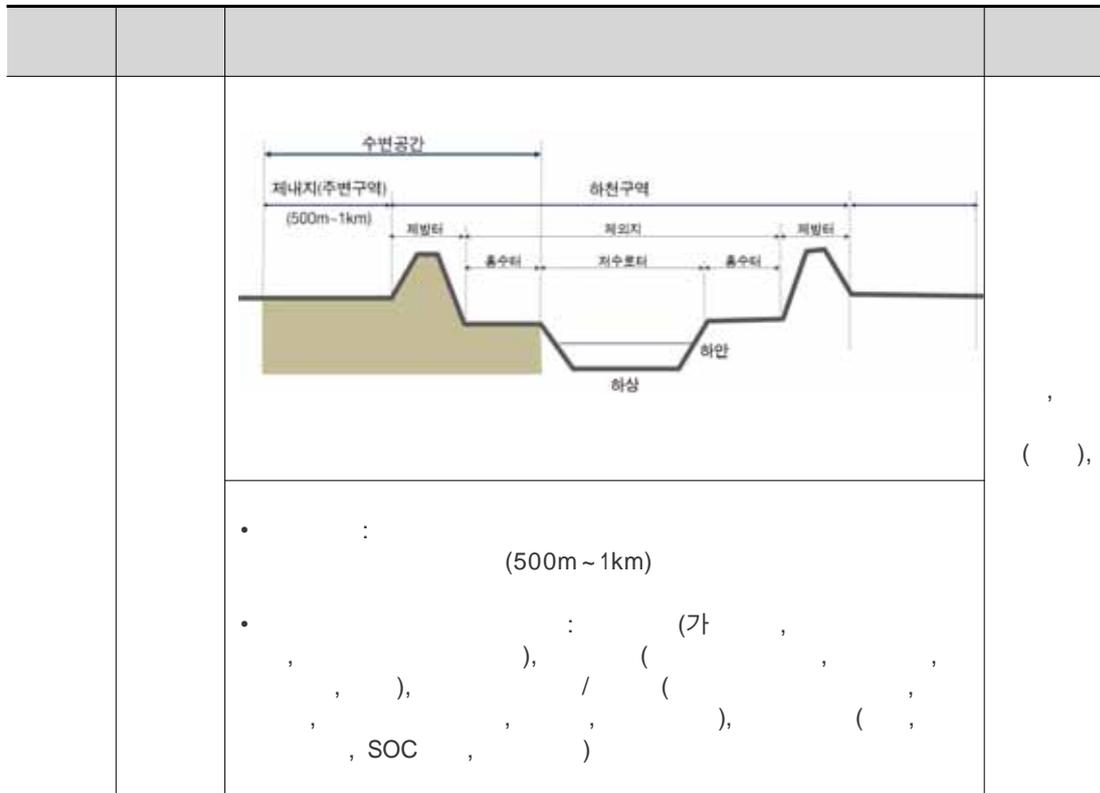
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[1-1]



[1-2]

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		<p>가</p>
<p>2. (4 1)</p>	<p>: 1. . 1 (湖沼) 500</p>	<p>가</p>

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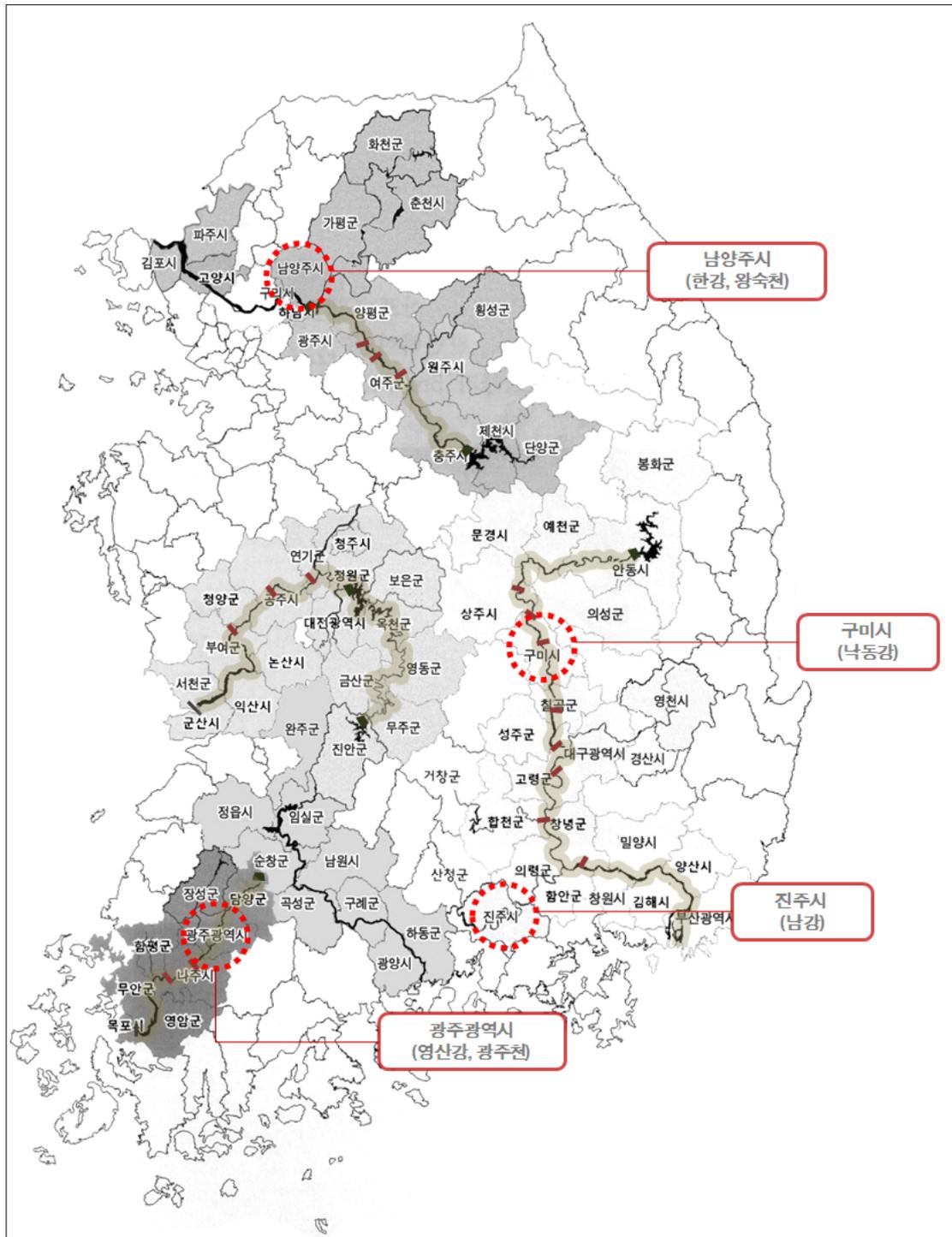
[1-3]

1	()	501.20km ² (95.42%)	712.84km ² (38.52%)	615.49km ² (28.33%)	459.84km ² (50.33%)
	()	1,423,625	331,222	398,949	511,603
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4	()		/	/	
					
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[1-2]

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 21 , ,

[1-4]

1)		(Hammarby Sjöstad)
	/	21(Rivercity 21)
2)		가 (Downtown Core), 가 (Singapore river)
		(Bilbao) (Nervion River)
3)		(Düsseldorf) (Rhein River) (MedienHafen)
4) 가		(München) (Isar River)
	/ 가	

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[1-5]

(2004)	,		,	,
(1988)	,	,	,	-
Alex Krieger* (2004)	, 가 ,	,	,	
Christoph Holzer (2008)	,		,	
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(2010)		-		,
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(2009)	(11) (30) (31)	(27) (28)	(12) (33)	(13) (14) (15) (17)
	(,)	(,)	(/ ,)	(/ ,)

* Alex Krieger 2004, 'The Transformation of the Urban Waterfront', Remarking the Urban Waterfront "Ten Principles of Waterfront Development"

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(, APA)
가 (), Alex Krieger, Christoph Holzer
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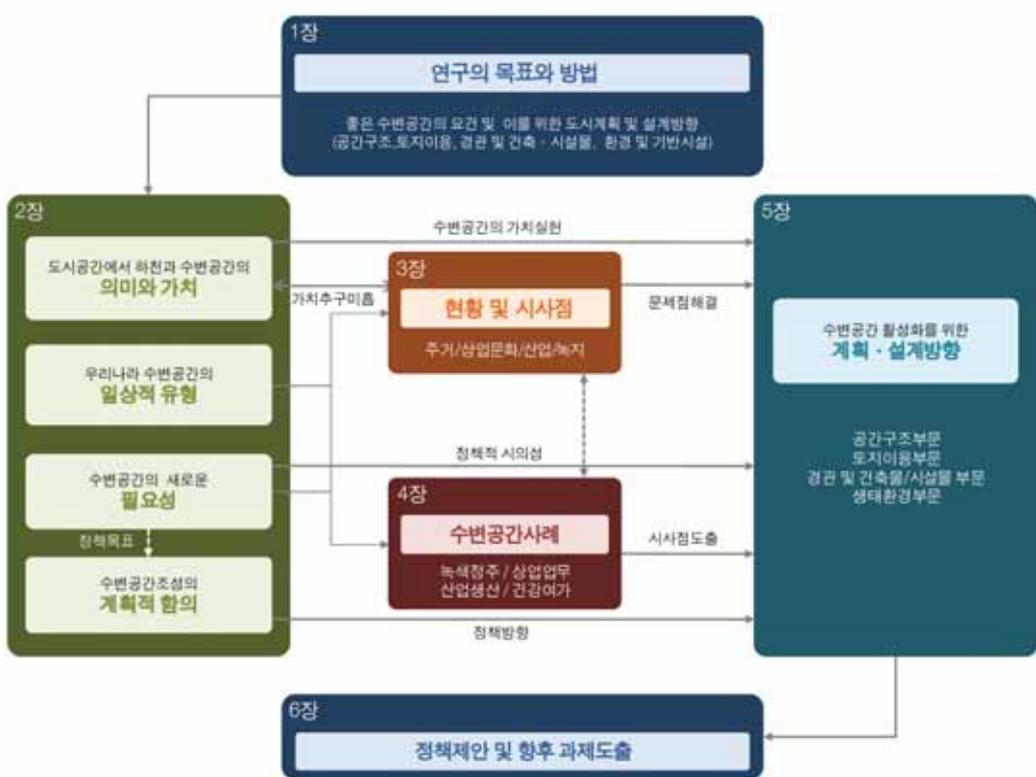
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KLIS(), GIS .

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가 5 3
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[1-3]

3 1 (2010)

가

2 (2011) 가

3 (2012) 2011



[1-4]

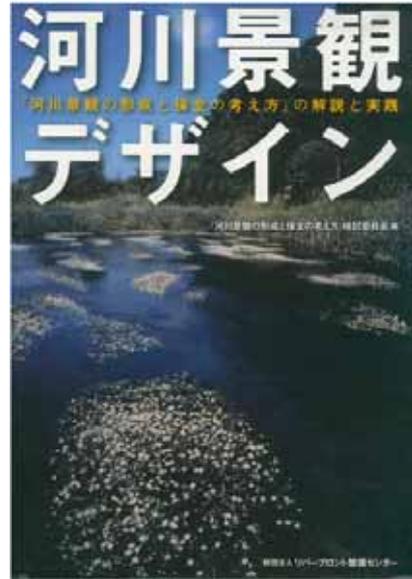
3.

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가 (河川景觀デザイン)

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[1-5] 가

[1-6] 가 ()

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	6	
	7	(,)
	8	(,)



8.3 ()



8.3 (21)



8.4 (가)



さくら橋（東京都）：桜の名所に位置する歩行者専用の橋であり、X型に曲線を描く橋はシンボリックに兩岸を結び、良好な視点場となっている。



天神橋（茨城県）：古河総合公園内の橋。落ち着いた色合いが周辺に緑に馴染むとともに、所々に変化をつけてモダンで開放的な橋となっている。

8.5 (,)

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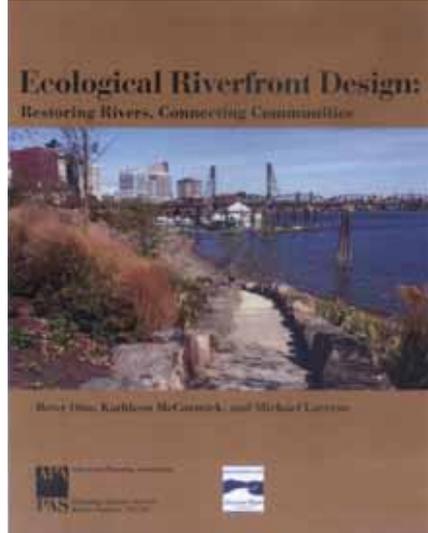


[1-6] 가

[1-8] 가 ()

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3		, , 가 ,
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6	,	, ,
7		, , , , , ,

(Ecological Riverfront Design) (, American Planning Association)
 (APA) “ - , ”(Ecological riverfront Design: Restoring Rivers, Connection Communities) (General Principles), (Planning Principles), (Design Principles) .



가

[1-7]

[1-9] ((APA))

	<ol style="list-style-type: none"> 1. (,) 2. () 3. () 4. () 5. ()
	<ol style="list-style-type: none"> 1. () 2. () 3. () 4. (,) 5. (,)
	<ol style="list-style-type: none"> 1. () 2. () 3. () 4. () 5. () () 6. () 7. (,) (가,) 8. () , , ,

(Riverscape) (Montag Stiftung Urbane Räume)

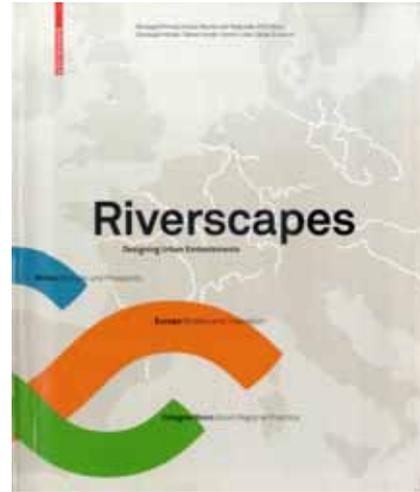
2010 (Regionale)⁶⁾

(2010)

「Riverscapes」

100

가



[1-8]
(Riverscape)

[1-10]

(promenades and public squares)	· () · () /
(urban quarters and buildings)	· ()
(parks and landscapes)	· ()
(new accesses)	· ()
(water adventures)	· () (,)
(conversion and vitalization)	· ()
(flood protection)	· ()

6) (Nordrhein - Westfalen) (Ministerium fuer Bauen and Verkehr)
(Regionale)

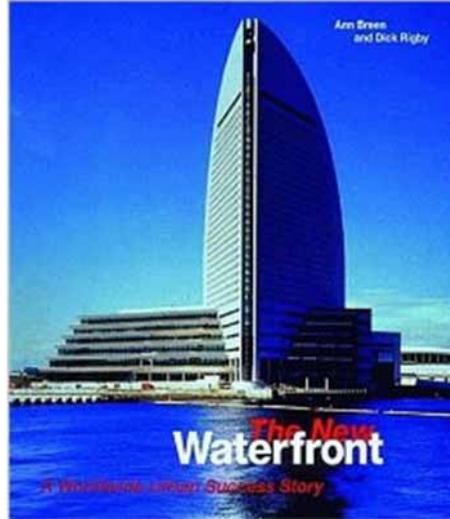
2016 2000

(The New Waterfront)

Ann Breen Dick Rigby 「The New Waterfront : A Worldwide Urban Success Story」 (1997)

(The Commercial W

aterfront), / (T
 he Cultural, Educational and Environmental W
 aterfront), (The Historic Water
 front), (The Recreational
 Waterfront), (The Residential
 Waterfront), (The
 Working Waterfront and Transportation)



(Economic), (Social), (Environ
 mental), (Preservation)
 가

[1-9] (New waterfront)

[1-11]

Economic ()	2
Social (, ,)	가 가
Environmental ()	.
Preservation (,)	가

2)

가

4

[1-12]

	- GIS	-
2009/ 가 /	-	- / ,
/ /2009/ 가	- (, ,)	- :
가 / /2010/	-	- 가
/ 1994/	-	-
4 /2009/	-4 (, ,)가	-5 -4 (, , ,)
/2007/	- MP ,	- -8 - ()
2002 /	-	- (, ,)
/2005/	-	-

가
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 가 가 .

[1-13] .

1999/ /	-) () - -	- - -
2004 / ()	: - - (, ,) - 가 -	- - - -
/ 1997/	- - -	- - -
/ 2002/	- -	- - - 가 가 -
/ 2004/	- 가 (가 60) - 가 (,) ,)	- - (, ,) - (가 ,)

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7)

1

(agriculture)

(culture)

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(settlement)

가

7) Wolf Von Eckardt

가 , 5000 가

가 . Lisa Taylor, *Urban*

Open Spaces, Rizzoli, 1981, p.48



[2-1] : (Impression: Sunrise),



[2-2] ,

Stage	Symbol		Period
	○ city	● port	
I Primitive cityport	○●		Ancient–medieval to 19th century
II Expanding cityport	○—●		19th–early 20th century
III Modern industrial cityport	○—●	●	mid-20th century
IV Retreat from the waterfront	○	●	1960s–60s
V Redevelopment of the waterfront	○	●	1970s–90s

[2-3]

(: B.S. Hoyle , 「Revitalising the Waterfront: International dimensions of dockland redevelopment」, John Wiley & Sons, 1994.)



[2-4]

(註：「
 Patterns and Meanings Through History」), (Spiro Kostof, 「The City Shaped: Urban
 Patterns and Meanings Through History」), () , 2009.)

(邑城)

(背山臨水)

(風水地理)

(風水地理)

가

가

가

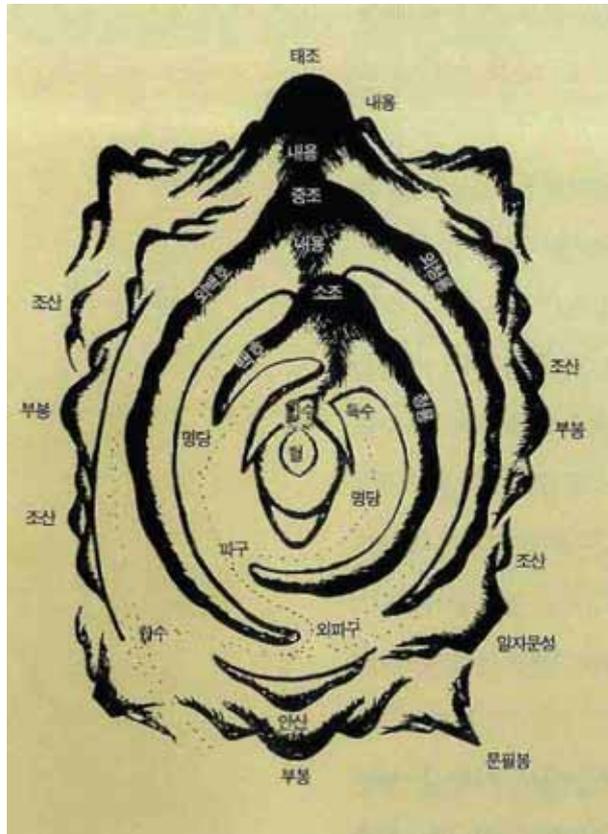
(背山臨水)

가

가

가

가



[2-5]

(: 「 , 2002)



[2-6] ,
(:)



[2-7] , (Jacopo de'
Barbari), 1500
(: The City Shaped)



[2-8] ,
(:)



[2-9] , (C. Anthonisz),
1536 (: The City Shaped)

8) 가
. Peter Simpson eds. (1986), *City of Dreams: A Guide to Port. San Francisco*. San Francisco: Bay Press.



[2-10]
 ()
 (: The City Shaped)



[2-11]
 (, 1881, A.F. Poole)
 (: The City Shaped)

‘ ’

‘ ’ ‘ ’

‘

가

가

가



[2-12] (Charles River)
 (: Bonnie Fisher , 「Remaking the Urban Waterfront」, Urban Land Institute, 2004.)



[2-13] (Charles River) , 1877,
 John Bachman
 (: The City Shaped)



[2-14]
 (:
 (http://e-kyujanggak.snu.ac.kr))



[2-15] ()
 , 1849
 (: The City Shaped)

2) ‘ ’ 가

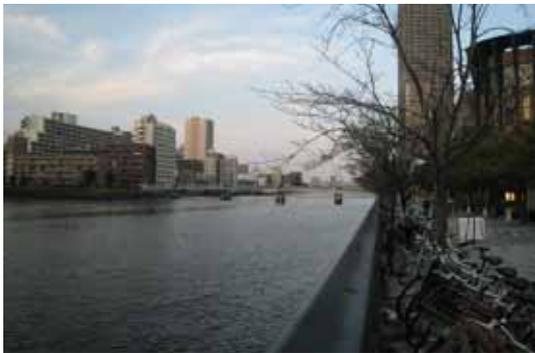
:

가 가
, 가

가

가

가



[2-16]
(, (隅田川))



[2-17]
(21)



[2-18]
(가 , (Marina Bay))



[2-19]
(,)

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 가 . ‘ ’,
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 ‘ ’,
 9) .



[2-20] (가 ,)

[2-21] (가 ,)

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 ‘ ’,
 . . 가 가
 가 ‘ ’ 가 .



[2-22] (, , 1892, Currier & Ives) (: The City Shaped)

[2-23] (,)

9) Roger L. Kemp(2008), *Cities and Water: A Handbook for Planning*. New York: McFarland.

: 가
 , 가 , 가 .



[2-24]
 (,)



[2-25]
 (,)

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 가 .



[2-26]
 (- /)



[2-27]
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[2-1] ‘ ’ 가

가	
	가

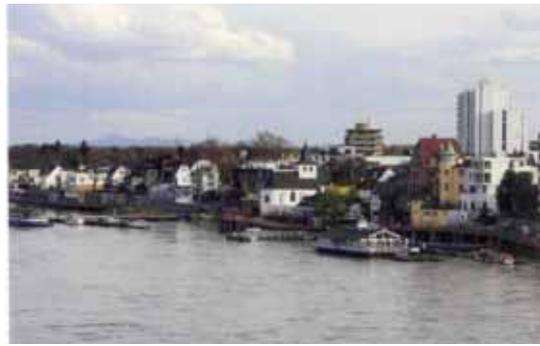
3) ' ' 가?

, , 가 10) , .

가 .



[2-28]
(: The City Shaped)



[2-29]
(- (Köln-rodenkirchen))
(: Ann Breen, Dick Rigby, 「The New Waterfront: A worldwide urban success story」, Thames and hudson, 1997.)



[2-30]
(21)



[2-31]
(가 ,)

10) , , 가 , .

+
 . 가
 , 가 ,
 가
 . 가 ,



[2-32]
(가)



[2-33]
()



[2-34] +
(가)



[2-35]
()

가



[2-36]
(,)



[2-37]
()



[2-38] (leverkusen)
(: Christoph Holzerd , 「Riverscapes:
Designing Urban Embankments」 , Birkhauser
verlag AG, 2008.)



[2-39]
(-)

「
」
가
가
가

「
」
가
가
가



[2-40] - (Köln-rodengkirchen)
(Kölsche)
(: *Riverscape*)

[2-41]
- (bonn-oberkassel)
(: *Riverscape*)



[2-42]
(
(Riverside Park, NYC))

4) , ‘ ’ 가?

가 ;

(Thomas L. Friedman)

"Code Green: Hot, Flat, and Crowded,

"11)

가 가

(1997)

(UNFCCC: UN Frame work convention on

Climate Change)

- 가

, 가



[2-43] (,)

[2-44] (,)

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, 가 ,

. 5 가

, 가 가 .

11) Thomas L. Friedman, , 21 , 2008.

CODE GREEN Hot, Flat,

가



[2-45] 가
(,)



[2-46]
(, (Dusseldorf))
(: <http://www.medienhafen.de>)

:
, C. Alexander가 12)

가 가 .

가



[2-47]
(가 ,)



[2-48]
(, (Pacific Quay , Glasgow))
(: *Riverscape*)

12) Christopher Alexander 가 가 (Access to Water) ‘

가 가

가 가
. Christopher Alexander, *A Pattern language*,

1977, p. 124

가 :

가 가 가 .

가 .

가



[2-49]
: (,)
: &
(: <http://en.wikipedia.org>)

[2-50]
: (,)
(: <http://www.yokohama-akarenga.jp>)

5) 가

(J.Ghehl, 1971)

3가

13),

가 , , , , ,
 가 ,
 가

- 가 (necessary outdoor activities) (,)
- (optional recreational activities) 가 가
 (, , , ,)
- (Social activities) ,
 (,)

(Marcus, 1998)

14)

- 가 ()
- ()
- ()
- ()
- ()

13) J. Gehl, 『Life Between Buildings』 (1971)

14) C.C. Marcus and Francis, C. eds, 『People Places; Design Guidelines for Urban Open Space』 (1998)

• , ()
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 • 가 가 ()
 • 가 , (,)
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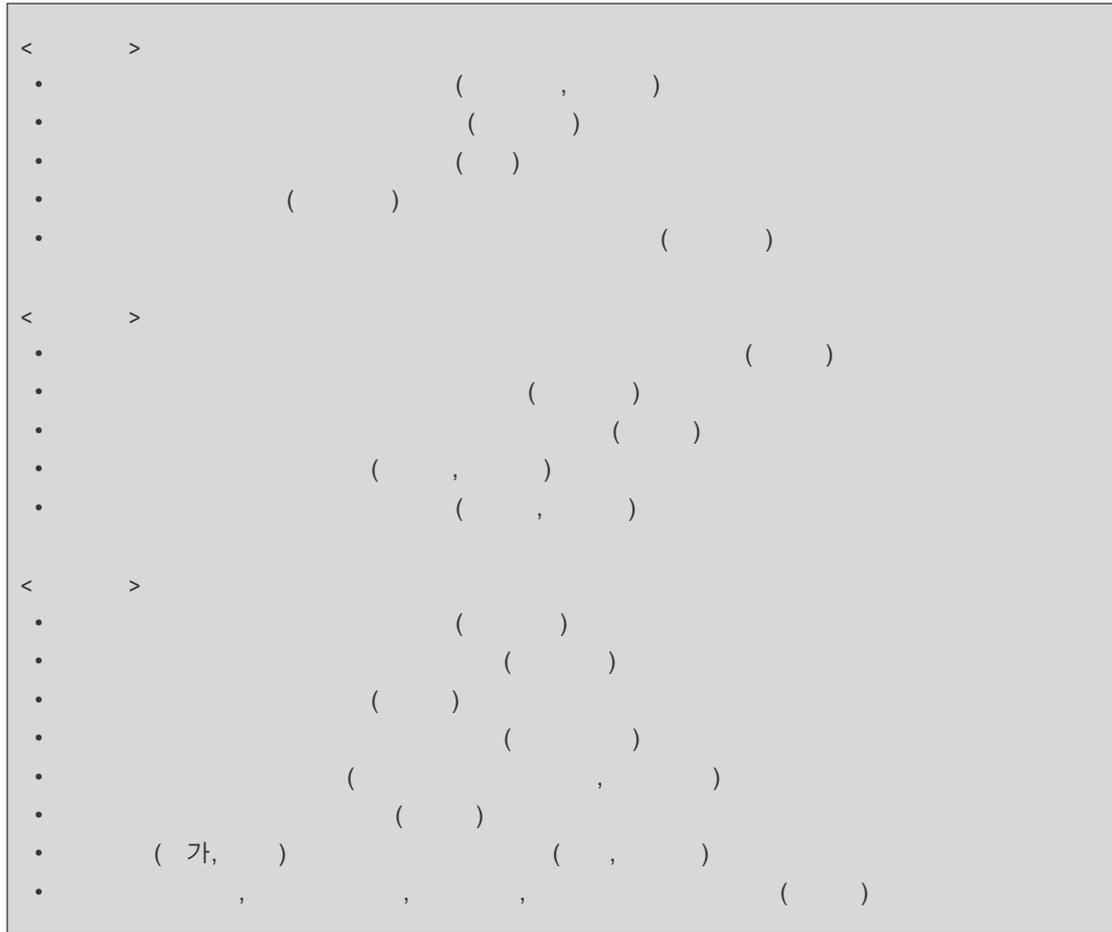
(Cabe, 2004)

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 • 가 ()

15) Cabe, 「The Value of Public Space」 (2004)

(American Planning Association, APA)
 (General Principles), (Planning Principles),
 (Design Principles) 16) .



(2005) ()
)
 17) .

16) American Planning Association, 『Ecological riverfront Design: Restoring Rivers, Connection Communities』 (2004)
 17) , , 「 」, () (2005)

- , , ()
- 가 ()
- , ()
- 가 ()
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- ()
- , 가) (
- , 가 ()
- 가 ()

(1998)

가 .18)

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- 가 () , 가 가 가 (), (),
- , ()
- ()

Christoph Holzer (2008) 2010 ' (Regionale)'

100

, ' ; ' , ' ; ' , ' ; ' , ' ; ' , ' ; ' 7 .19)

18) , 「21 」, (1998).

19) Christoph Holzer, Tobias Hundt, Carolin Luke, Oliver G.Hamm, 「Riverscapes-Designing Urban Embankments」 (2008)

- promenades and public squares : (,)
- urban quarters and buildings : ()
- parks and landscapes : ()
- new accesses : (,)
- water adventures : (,)()
- conversion and vitalization : ()
- flood protection : ()

Ann Breen Dick Rigby(1997)

.20)

- Economic : (2)
- Social : 가 / / 가 (, ,)
- Environmental : ()
- Preservation : 가 (,)

20) Ann Breen, Dick Rigby, 『The New Waterfront : A Worldwide Urban Success Story』 (1997)

(2008)²¹⁾

, , 가

- ‘ , ’ ()
- ‘ , ’ ()
- ‘ , ’ ()
- ‘ , , ’ () 가 ‘ .가 ’
- ‘ , ’ ()

(2007)²²⁾

- ‘ ’ ()
- ‘ ’ ()
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- ‘ ’ ()

(2009)

, 23) ,

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- 가 (, ,)

21) , 「 - 」 (2008)
 22) , 「 」 (2007. 12)
 23) , 「 」 (2010)

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가 .

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[2-2]

							Chisto ph Holzer (2008)	Ann Breen (1997)			
	(J.Ghe hl, 1971)	(Marc us, 1998)	(Cabe , 2004)	(2004)	(2005)	(1998)			(2008)	(2007)	(2009)
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		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
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		<input type="radio"/>									<input type="radio"/>
()				<input type="radio"/>			<input type="radio"/>	<input type="radio"/>			

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 24) .(2 ())
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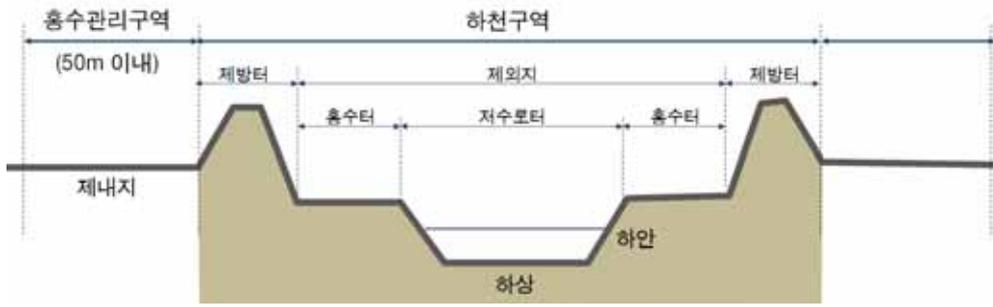
26)

24) ‘ ’ (, ,), (, ,),
 (,), (, ,) .

25) “ ” . (“ ”) . (「 』 2 ()),
 가 , 가 .

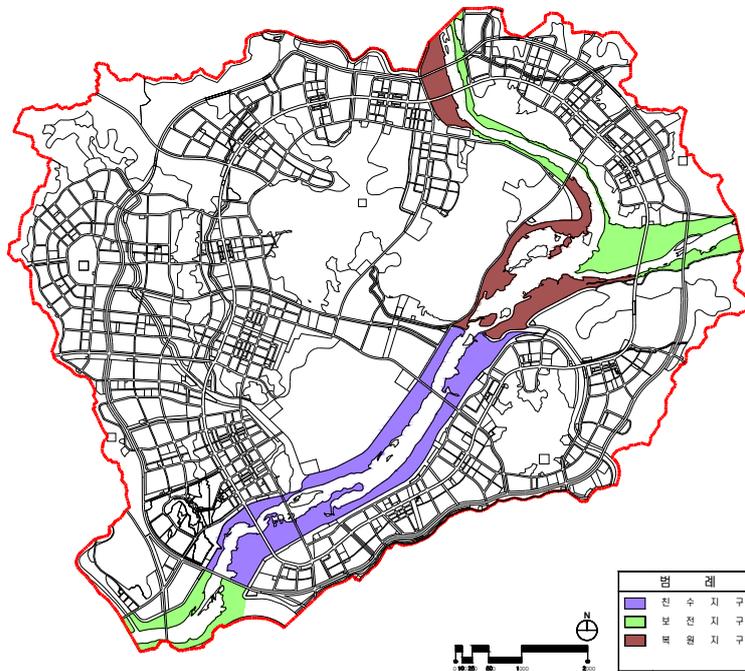
26) 10 (가) ① 7 6
 .

1. 25 (" ") 가 ((河心側))
2. ()
3. ()
4. . . . ()
5. .
6. 가 , ,
 1



[2-51]

, 「 」 (44)



[2-52]

1. 가 가 2. , 3. 가 4. 5. 가 가 6. 1 5 가	
1 가 1 가	
1. 가 2. , 3. 가 * .	

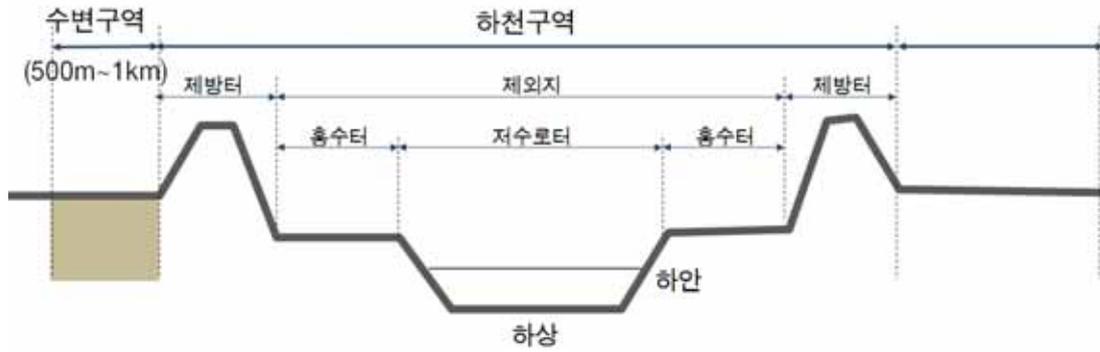
가 「 」 27)
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 (湖沼) 500 ~1 ,
 28), 29), 2

27) 「 」, 「 」, 「 」, 「 」
 28) 「 」
 29) 2 , 6 3

.30)

4

1,000km²가



[2-53]

[2-4]

	(. 가), (.), (.)	191km ²
	(.), (.)), (.)	274km ²
	(.), (.), (.), (.), (.)	373km ²
	(.)	223km ²

「 」 ‘ ’ 가

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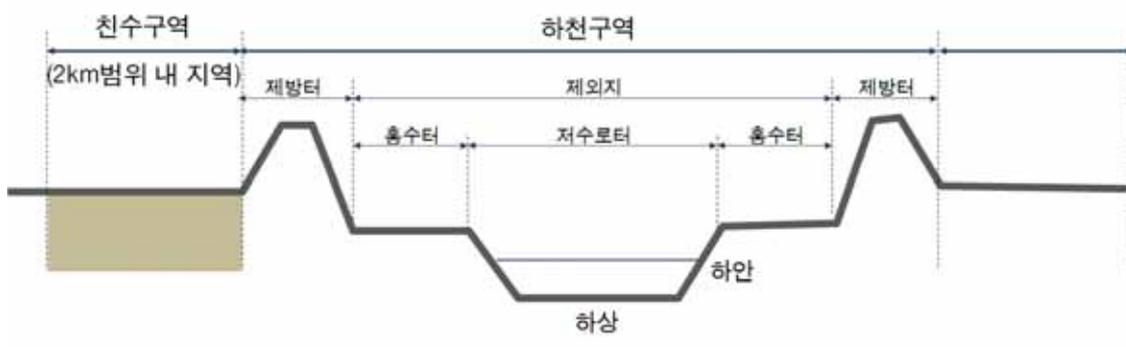
.31)

30)

4

50

가
 (4 1) .32)



[2-54]

가
 가 , (水際域), ,
 , (riverfront), 가
 ,
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 , (2002) ‘ ,
 , (2002) ‘
 1
 가

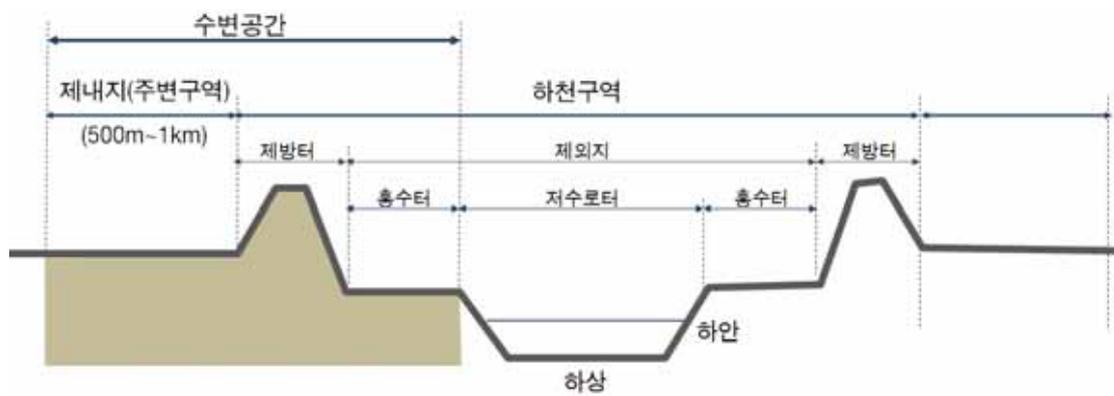
31) 「 가 2 () 2 , “ ” 가
 2
 4 (가) ① 가 . 4

32) 「 가

가 , () 가 (1998)

(500m~1km)
(2km) 2km

- “ ”
- 「 」 (500m ~ 1km)
- 「 」 (2km)
- (500m ~ 2km)



[2-55]



[2-56] - /

2)

(, .)

가

「 (, ,)

33)

가 .

4

39

, , 19 , . , , ,

20

가

33) (「 (湖沼) 500~1,000m ' , ') 4)

가

/ /

가

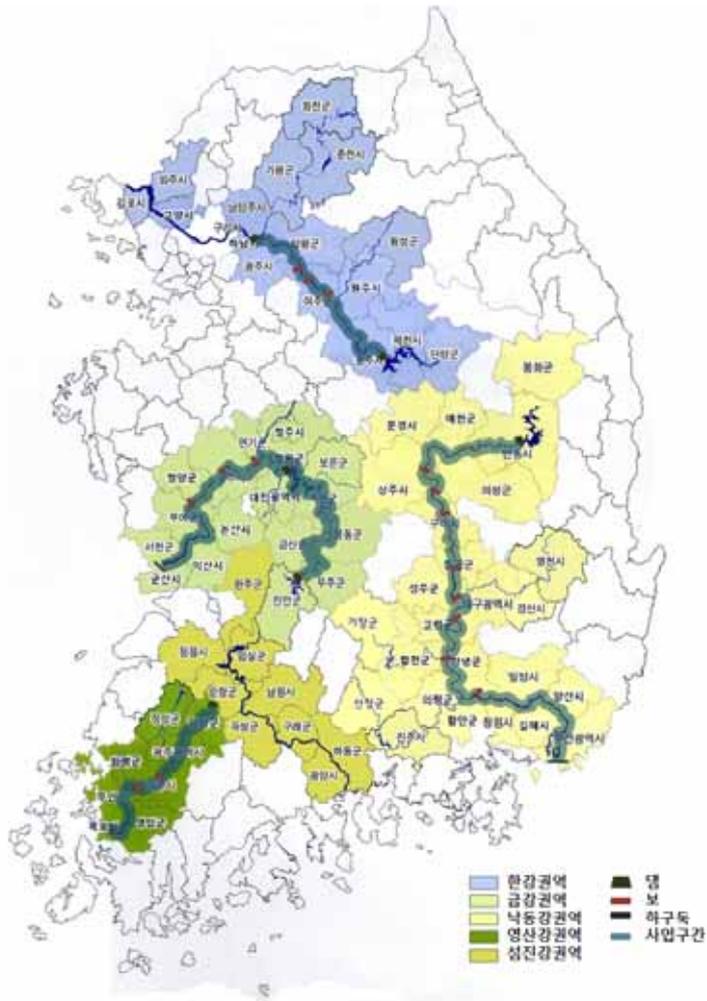
가

가

/

/

.34)



[2-57] 4

34) , 2009,

가

4

가

가



[2-58]



[2-59]



[2-60]



[2-61] 가 (秋川)
(: 가 -)

가

가

가

가



[2-62]



[2-63]



[2-64]



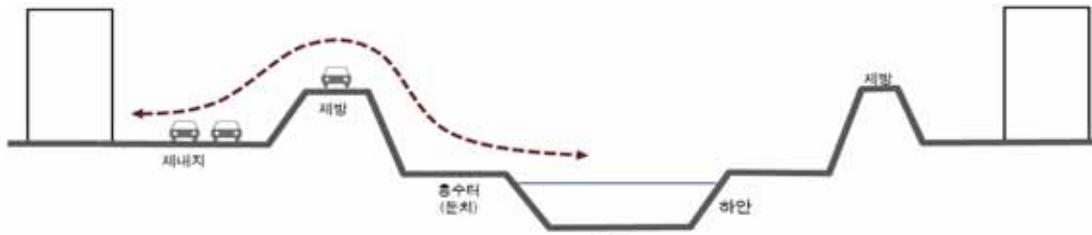
[2-65]

(,) , 가 , 가 , 가 . 가 4 , , , , 4 , (), (/ 가) .

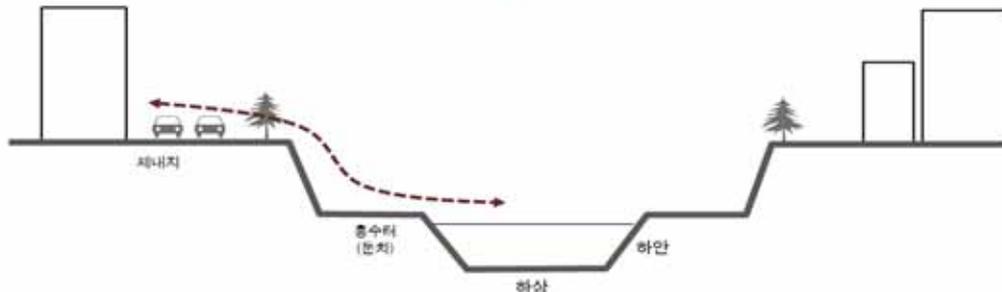


[2-66]

가 , 가



큰강(분류)의 개수하천 형태



작은강(지류/지천)의 개수하천 형태

[2-67]

가

가

가



[2-68]
()



[2-69]



[2-70]



[2-71]



[2-72]



[2-73]

가 , 가 가 가



[2-74] -



[2-75] 가 가 -



[2-76] - 가



[2-77] -



[2-78] 가 -



[2-79] 가 -



[2-80]
(,)



[2-81]
(,)
(:)

가 ,



[2-82]
(,)



[2-83]
(,)

가 ,

가 가 .

가 .

가 .



[2-84]
(,)



[2-85] 가
(,)

가 , 가 , 가 , / / .



[2-86]
(,)



[2-87]
(,)

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 가 , 가 ,
 , 가



[2-88]
 (,)



[2-89]
 (,)

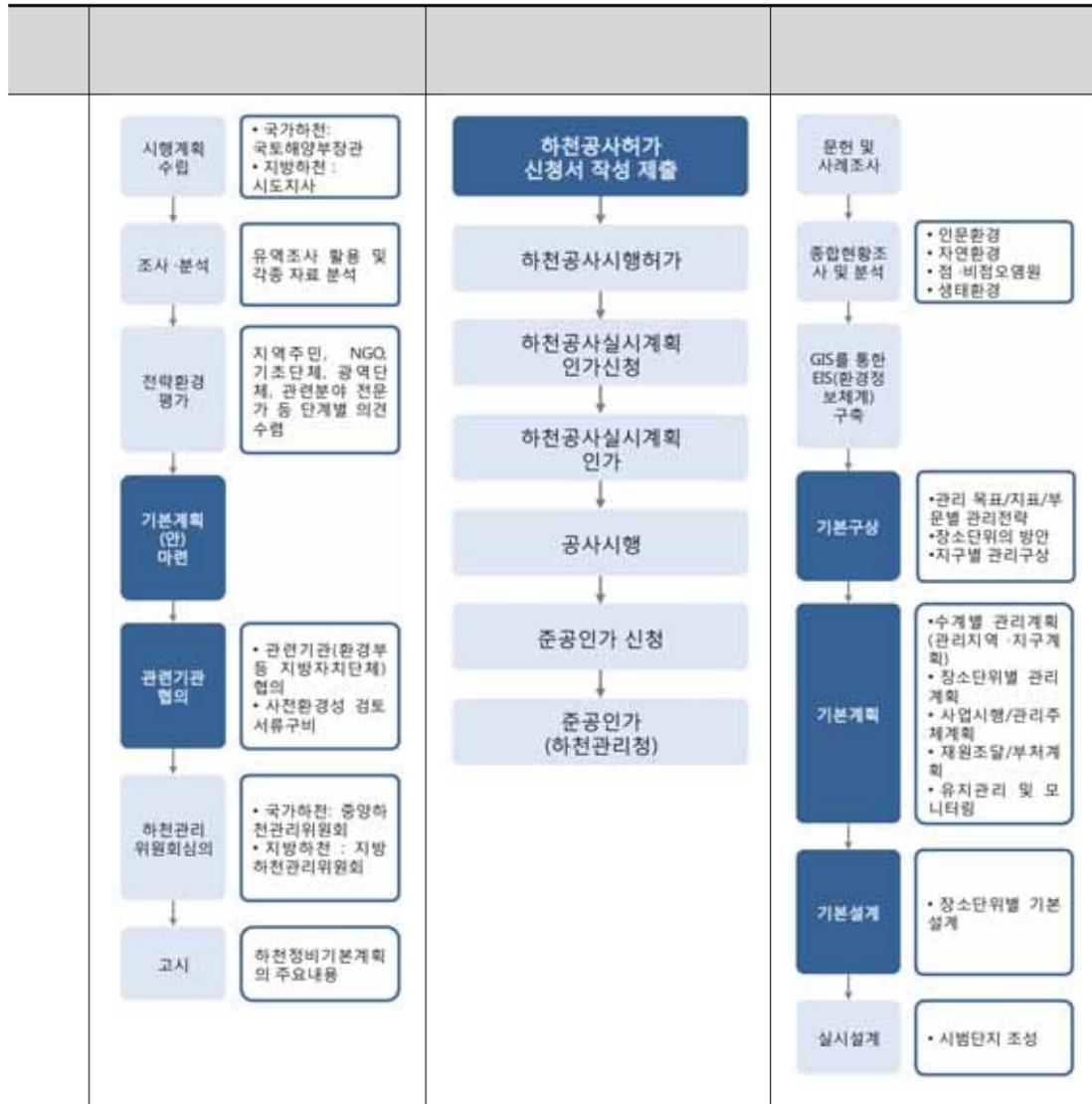
[2-5]

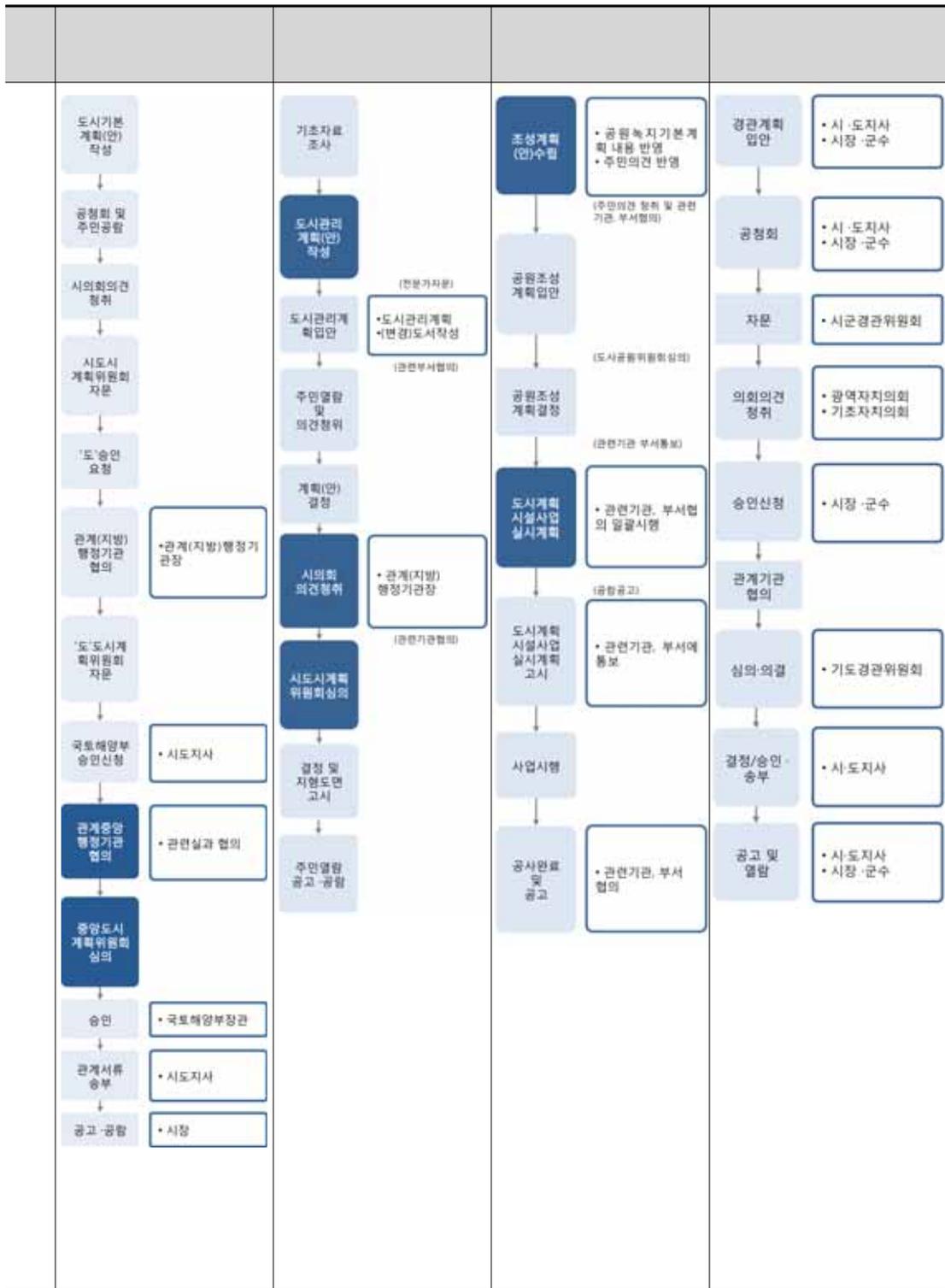
	()					
		20				
		10	,			
	()	10			(가	,
	()		{)	
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)	
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	()	20		(,	/ , ,
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	2	10	,)	,	, ,
			/			
			,			(,
			,)
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)		
		10	,		,	(,
			,		,	가)
		5				
		10				,
						,
	가	10	가	,		.
				,		.

가

가

[2-6]





3

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- 2.
3. 가

1.

1)

가 . 77 35)

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가

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가

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2 가 (), (), () .

[3-1]

1	501.20km ² (95.42%)	712.84km ² (38.52%)	615.49km ² (28.33%)	459.84km ² (50.33%)
()	1,423,625	331,222	398,949	511,603
2(/)	()	()	()	()
3()	,	,	,	,
4()		/	/	

: 2009 2009 2009 2009

2)

GIS

4

4

2×3km

GIS ,36)

/

()

36) GIS,

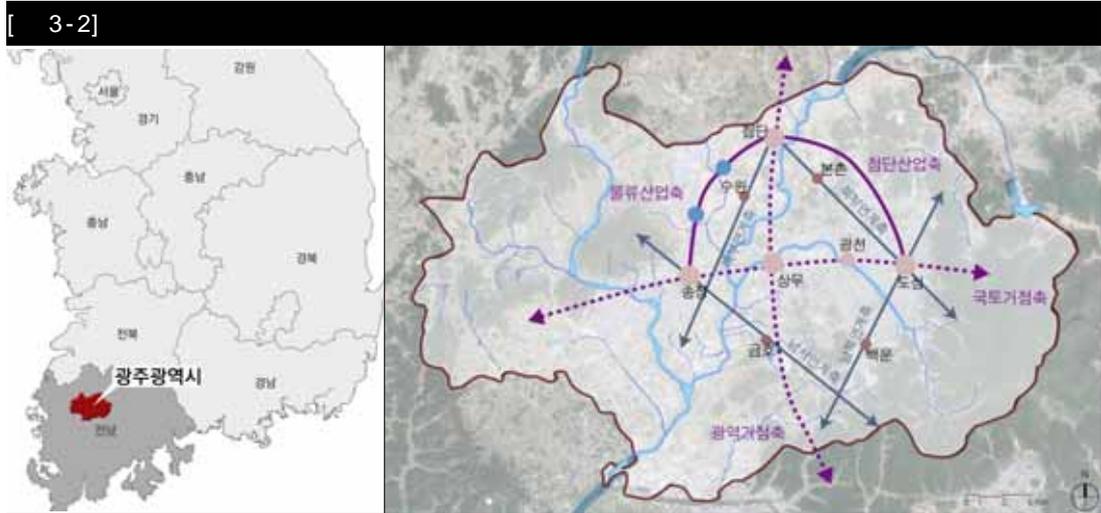
2.

1) :

37)

가 . ' ,

.38)



• : 가
 • : ,
 • : - / / /
 • : , ,

* : 2020 20p

37) 143 (2009) 1980 3.0%, 1990 1.5% 가
 501.34km² 478.35km²(95.4%), 19.44km²(3.9%), 3.55km²(0.7%)
 , 304.42km²(60.7%) 가

38) (2007), 「2020 」

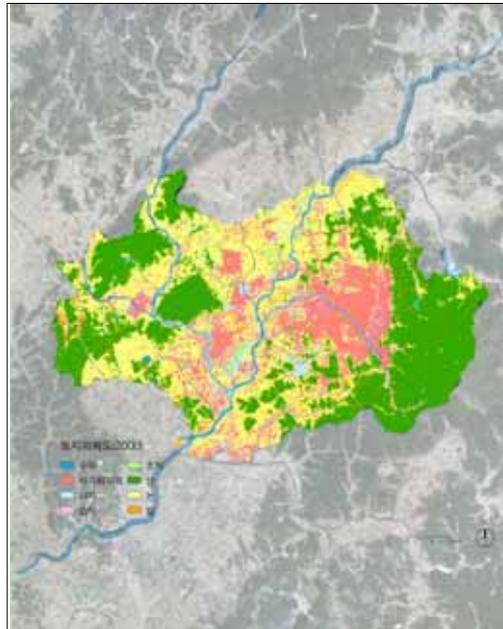
가 , 가
 가
 (36.4%) (34.7%) 가 , 가
 (18%), (4.3%), (3.3%), (1.6%), (1.6%)
 36.4% ,
 39)가
 가 가
 가

[3-3]

	가							
(m ²)	807	8,974	2,144	12	805	18,099	17,259	1,625
(%)	1.6	18.0	4.3	0.0	1.6	36.4	34.7	3.3



[3-1]



[3-2]

39) (樹冠密度) : , (:
 ,)

가 3 , 1 2 , 2 27 32
220.18km .

가
3

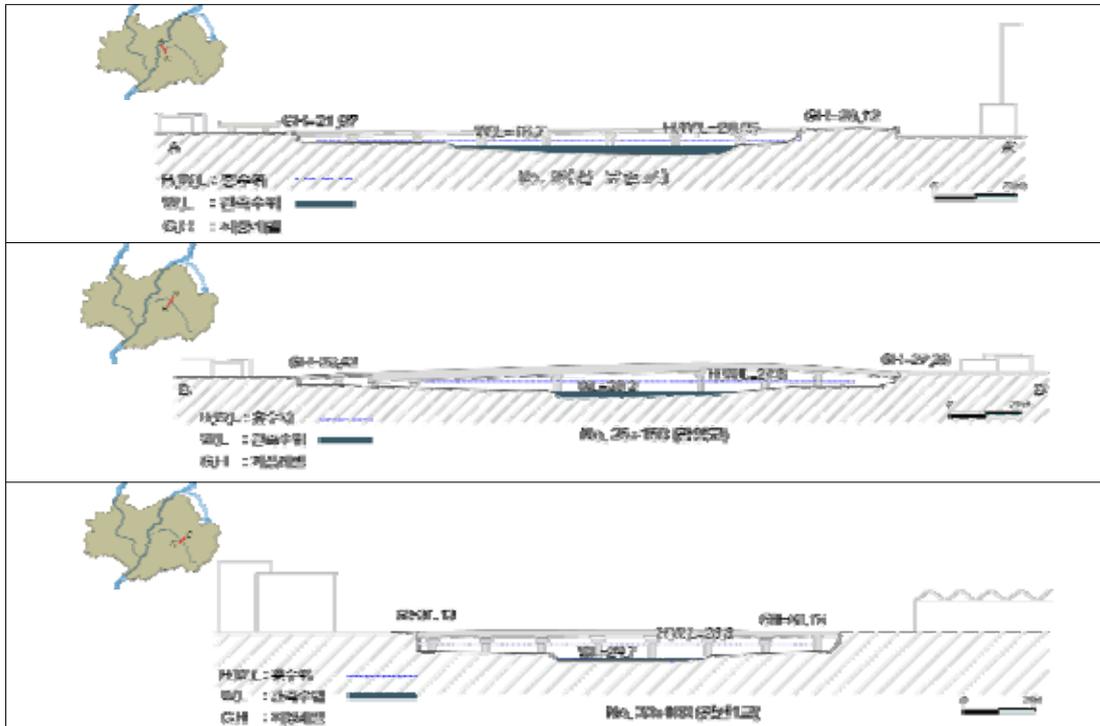
가

가

가

3

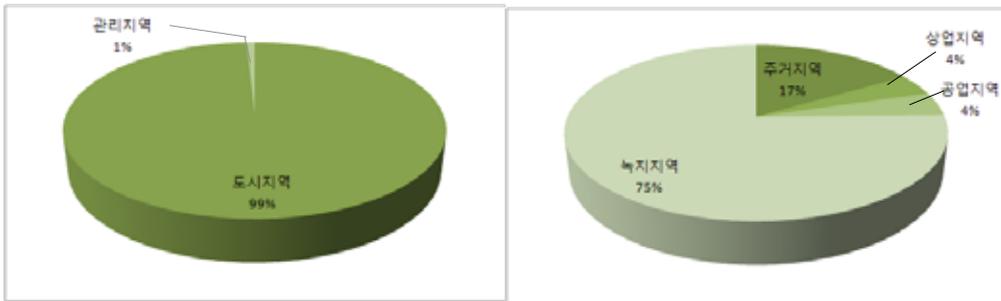
가



[3-3]

(1km)

99.2%(218.8km²)
 16.5%(23.7km²), 3.9%(5.6km²), 4.3%(6.1
 km²), 75.4%(108.6km²)



[3-4]

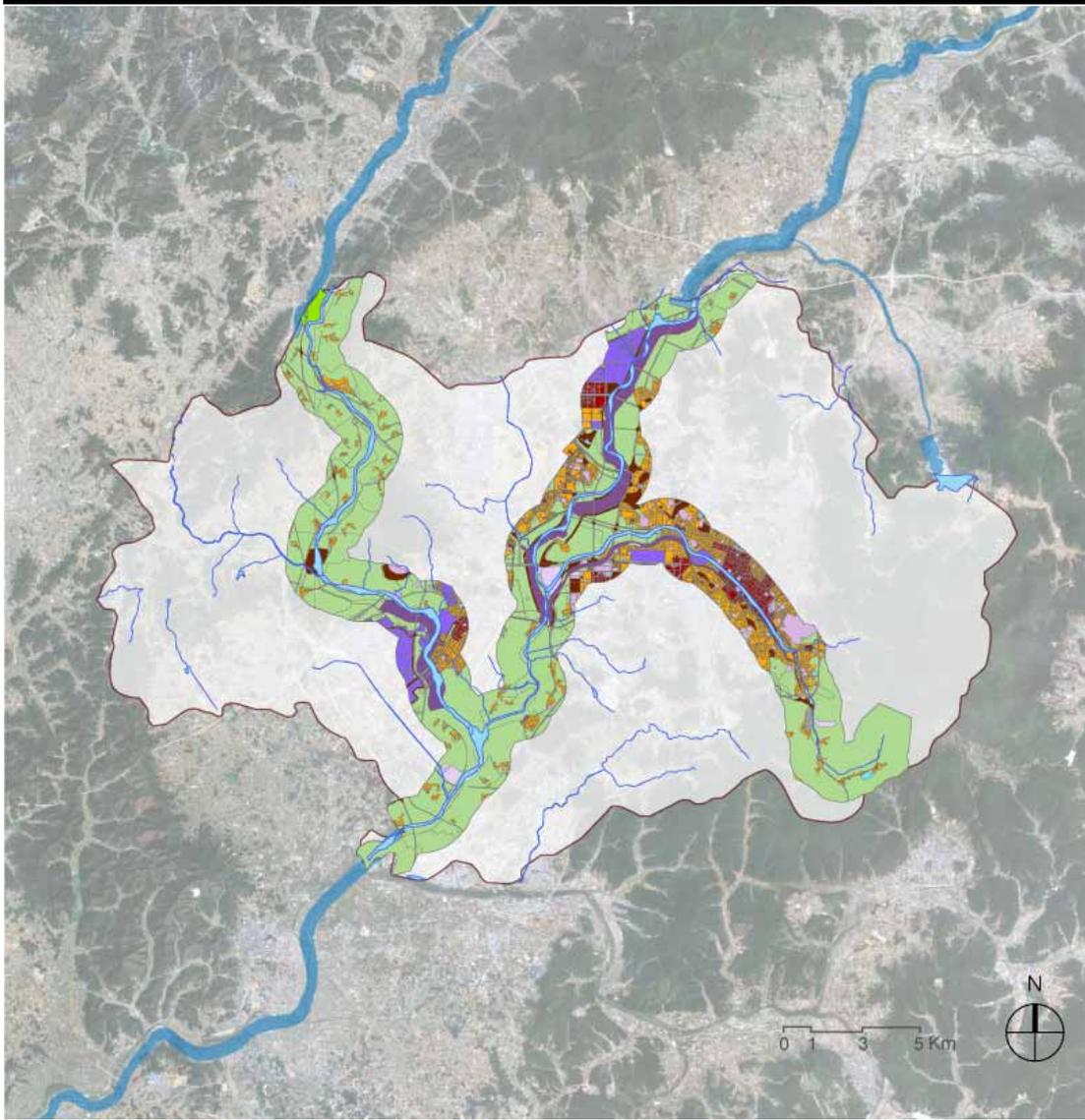
[3-5]

162 가 (, ,) 648 , 3,259 ,
 164 , 15 가 .

[3-4] 1km

	3,259	648	53	164	162	2	15
(m ²)	12,915,737	6,357,863	305,192	3,438,574	8,981,187	7,198	1,271,398

[3-5]



	<ul style="list-style-type: none"> • 99.2%(218.8km²) • 17% • (,) 			<ul style="list-style-type: none"> • 0.8%(1.7km²)

가

40)

1



()



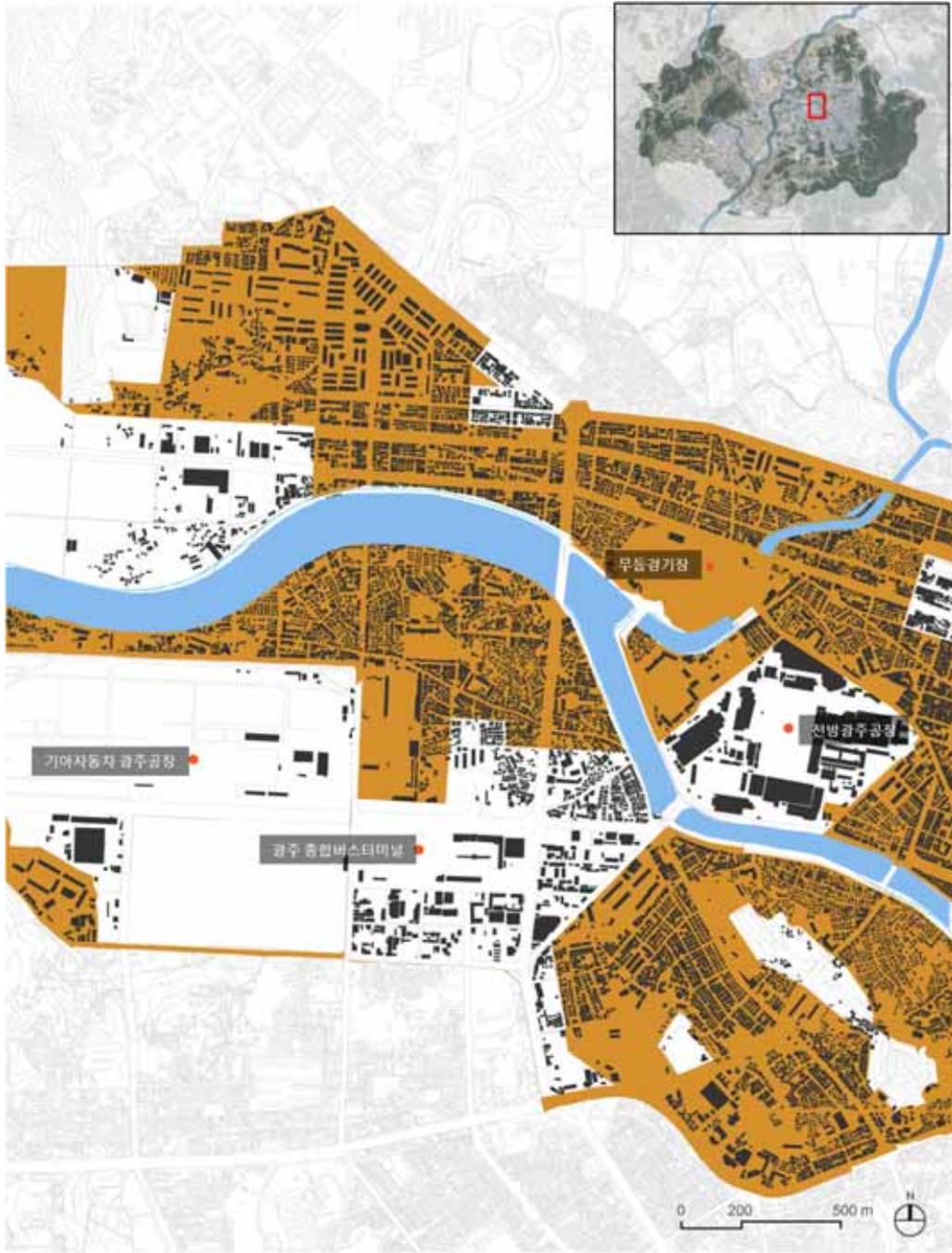
()

[3-6]

40)

3km×3km

76



•

•

가

• 가

35m (1)가 2
 1 , 22
 . 가 1 , 가 ,
 5m 가 .

•

3 , 3 , 6 , 3
 , 1 .
 ,
 가 .

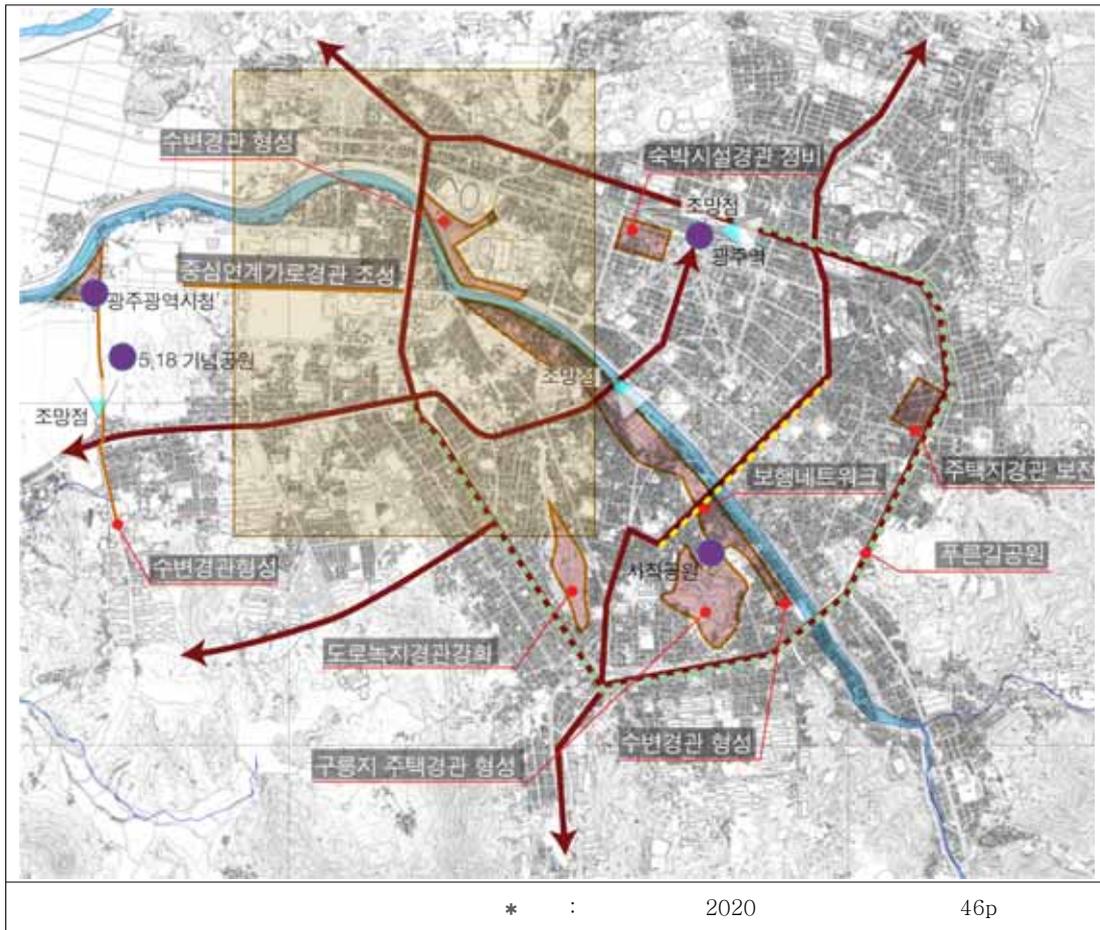
(2), (6), (1) .

[3-7]

	3	3	6	3	1	8	2	6	1
(m ²)	12,505.1	7,456.5	15,931.7	104,555.2	887.9	224,2	10,059.6	159,888.0	3,196.9

•

, 5 m²
 ,
 가 가 . 2006
 () .



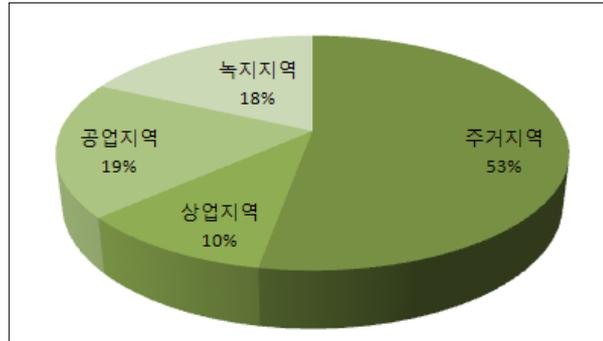
[3-7]

[3-8]

	(m ²)	(%)
0~5	544.9	82.2
5 ~10	73.0	11.0
10 ~15	13.8	2.1
15 ~20	-	-
20 ~25	-	-
25	31.0	4.7
	662.7	100.0

52.8%(3.5km²), 10.5% (0.69km²),
 18.7%(1.23km²), 18%(1.1km²)

가



[3-8]

[3-9]

	(km ²)	(%)
	3.48	52.8
	0.69	10.5
	1.23	18.7
	1.18	18.0

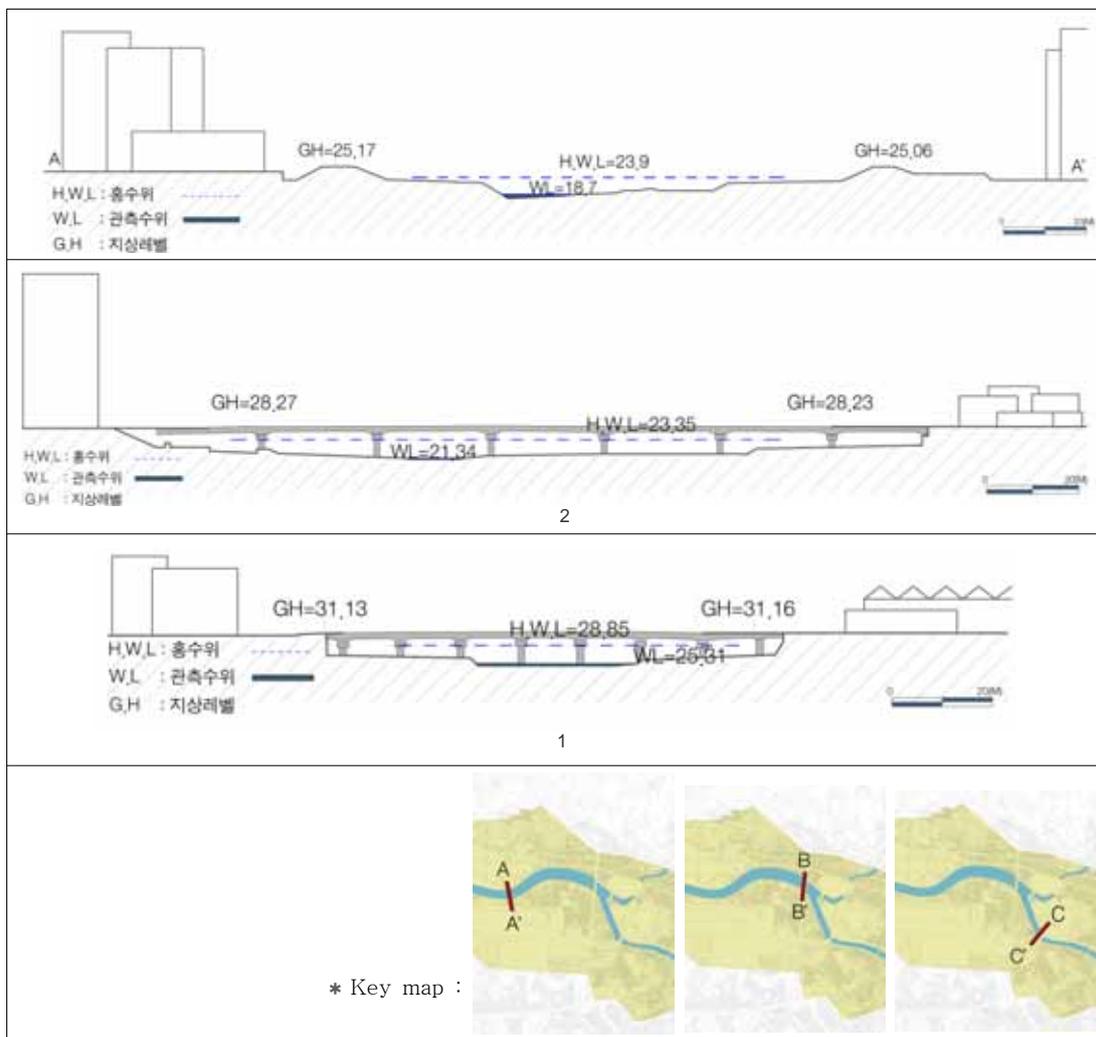
가 가
 가 , ,

『2020
 가
 가
 가
 가
 3
 가
 가
 5.18
 42m

[3-10]

	1	2	3	
(m ²)	-	10.7	0.12	10.87
(%)	-	98.8	1.2	100.0

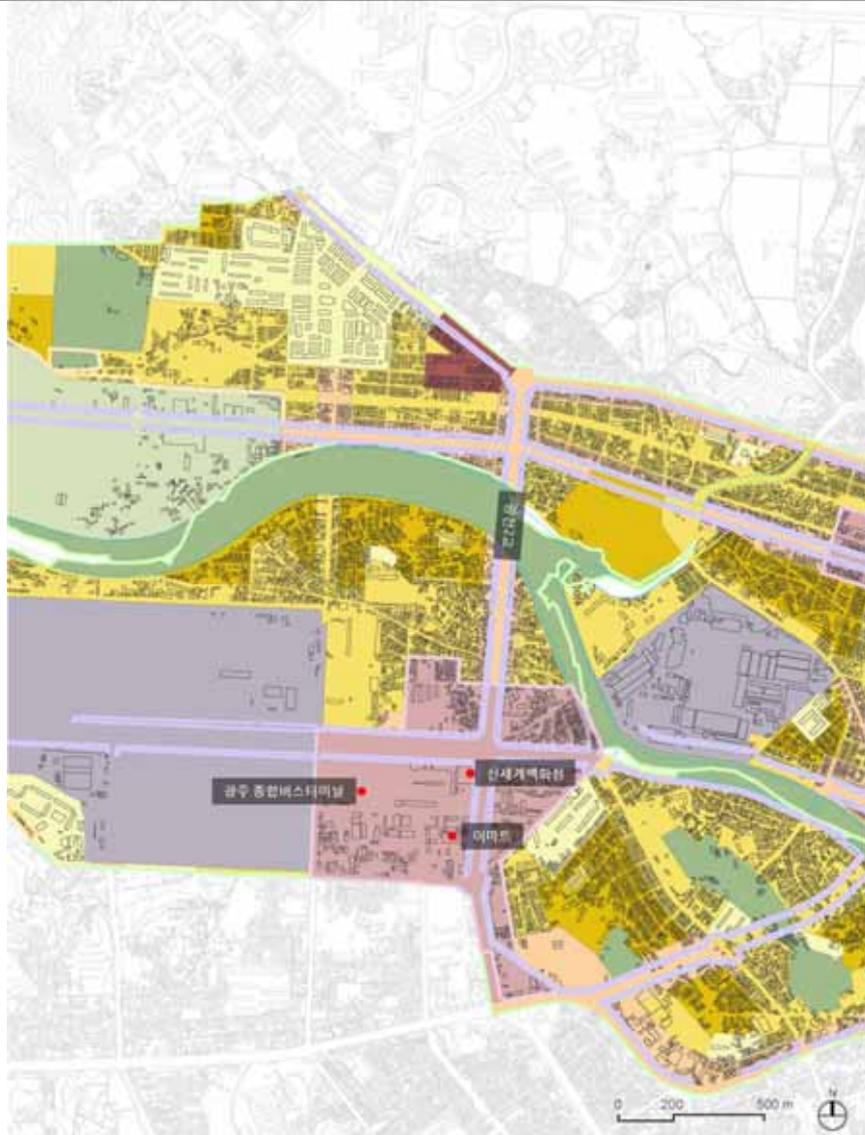
• ()
 18.7m, 23.9m,
 25.06m 가 1.2m
 2 10 21.34m, 23.35m,
 29.3m ,
 1 8 25.1m, 28.76m,
 31.16m



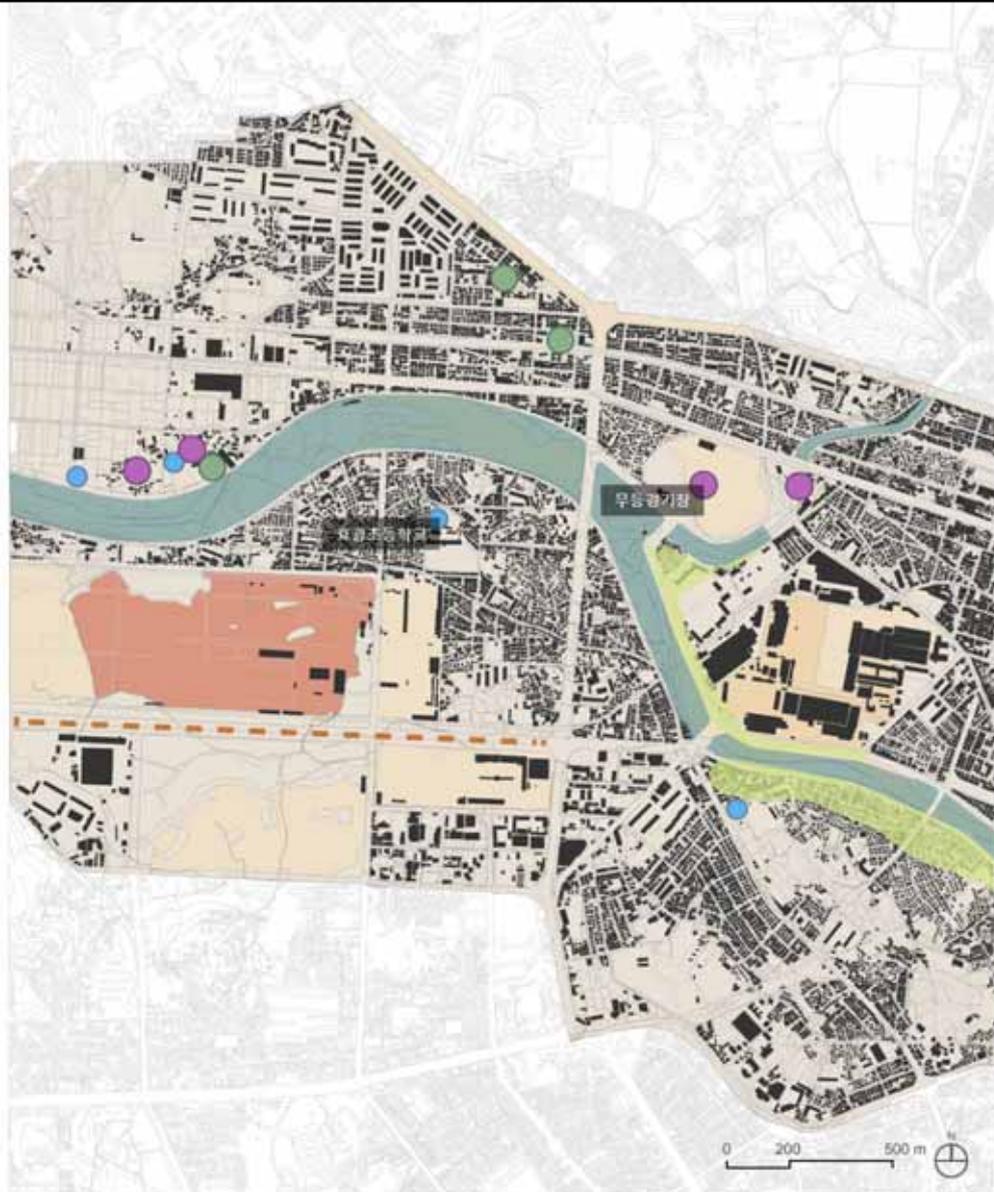
[3-9]



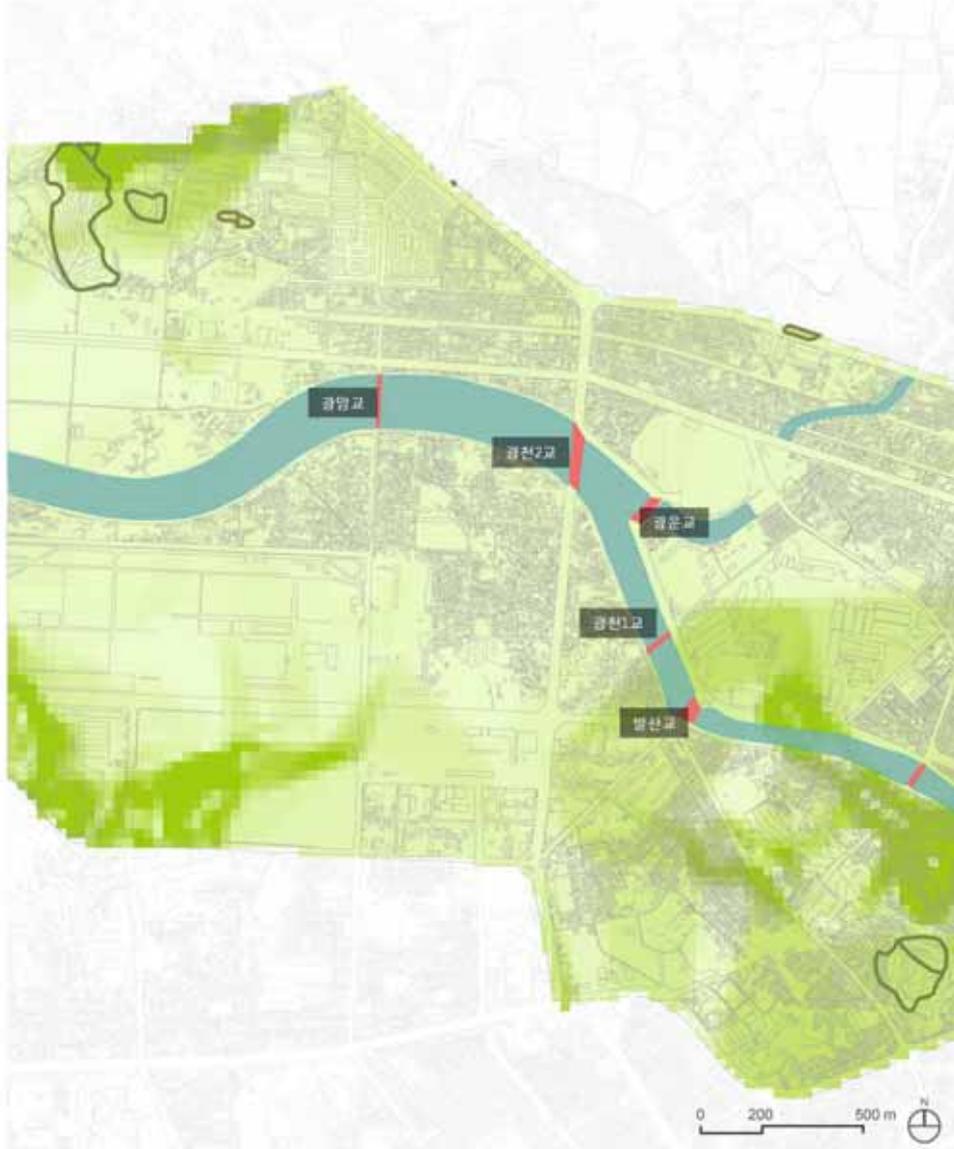
					
					
					
	•	1	1	, 22	가
	•	가	5m	1	, 가
	•	1	3	, 3	, 6, 3



	1 2 3 	 	 	
	<ul style="list-style-type: none"> • 가 52.8% 	<ul style="list-style-type: none"> • 가 10.5% 	<ul style="list-style-type: none"> • 가 18.7% 	<ul style="list-style-type: none"> • 가 18%



		(m ²)	
■	■	□ 0-5	□ 15-20
■	■	□ 5-10	□ 20-25
■	■ 가	□ 10-15	□ 25
•		가	
•			



<p>42.3M 0.0M</p>	<p>2 3</p>	<p>/</p>
<ul style="list-style-type: none"> • 2 (98.8%) • 2 • 가 42m 	<p>3 가</p>	

2) . :

41)

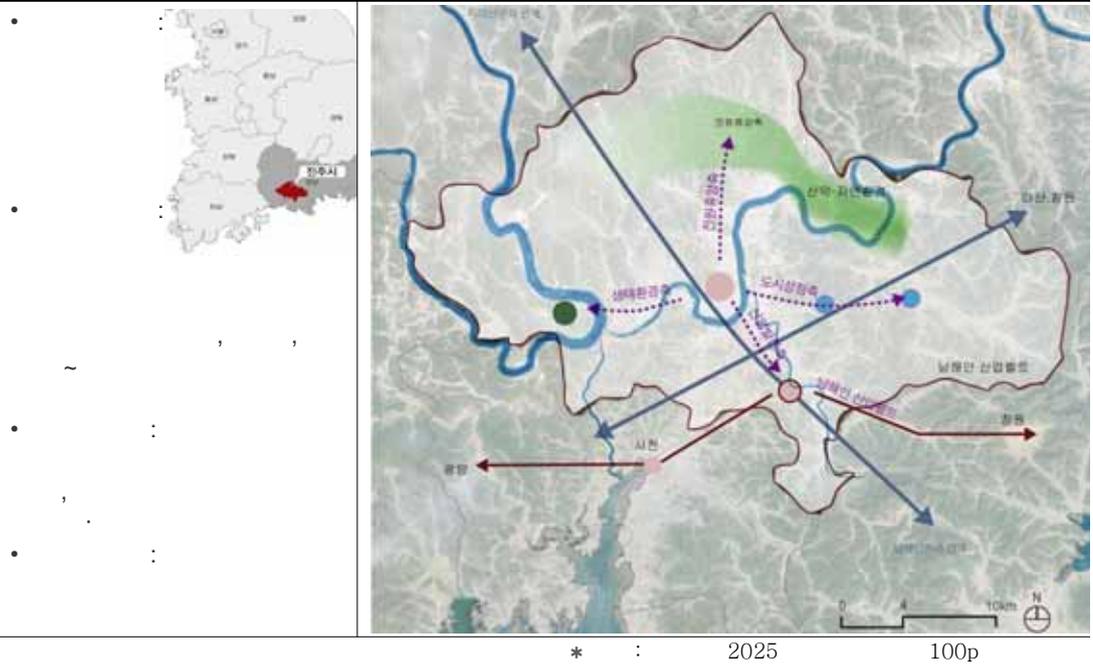
가

.42)

가

가

[3-15]



41)	33	(2009)	10.2%	2000	가
		712.84km ²	275.44km ² (38.6%),	123.44km ² (17.3%),	310.18km ²
		3.78km ² (0.5%)	가		
42)	(2008)	「2025	」		

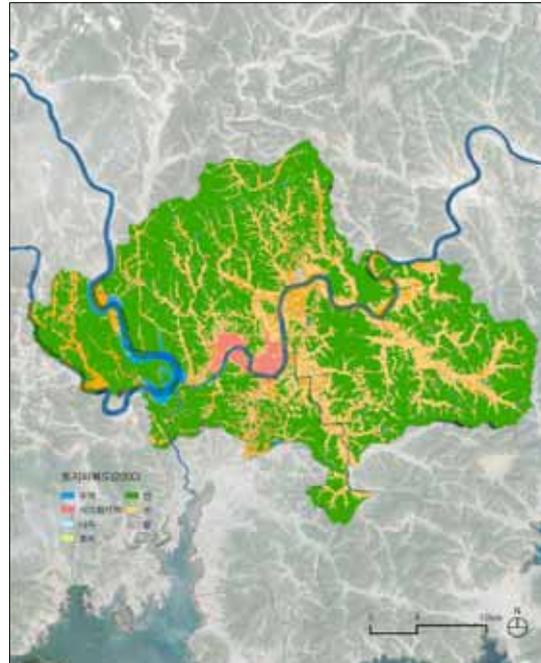
가 , , 60.2% 가 , (24.2%), (6.2%), , 가 , , , .

[3-16]

		가						
(m ²)	1,880	18,982	3,057	-	136	44,686	17,969	4,578
(%)	2.5	2.6	4.1	-	0.2	60.2	24.2	6.2



[3-10]



[3-11]

240 가 3 , 2 55 , 182
 642.5km . , 가
 1 , , 3

1969

가,

가

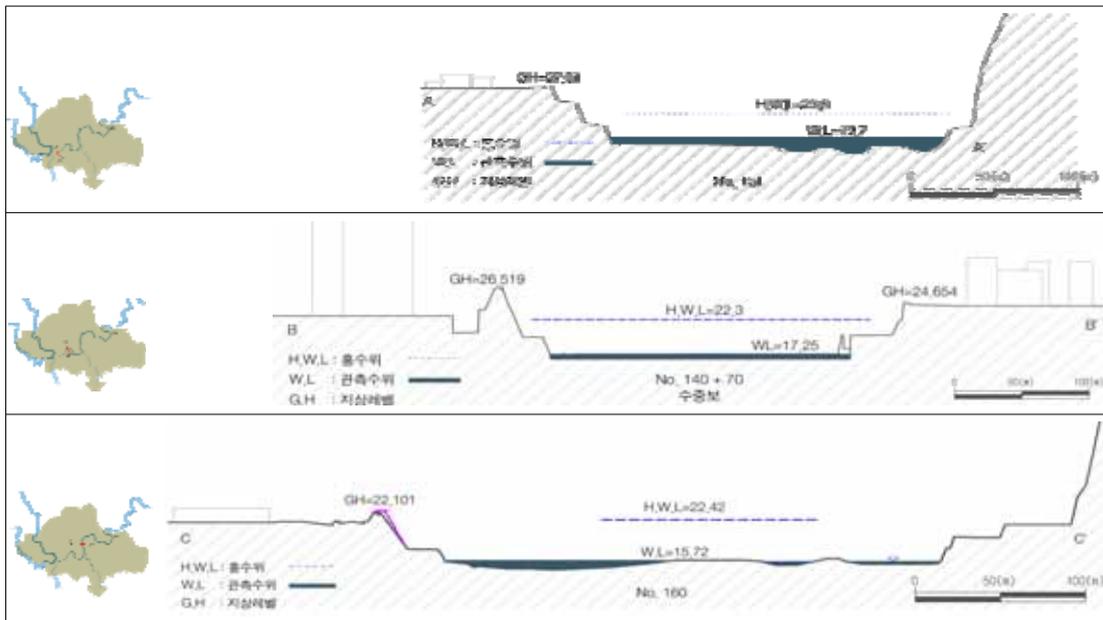
가

1999

8

가

3

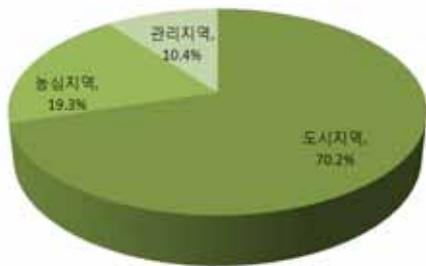


[3-12]

(1km)

70.2%(100.8km²), 10.4%(14.9km²), 19.3%(27.8km²)

8.4%(8.4km²), 2.1%(2.1km²), 2.8%(2.8km²),
86.7%(86.7km²)



[3-13]

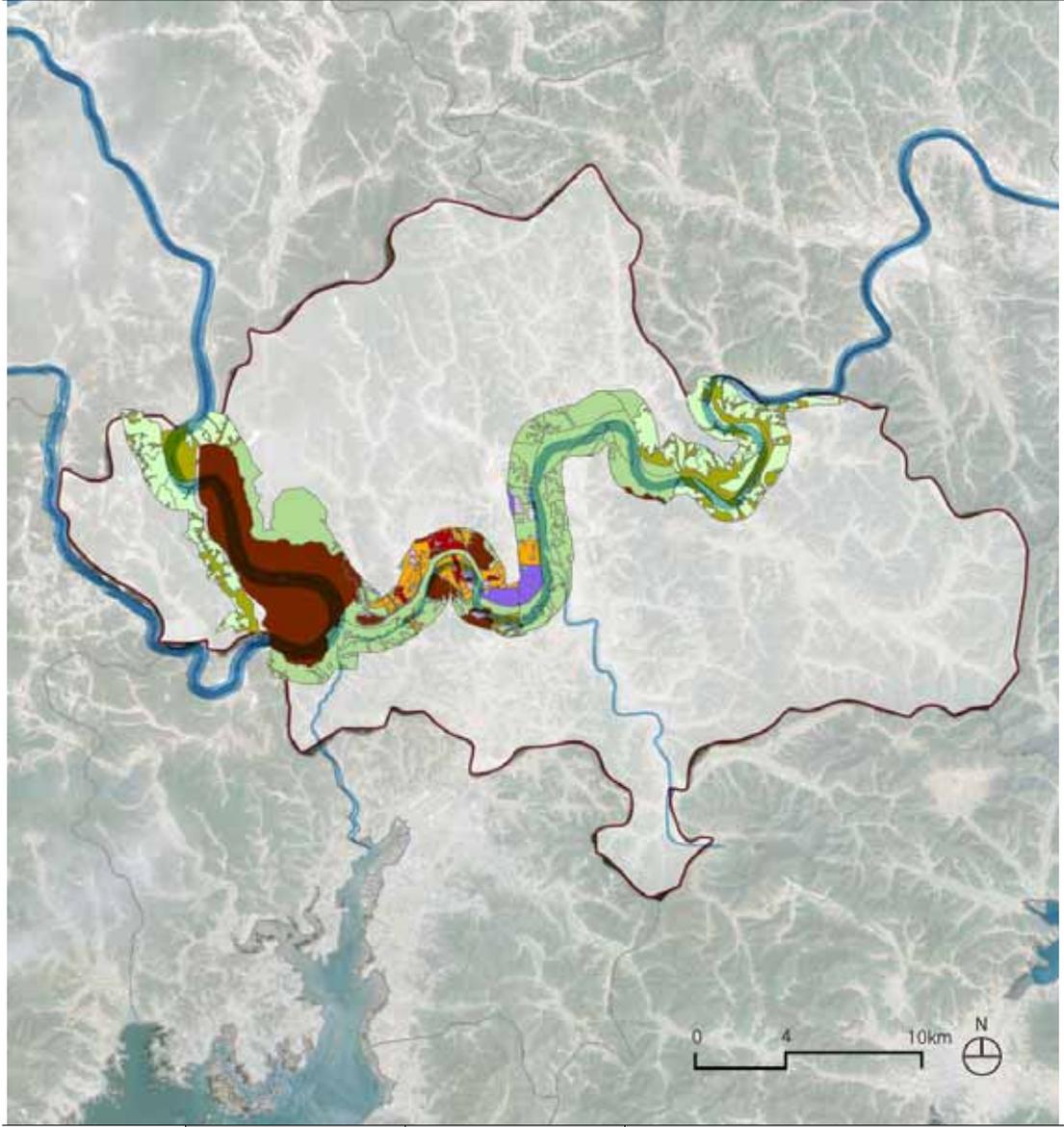


[3-14]

39 , 2 가 77 , 11 ,

[3-17] 1km

	159	77	11	39	2	2	2
m ²	4,754,854	34,163,215	272,657	1,686,727	7,320	60,992	194,976



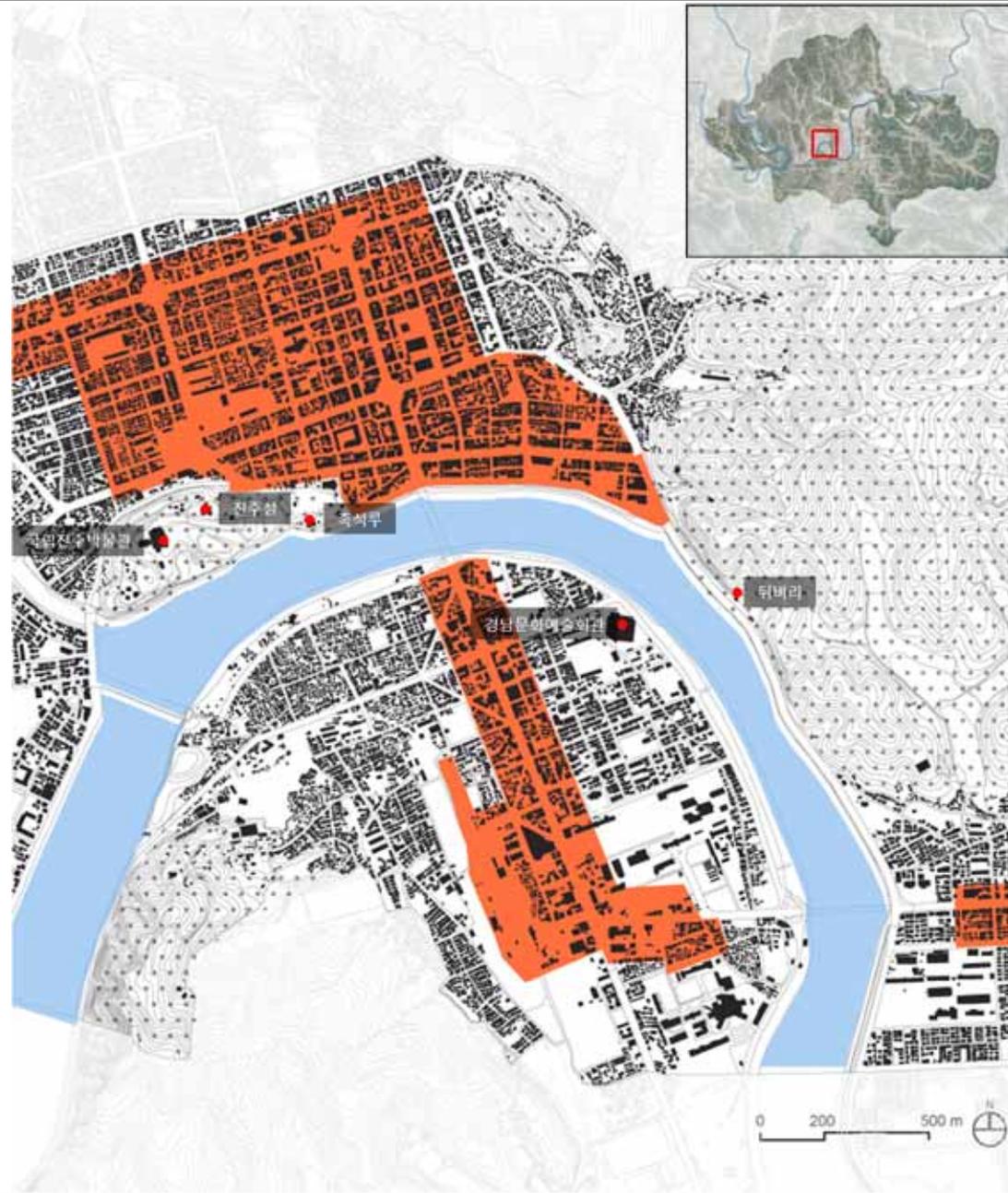
	<ul style="list-style-type: none"> • 70.2%, • 8.4%, 	<ul style="list-style-type: none"> • 10.4%, • 2.1%, 	<ul style="list-style-type: none"> • 19.3% • 2.8%, 	<ul style="list-style-type: none"> • 86.7%

()

3



[3-15]



-
-

• 가

가 25m (3)가
 가 3
 ()

•

(3) (9), (6)

[3-20]

	6	5	1	3	2	1	1	8	1
(m)	35,483.4	1,558,665.1	168,610.8	9,533.8	95,962.8	13,437.5	19,100.6	40,5041.0	638.3

•

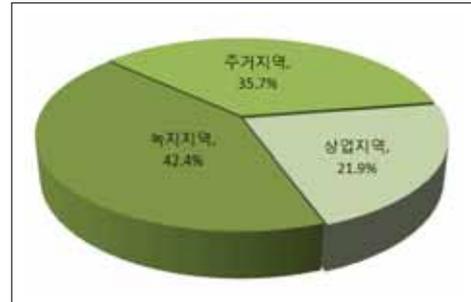
5~10 m²(82.6%)

[3-21]

	(m ²)	(%)
0 ~ 5	591.7	82.6
5 ~ 10	55.1	7.7
10 ~ 15	11.8	1.6
15 ~ 20	-	-
20 ~ 25	-	-
25	58.1	8.1
	662.7	100.0

35.7%(2.6km²),
42.4%(3.0km²)

21.9%(1.6km²),
1



[3-16]

[3-22]

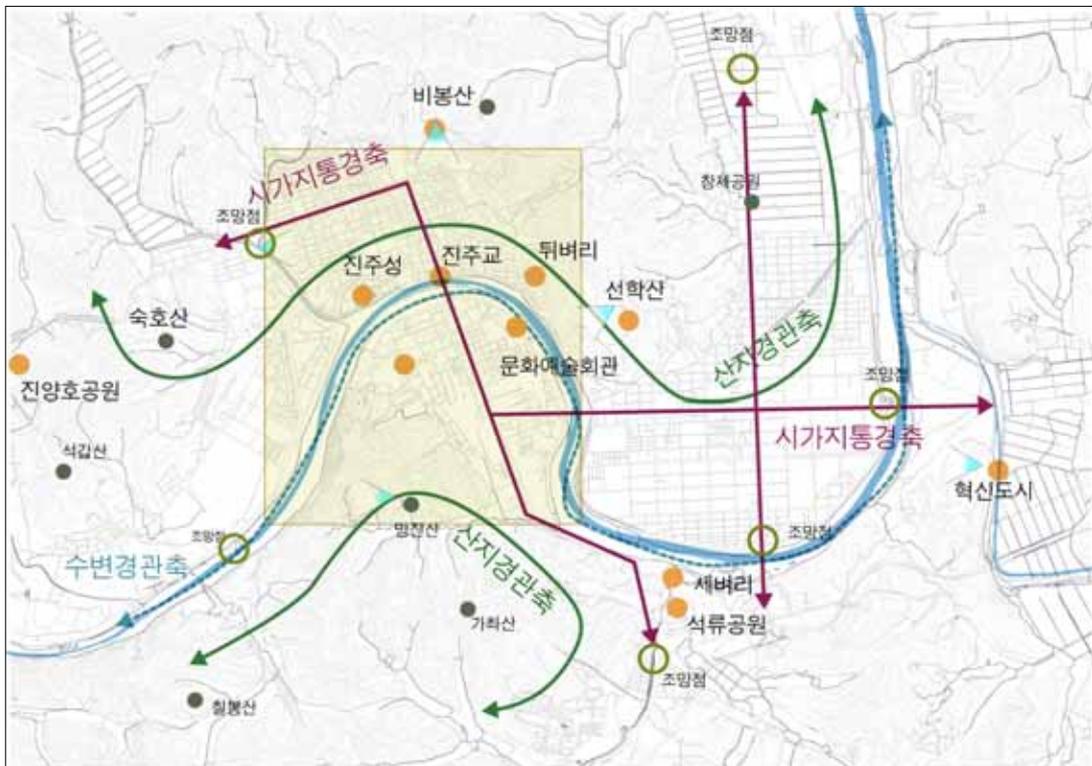
	(km ²)	(%)
	2.6	35.7
	1.6	21.9
	-	-
	3.0	42.4

가 , ,
3
, , 5 (20m) , 3 (12m)
4
, , 6 (24m)



[3-17]

가
 , , , , , , , , , , ,
 , , (,) , , ,
 , , ,) 가 (,) 가
 , 가 , 가 , 가
 가
 ,
 가
 , 4 가



[3-18]

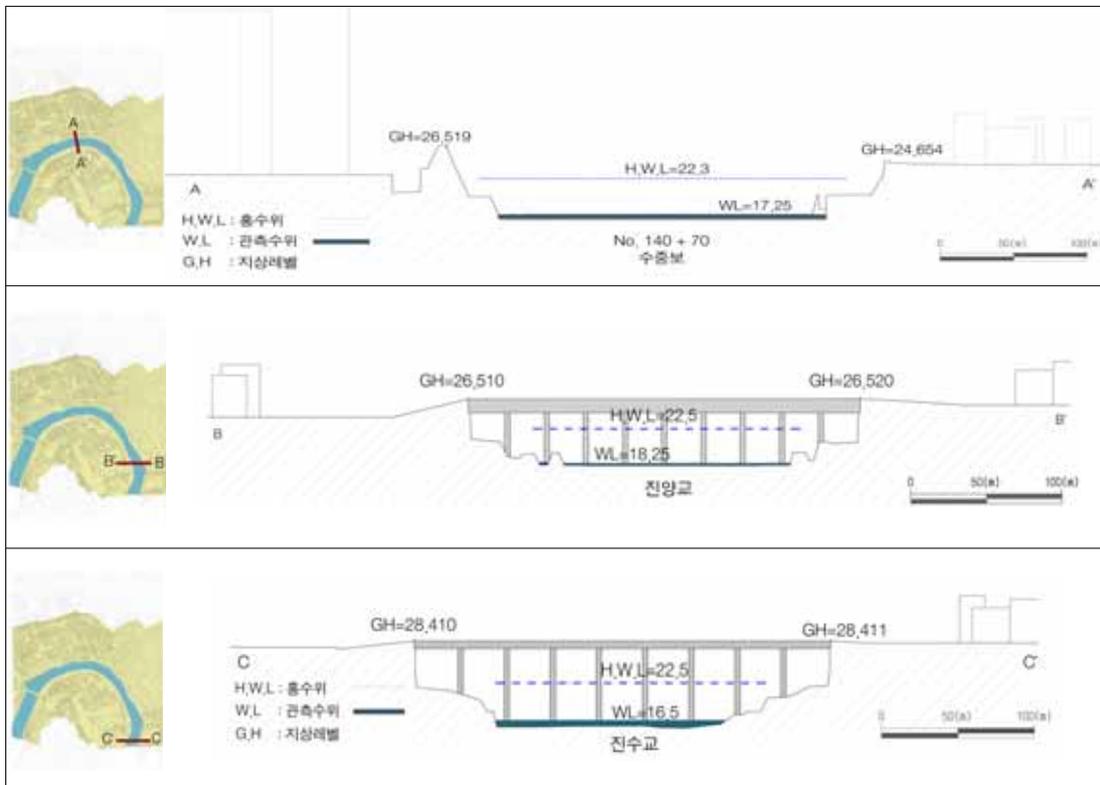
1 27.3%, 2 59.7%, 3 13%

1 2~3 2~3

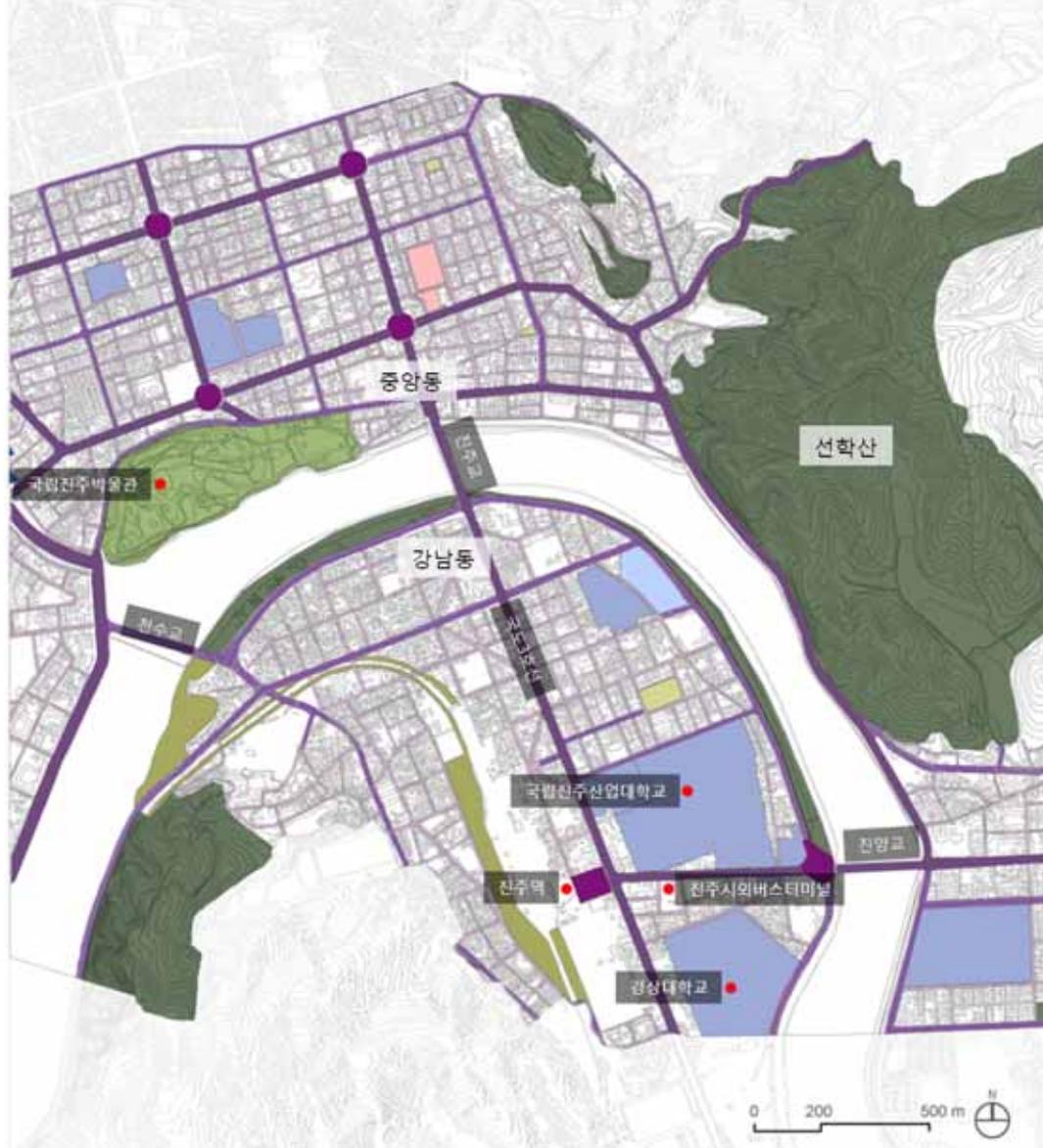
123m

[3-23]

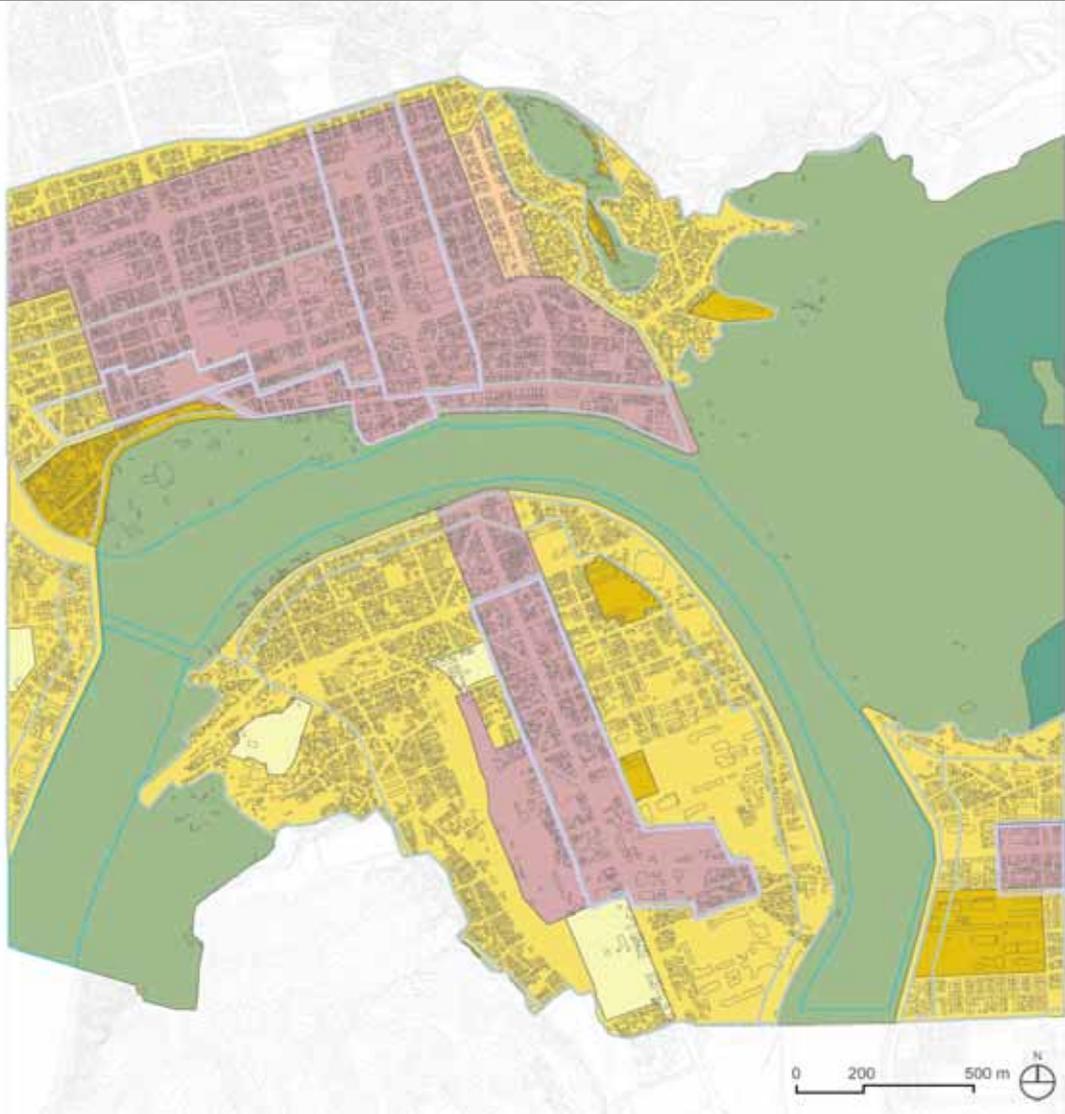
	1	2	3	
(m ²)	32.4	70.9	15.4	118.7
(%)	27.3	59.7	13.0	100



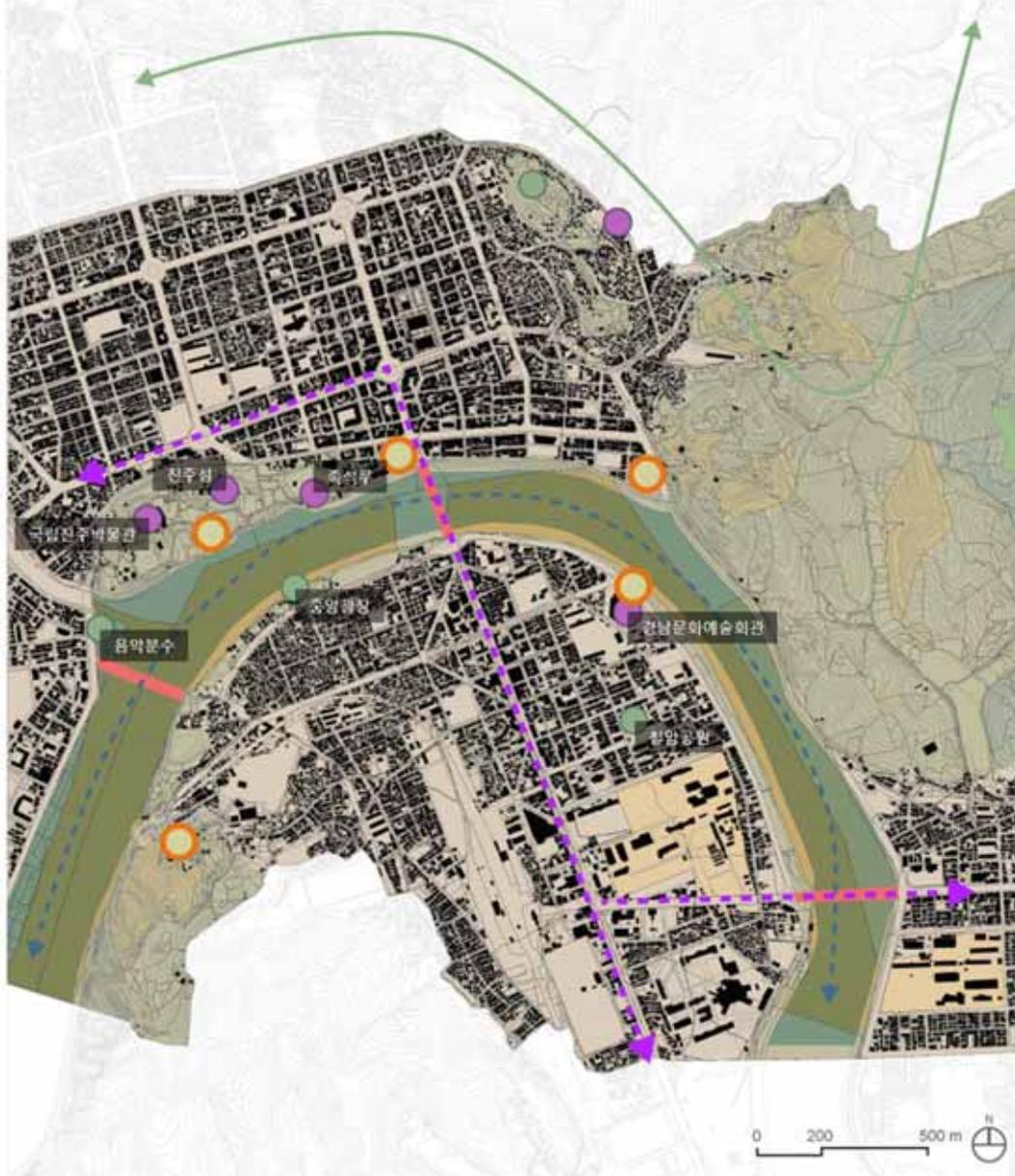
[3-19]



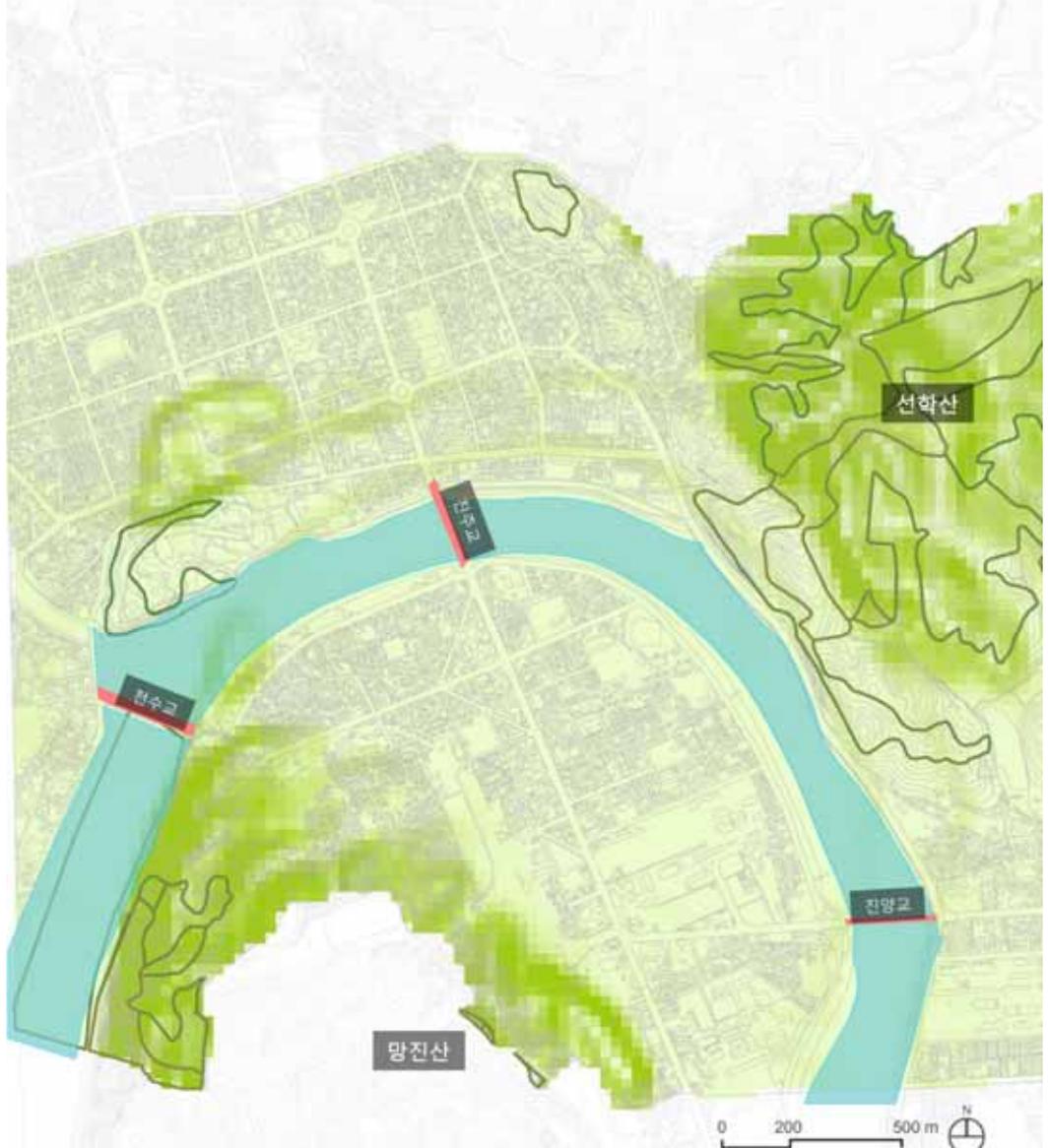
	가				
	• 3		가		
	• 3		가		
	•				



	1 2 3 	 	 	
	<ul style="list-style-type: none"> • 35.7%, • 1 • 가 , 	<ul style="list-style-type: none"> • 21.9%, • 1 • 가 , 	<ul style="list-style-type: none"> • 42.4% • , • 가 , 	



		(m ²)	
		0-5	15-20
		5-10	20-25
		10-15	25
	• • •		5~10 m ²



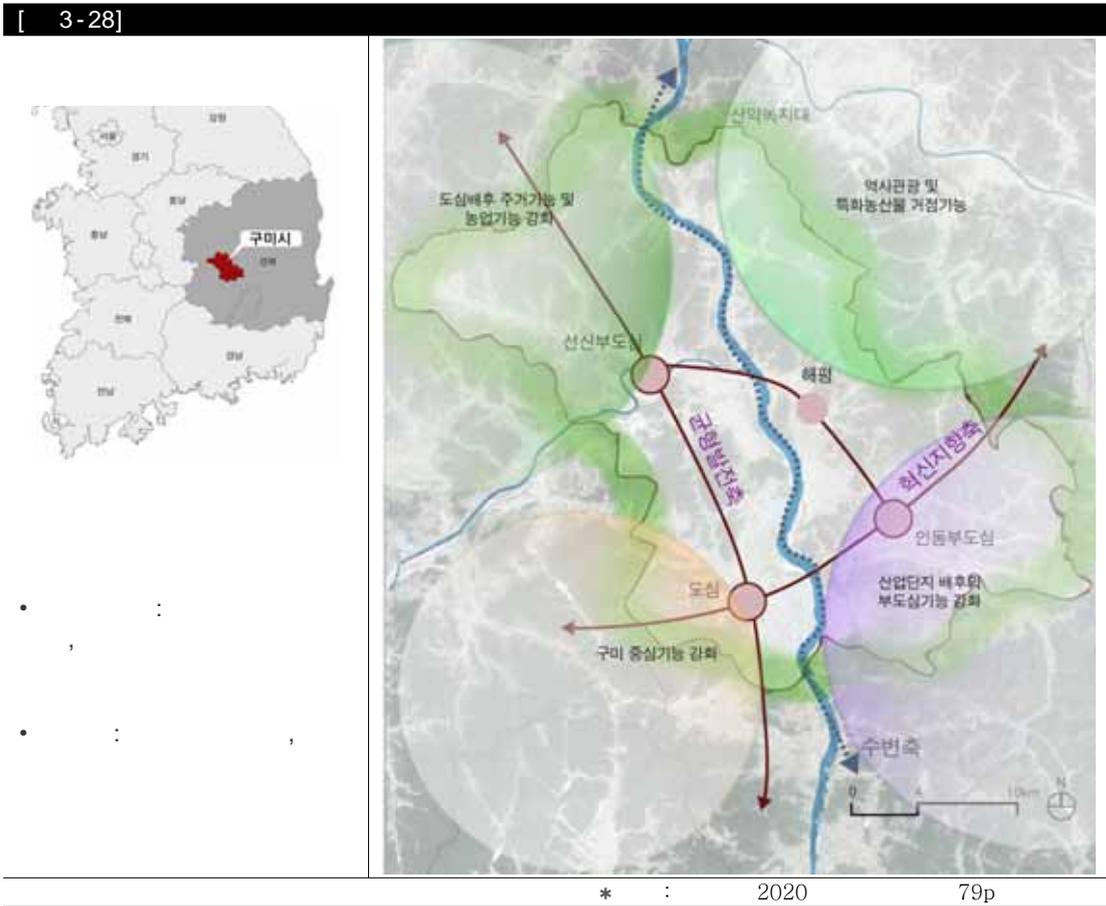
						/
	 122.5M 0.0M	2 3			 	
	<ul style="list-style-type: none"> • • • 2~3	1 27.3%, 2 59.7%, 3 13% 1 2~3 ,				123m

3) :

43)

가

44)



43)	39 (2009)	1994 ~ 2003	2.6%
가	269.6km ² (43.75%),	616.25km ²	196.43km ² (31.38%),
가		8.77km ² (1.42%)	141.45km ² (22.95%),
44)	(2007), 「2020	」	

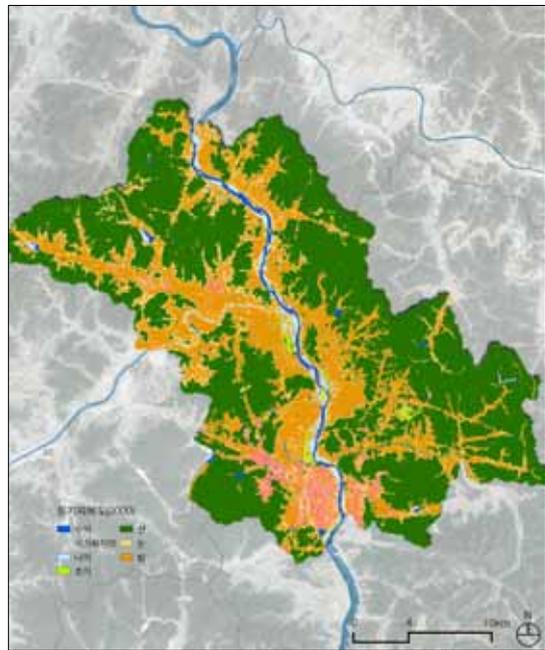
가 , 가 (23.6%), (11.3%), 가 , 58.8% 가 , 가 가 가 가

[3-29]

		가						
(m ²)	977	1,697	987	-	246	36,192	6,957	14,501
(%)	1.6	2.8	1.6	-	0.4	58.8	11.3	23.6

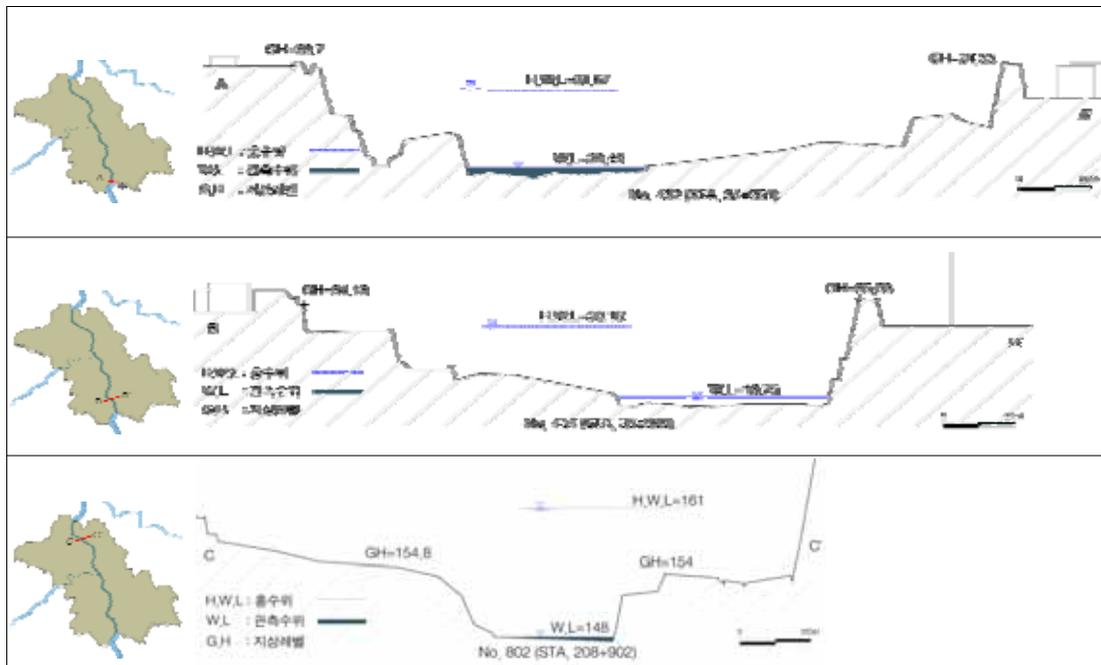


[3-20]



[3-21]

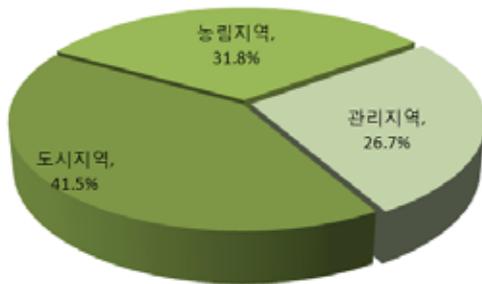
가 , , 가
 2 , 16 , 178 196
 424.21km
 가 가
 가 , 가
 10m 가 , 가 가



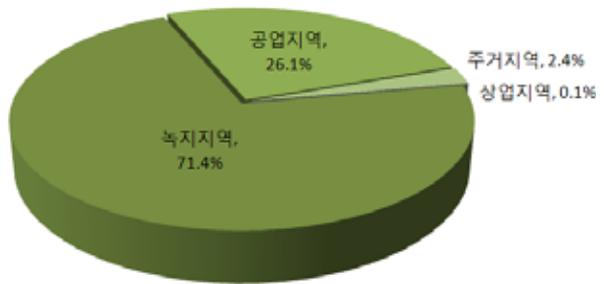
[3-22]

(1km)

41.5%(57.6km²), 26.7%(37.1km²), 31.8%(44.1km²),
 2.4%(0.7km²), 0.1%(0.03km²),
 26.1%(7.5km²), 71.4%(20.6km²), 가



[3-23]



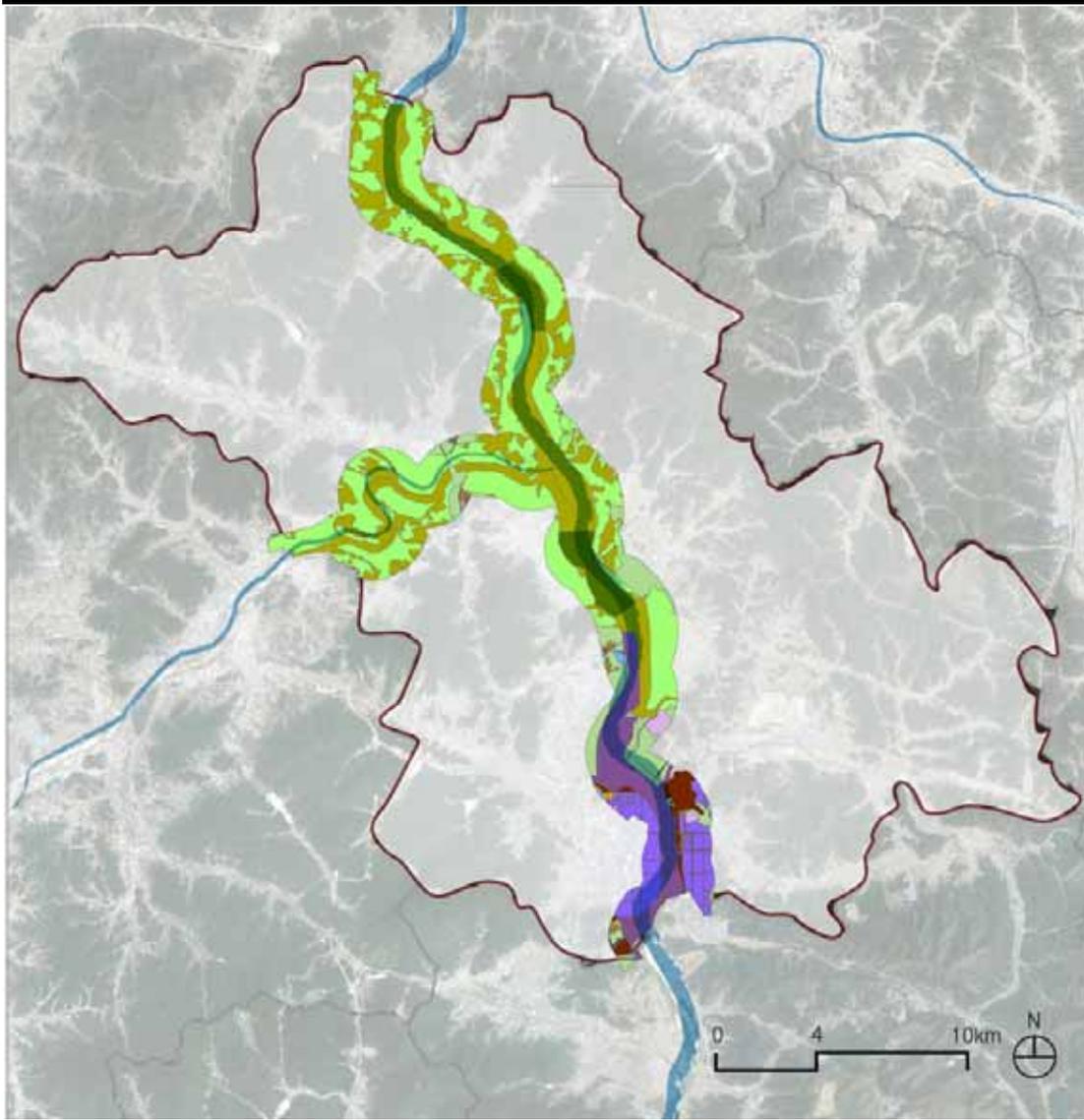
[3-24]

36 , 6 , 6 가 129 , 가 가

[3-30] 1km

	129	36	8	6	6	-	2
(m ²)	1,543,952	2,378,071	199,027	707,834	8,992,539	-	85,116

[3-31]



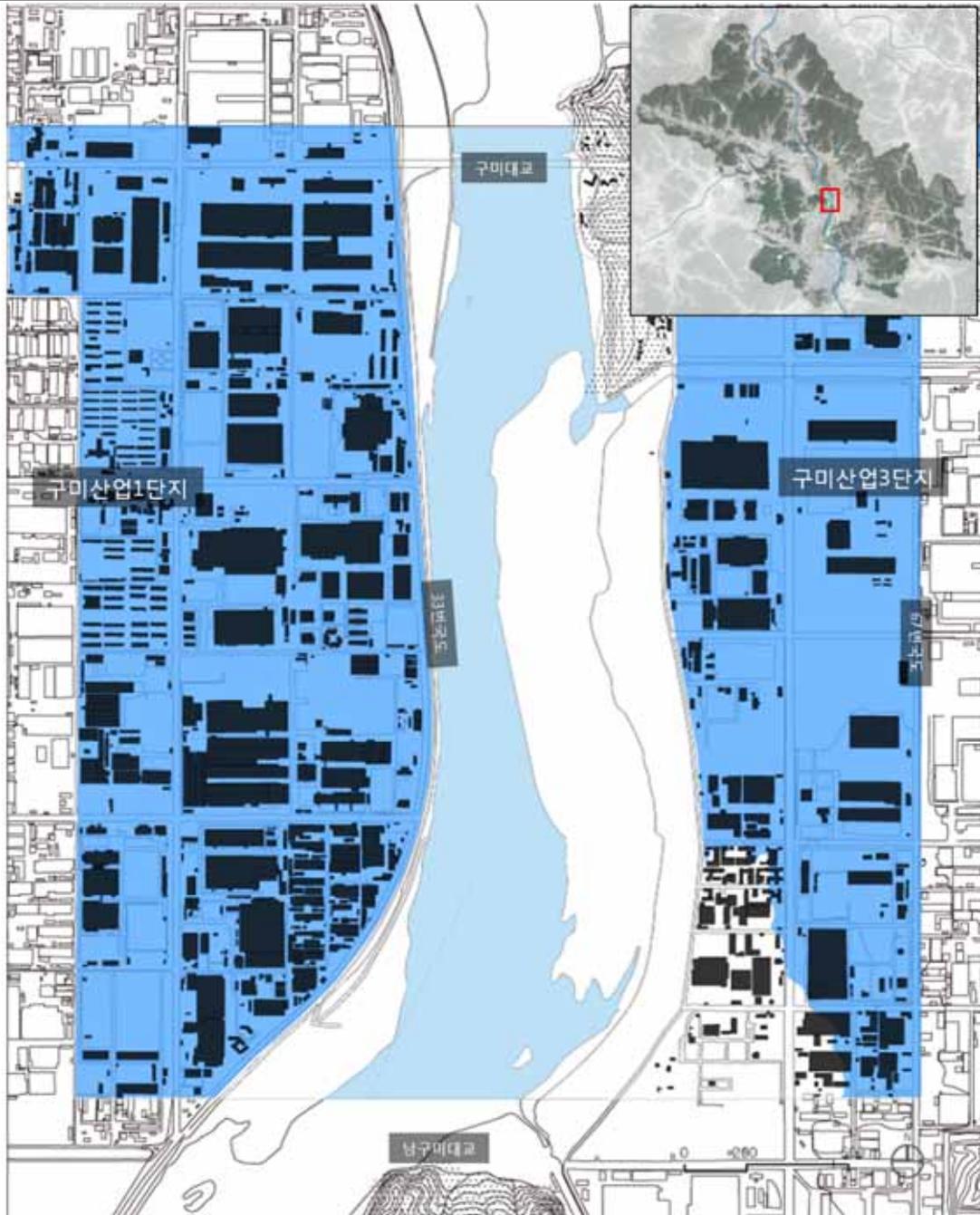
				
				
				
				
	• 41.5%,	• 26.7%,	• 31.8%	
	• 가			

가 가 , 가
 가 가 .
 , 가 (1,3
) 가 , 33 67
 가 .



가

[3-25]



- 가
- 1 3 가 가 가
-

가
 가 1 3 20m 514
 가 ,
 514 33 가 , 67
 20m

가
 ,
 (4), (9), (2)
 , (1), (1), (1)

[3-33]

	4	9	2	1	1	1
(m ²)	7698.4	26448.9	303839.6	7515.3	39889.9	15258.5

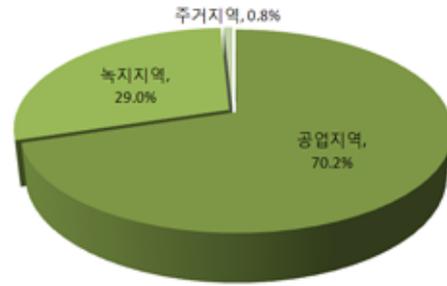
가
 10 m² (54.2%) , 50
 m²(9.1%)

[3-34]

(m ²)	(m ²)	(%)
0~10	386.3	54.2
10 ~20	155.4	21.8
20 ~30	73.1	10.2
30~40	33.8	4.7
40 ~50	-	-
50	64.8	9.1
	662.7	100.0

0.8%(0.058km²),
29.0%(2.1km²)

70.2%(5.1km²),



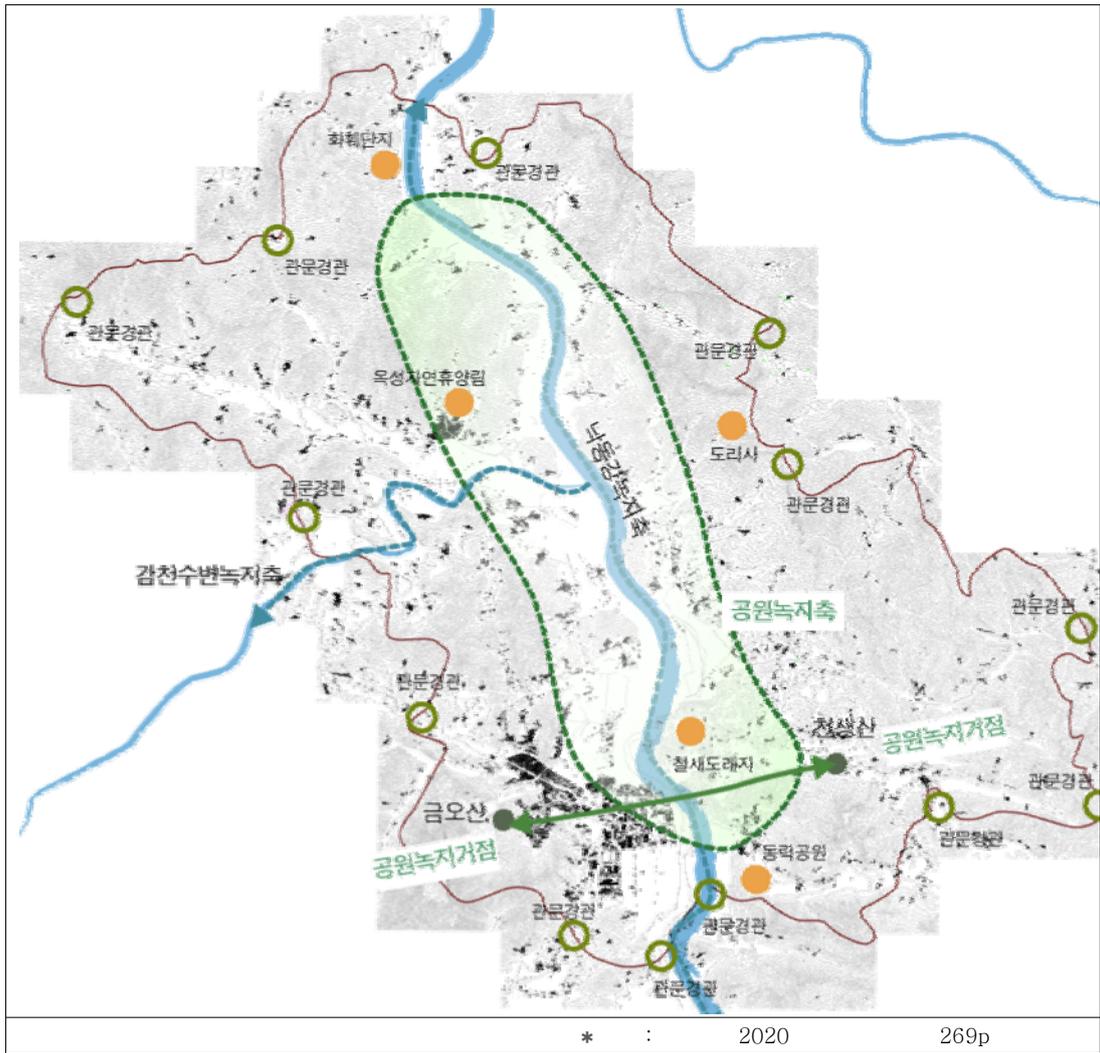
[3-26]

[3-35]

	(km ²)	(%)
	0.058	0.8
	-	-
	5.1	70.2
	2.1	29.0

300m

가

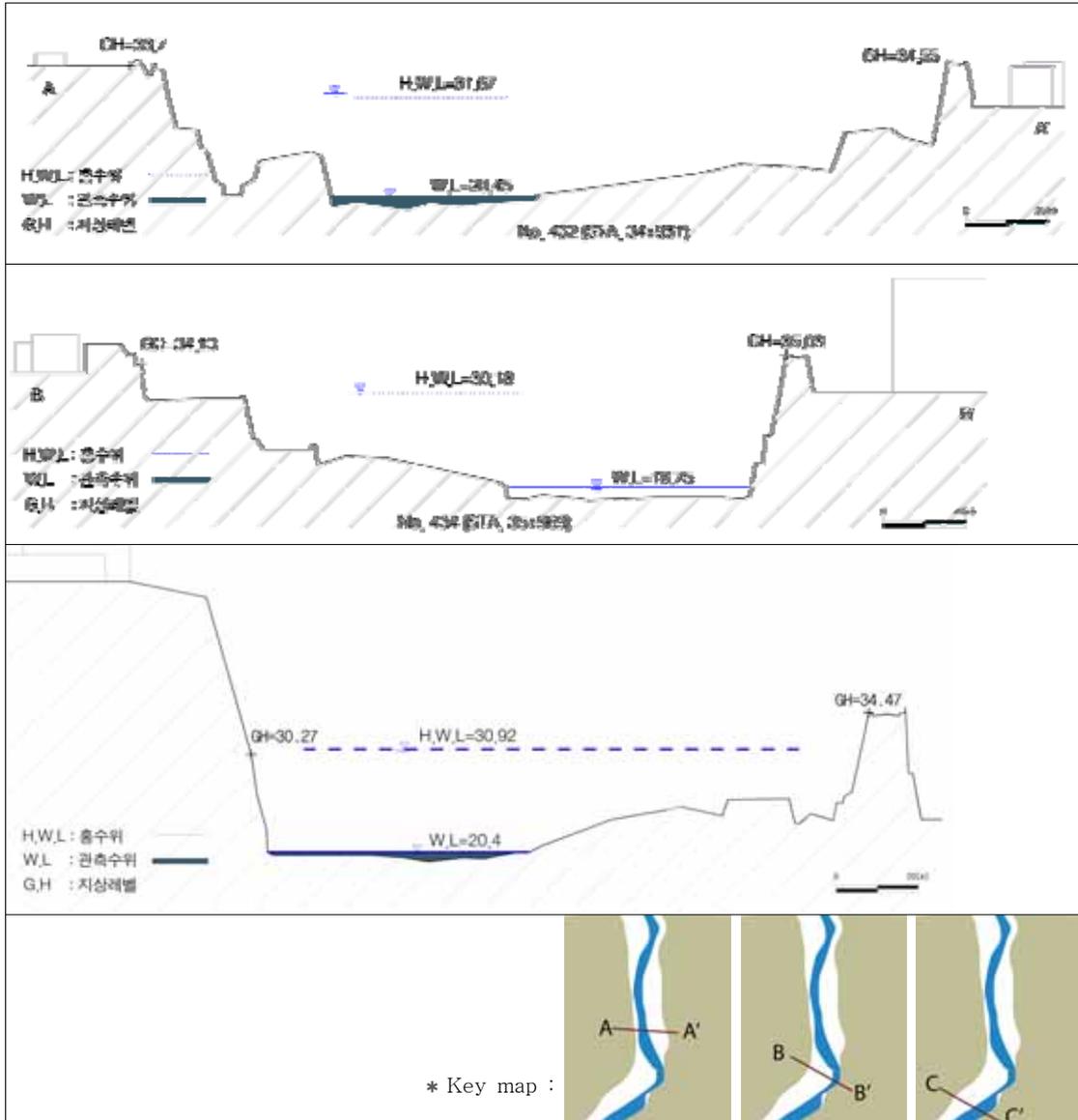


[3-27]

100%
37.7m

[3-36]

	1	2	3	
(m ²)	-	251	-	251
(%)	-	100	-	100



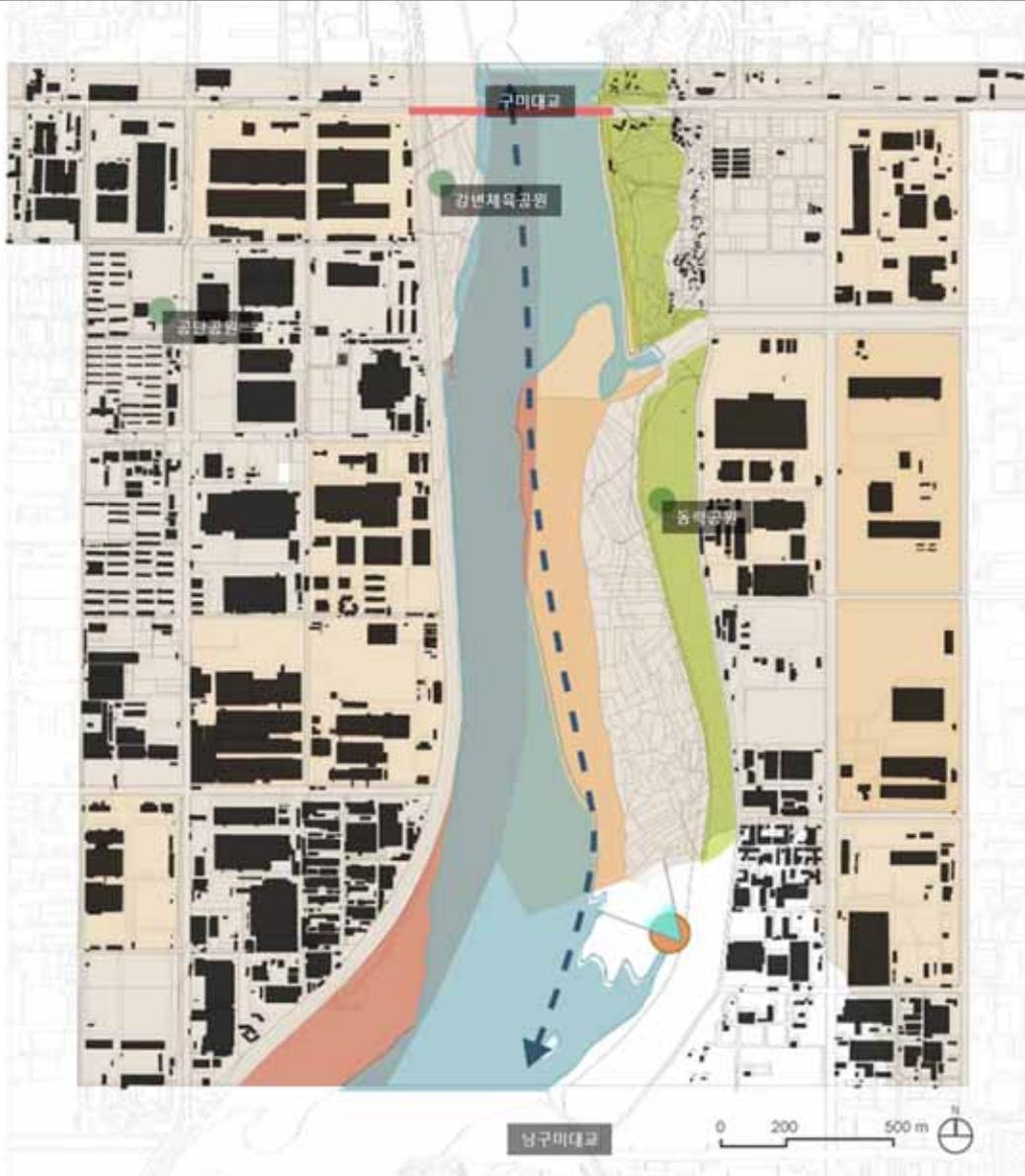
[3-28]



가	
<ul style="list-style-type: none"> ■ ■ ■ 	<ul style="list-style-type: none"> ■ ■ ■
<ul style="list-style-type: none"> • 1 • 	<ul style="list-style-type: none"> 3 , , ,
	<ul style="list-style-type: none"> 20m 514 가



	<table border="0"> <tr> <td></td> <td>1</td> <td></td> <td></td> </tr> <tr> <td></td> <td>2</td> <td></td> <td></td> </tr> <tr> <td></td> <td>3</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>		1				2				3						
	1																
	2																
	3																
																	
•	70.2%,	0.8%,	29%														
•																	



		(m ²)	
			0-5
			5-10
			10-15
			15-20
			20-25
			25
<ul style="list-style-type: none"> • • 			10 m ²



			/
 37.7M 0.0M	 2  3		
<ul style="list-style-type: none"> • • 	$37.7m^2$	가	,

4) :

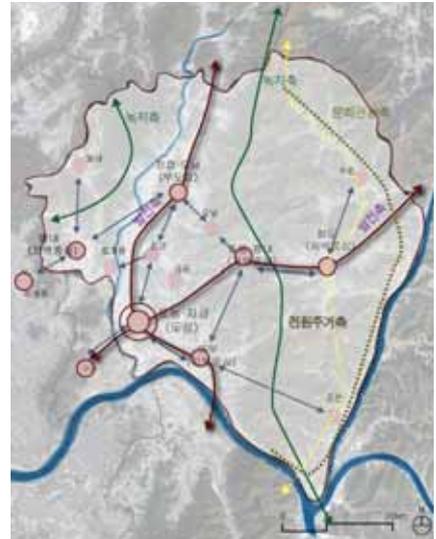
45)

가 ,
가 .

1km 11.0km, 18.2km(2.5km)

, , ,
, .
(,)
, 1 1 , ,

[3-41]



- :
- :
- 1 -1 -4 -6

* : 2020 95p

45) 51 (2008) 2000 33.8% 가 가 2008 2.7%
, 458 km² 50.5% , 84.6%
, 42.7% 가 .

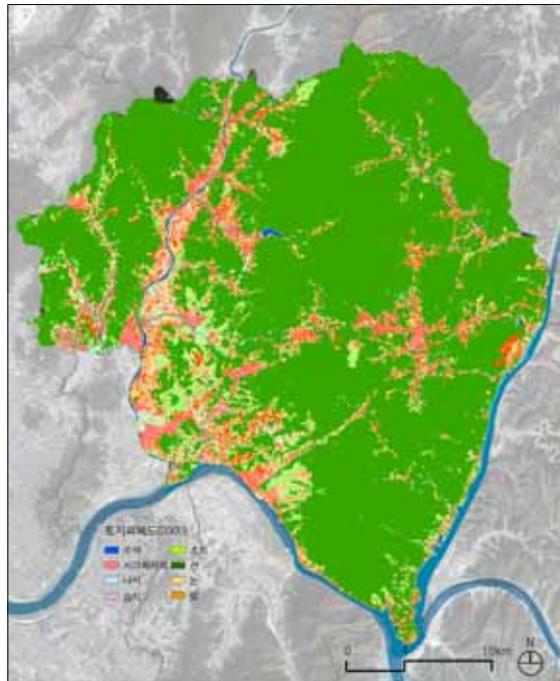
가 , , 가 , , 가 (5.2%), (4.8%), 73.1% 가 (9.2%), 가 , 가 .

[3-42]

	가							
(m ²)	904	2,390	464	22	2,130	33,470	4,225	2,192
(%)	2.0	5.2	1.0	0.05	4.7	73.1	9.2	4.8



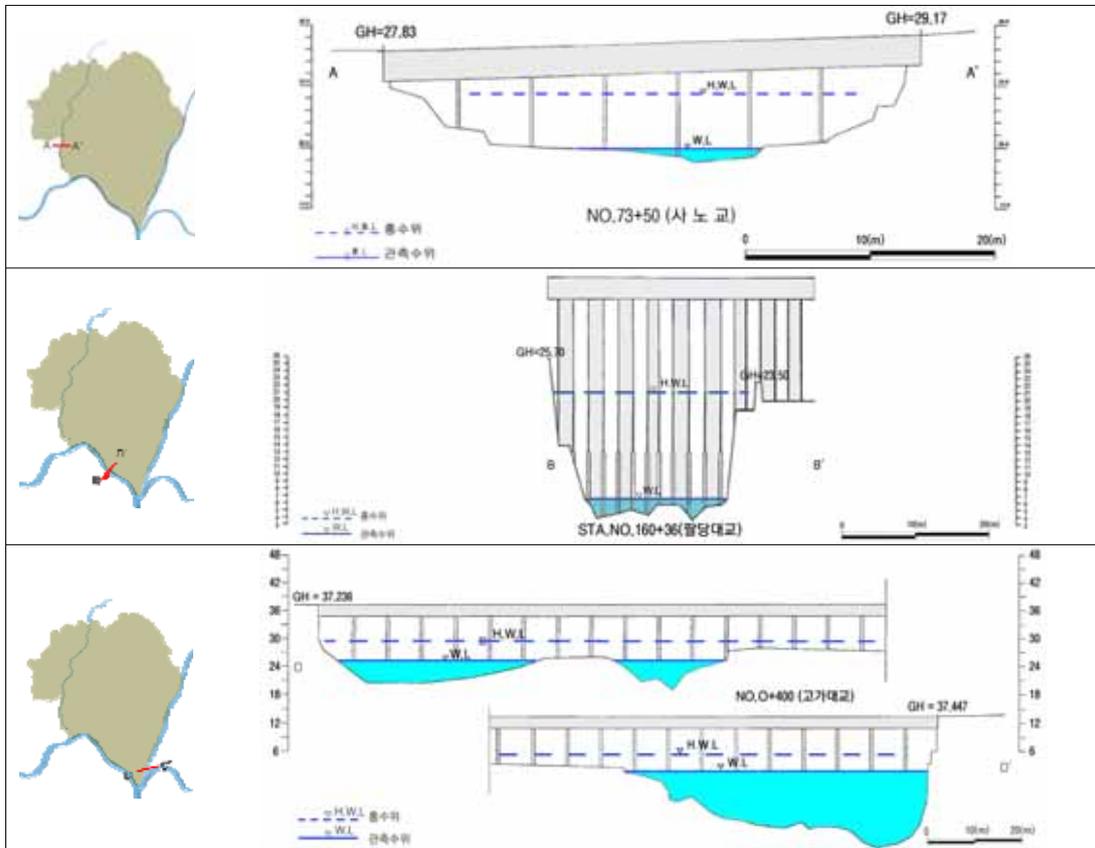
[3-29]



[3-30]

가 2 , 2 32 , 93 127
316.69km

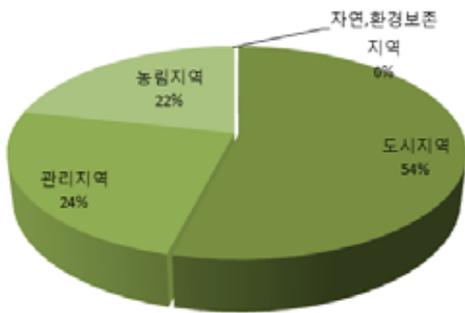
가 가
가 가



[3-31]

(1km)

54.0%(64.19km²), 24.4%(28.99km²), 21.6%(25.61km²)
 8.3%(5.23km²), 0.2%(0.14km²),
 0.1%(0.12km²), 91.3%(57.83km²)
 30%가



[3-32]

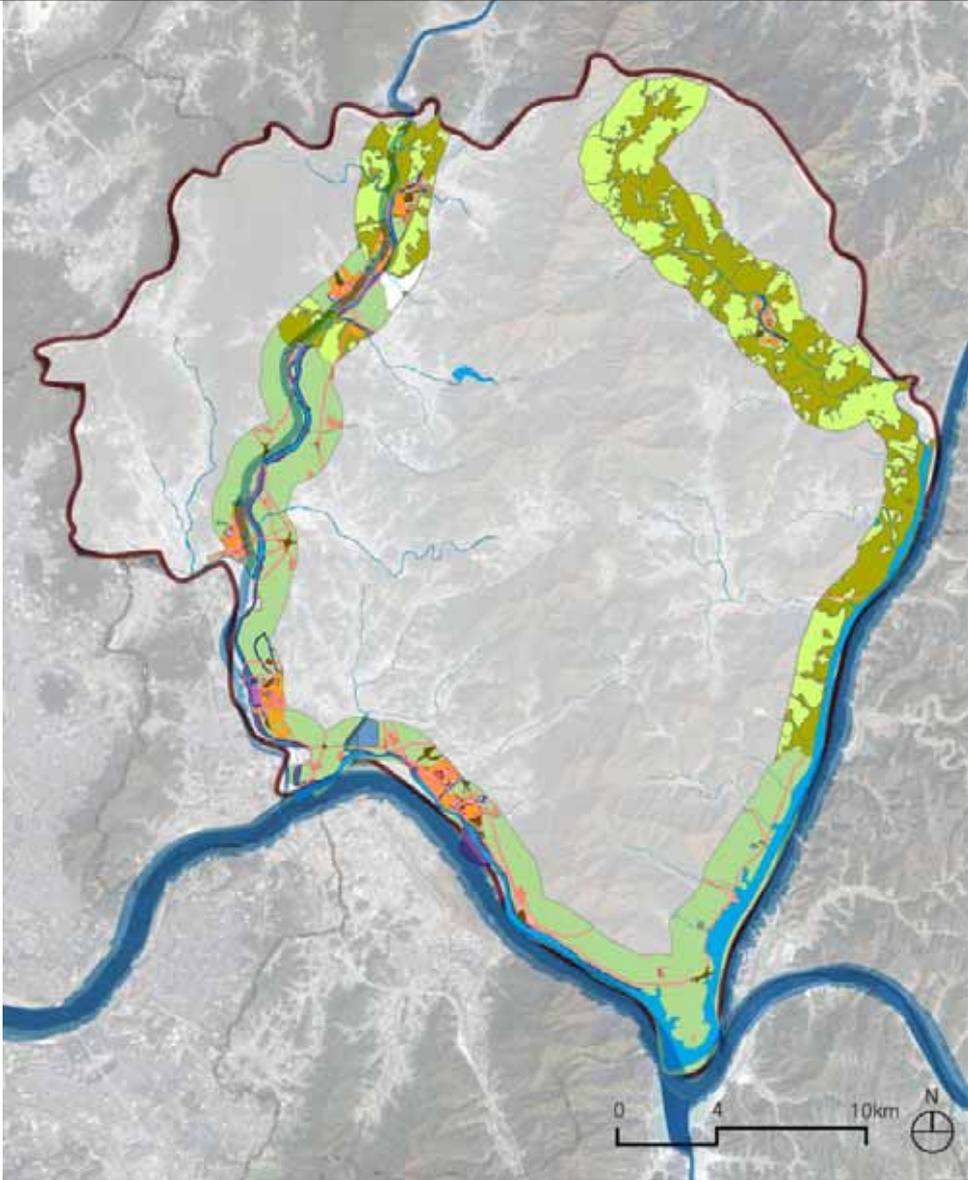


[3-33]

115 , 15 , 1 , 40
 , 4 가

[3-43] 1km

	115	15	40	20	1	4
m ²	957,236	623,353	526,411	6,082,818	5,061	79,865

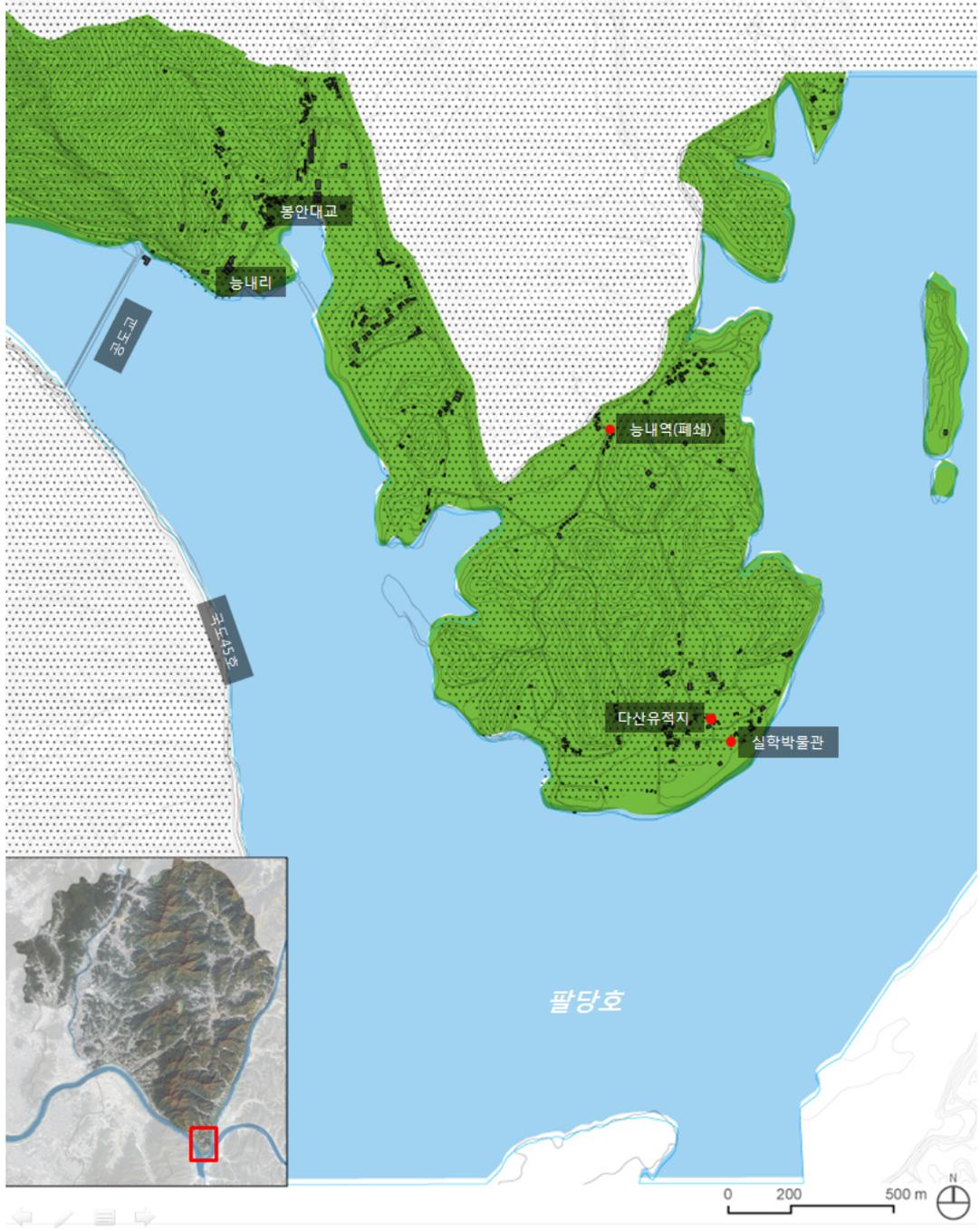


	•	54.0%,	24.4%,	21.6%

가 , 1973 가 [兩水里] 가
 가 (),



[3-34]



• , , () , 가

• 가

35m ()가
5m

2008

•

()가 6 45 ()
IC

[3-46]

	1	9
(m ²)	23,515	486,996

•

0~5 m²가 78.5% 가 , 20~25 m²
14.7%

[3-47]

	(m ²)	(%)
0~5	2,524.7	78.5
5 ~10	54.7	1.7
10 ~15	-	-
15 ~20	159.2	4.9
20 ~25	475.4	14.7
	3,213.9	100.0

(100%)

가

가

[3-48]

	(km)
	-
	-
	-
	5.2



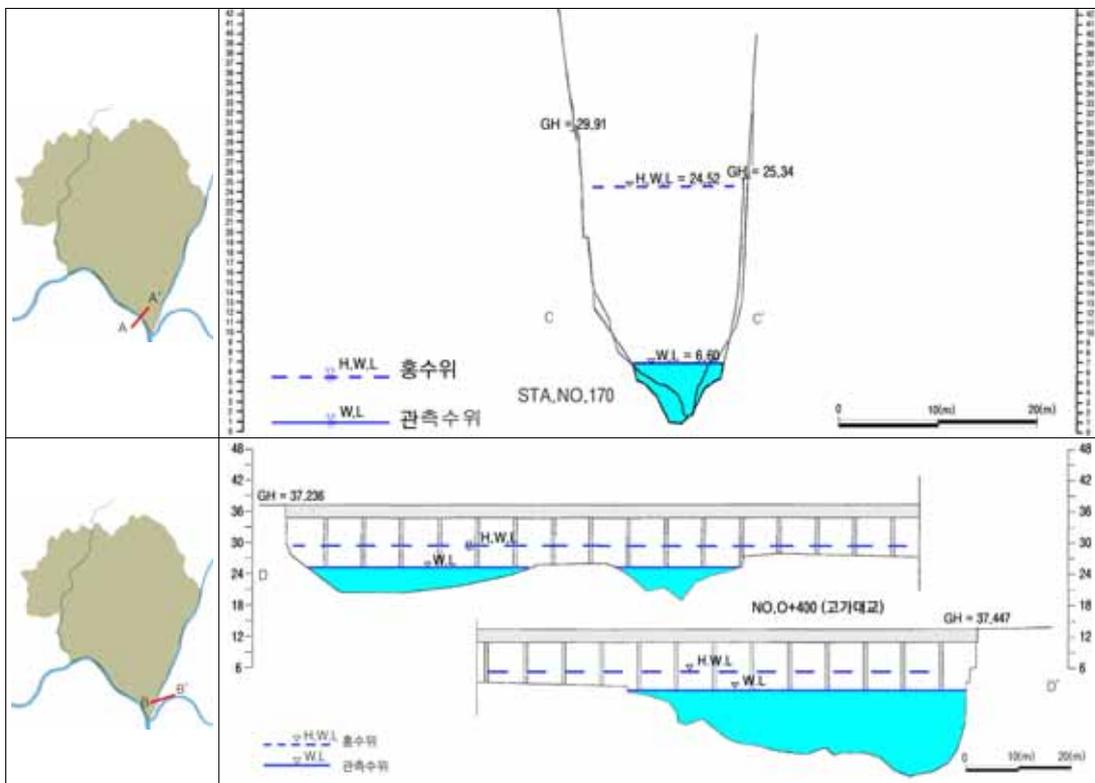
[3-35]

3 3.1% 1 2.4%, 가
320m 가
80m

6

[3-49]

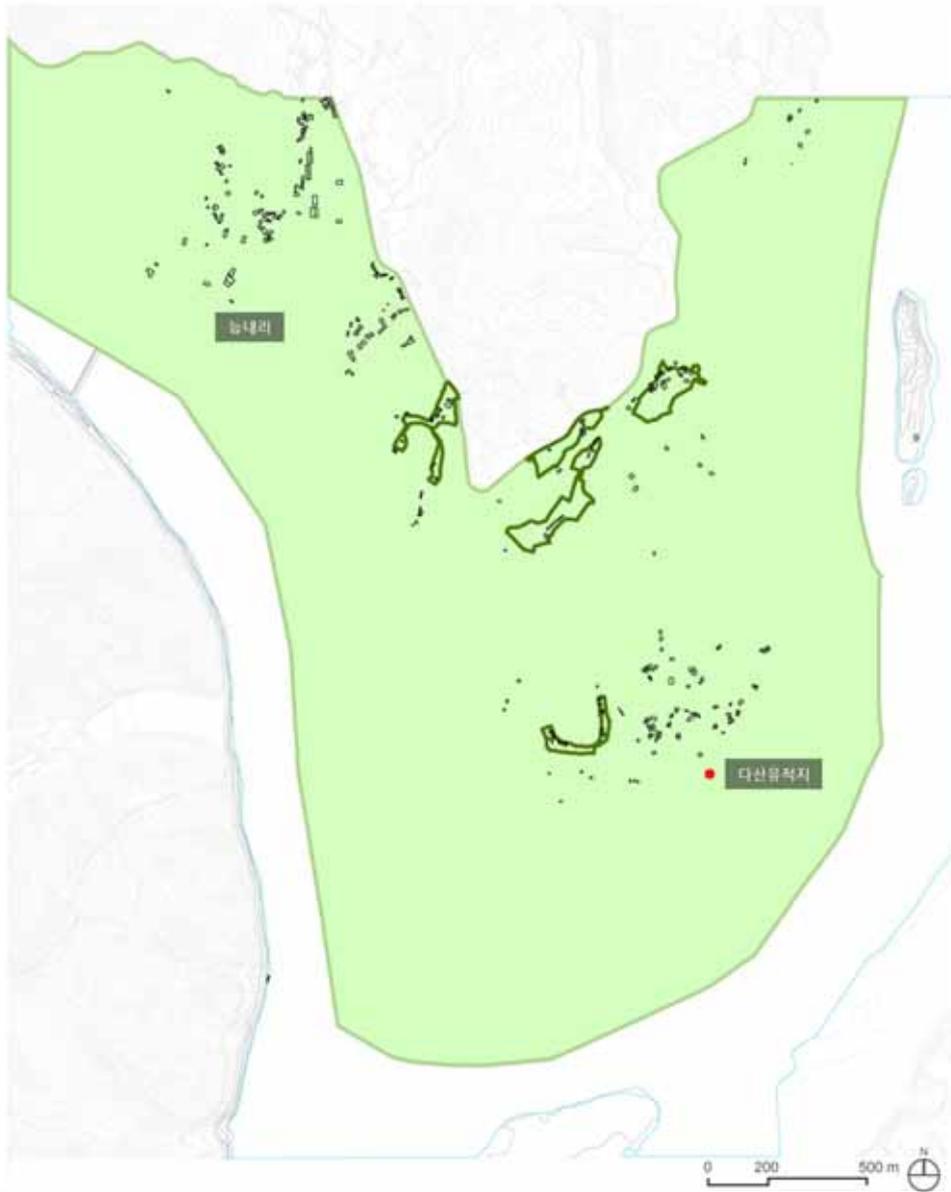
	1	2	3	
(m ³)	148.3	5,824.9	189.1	6,162.3
(%)	2.4	94.5	3.1	100.0



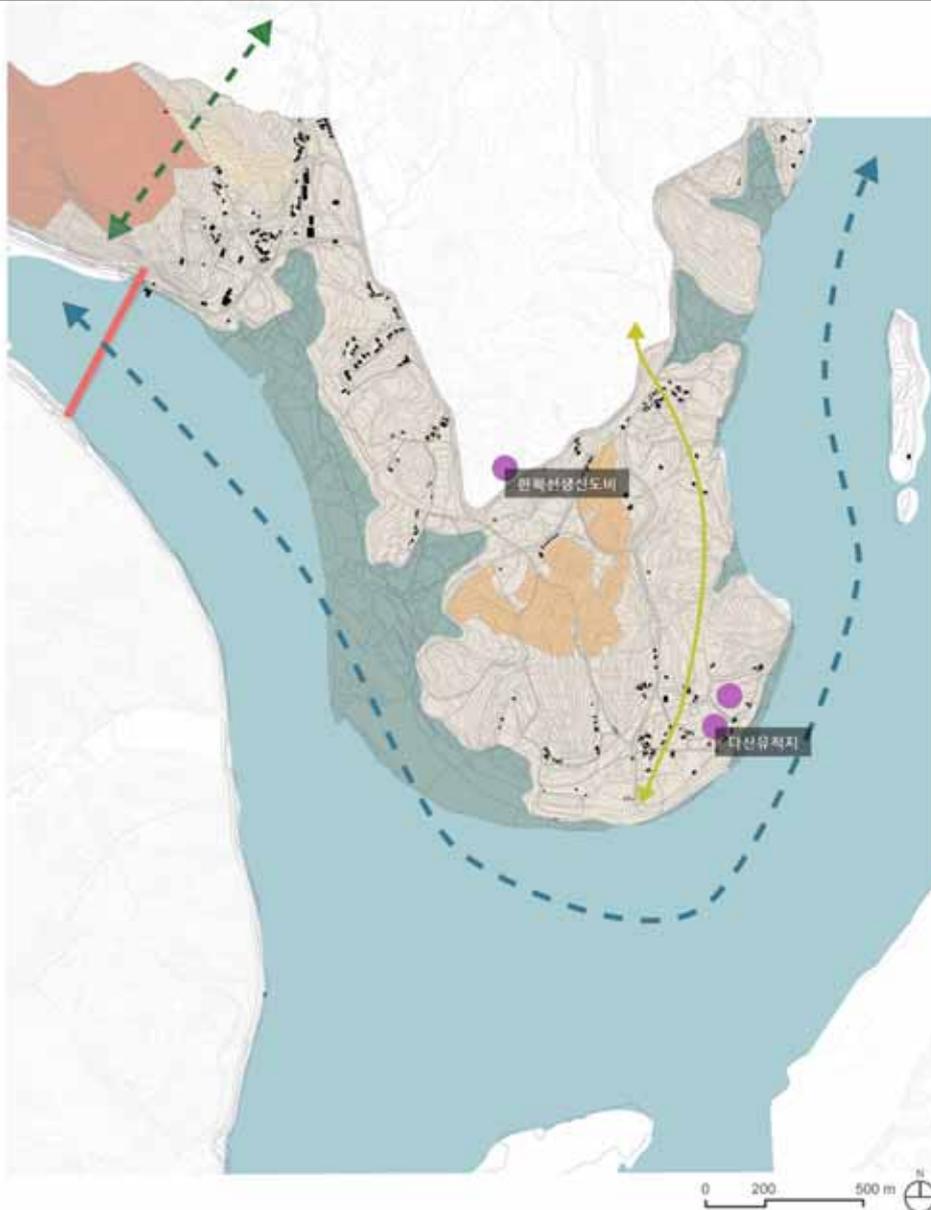
[3-36]



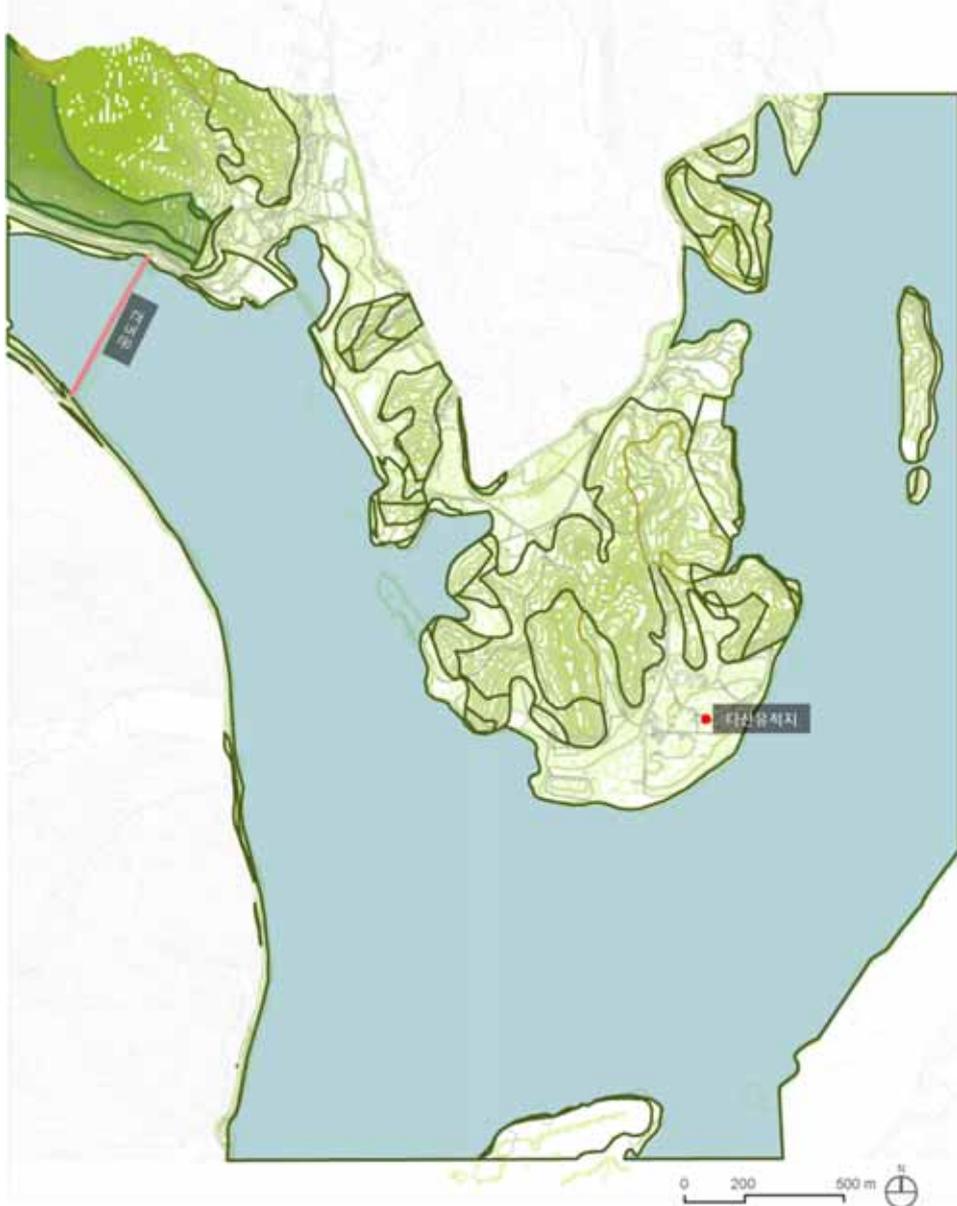
가	
<ul style="list-style-type: none"> • 35m ()가 • 5m • IC 	



	
	<ul style="list-style-type: none"> • • <p style="text-align: center;">가</p>



		(m ²)	
			0 - 5
			15 - 20
			5 - 10
			20 - 25
			10 - 15
			25
<ul style="list-style-type: none"> • • 			



			/
	320M 0M		
•	320m	가	,
•	80m 2		

3. 가

1)

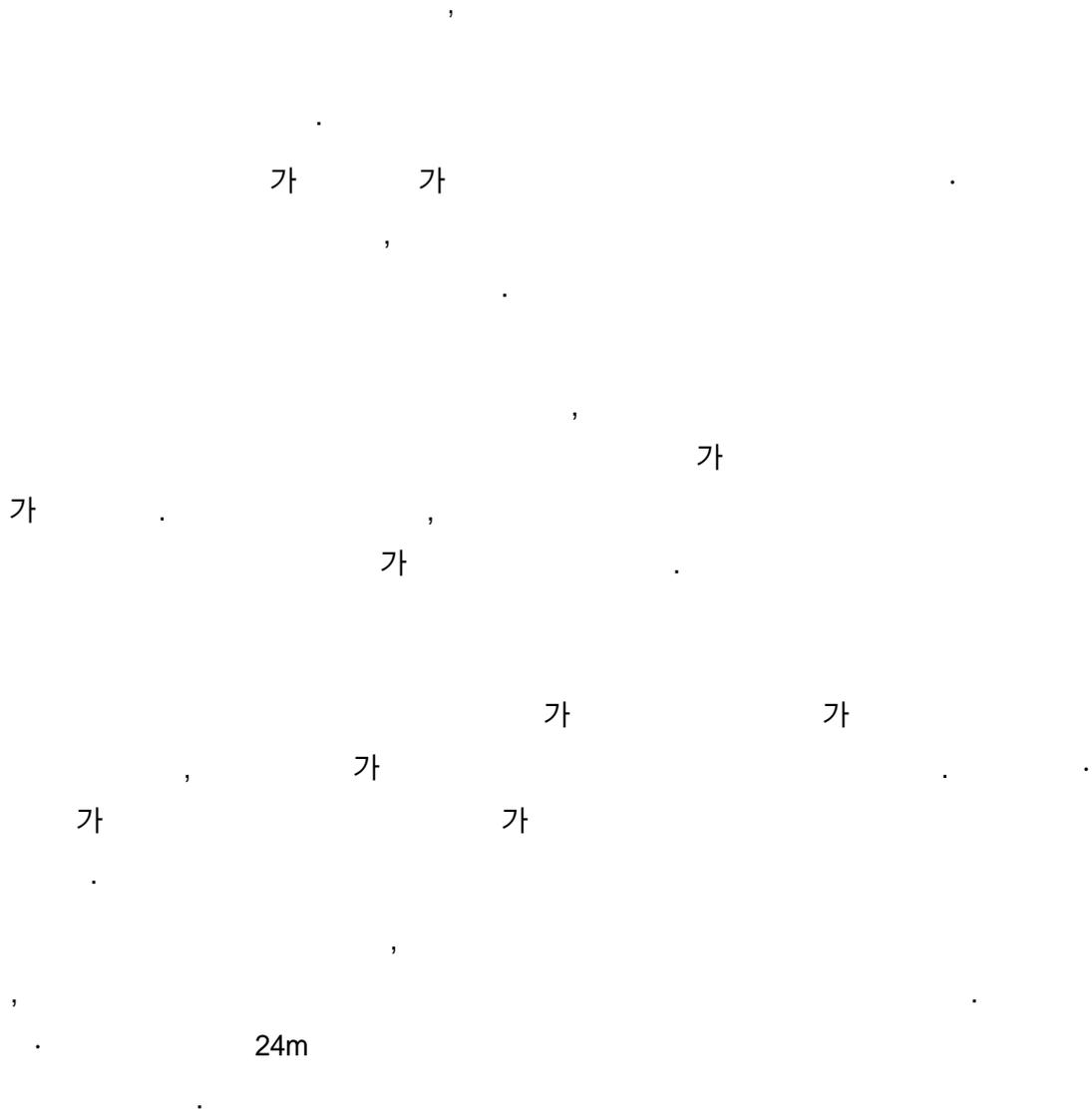
, ,
 ,
 . ,
 ,
 (52.8%),

, ,
 ,
 가 (2)
 , 가 가
 .
 가
 , 가 .

[3-54] (,)

		가
	• , •	• 가
	• ,	•
	• , •	-

2)



[3-55] ()

		가
	•	• .
	• , ,	-
	•	•

3)

가

가
20~30 m²

가

4

[3-56] ()

		가
	• , •	-
	•	-
	• , ,	•

4)

,

,

가

가

2 가 가

가

,

,

,

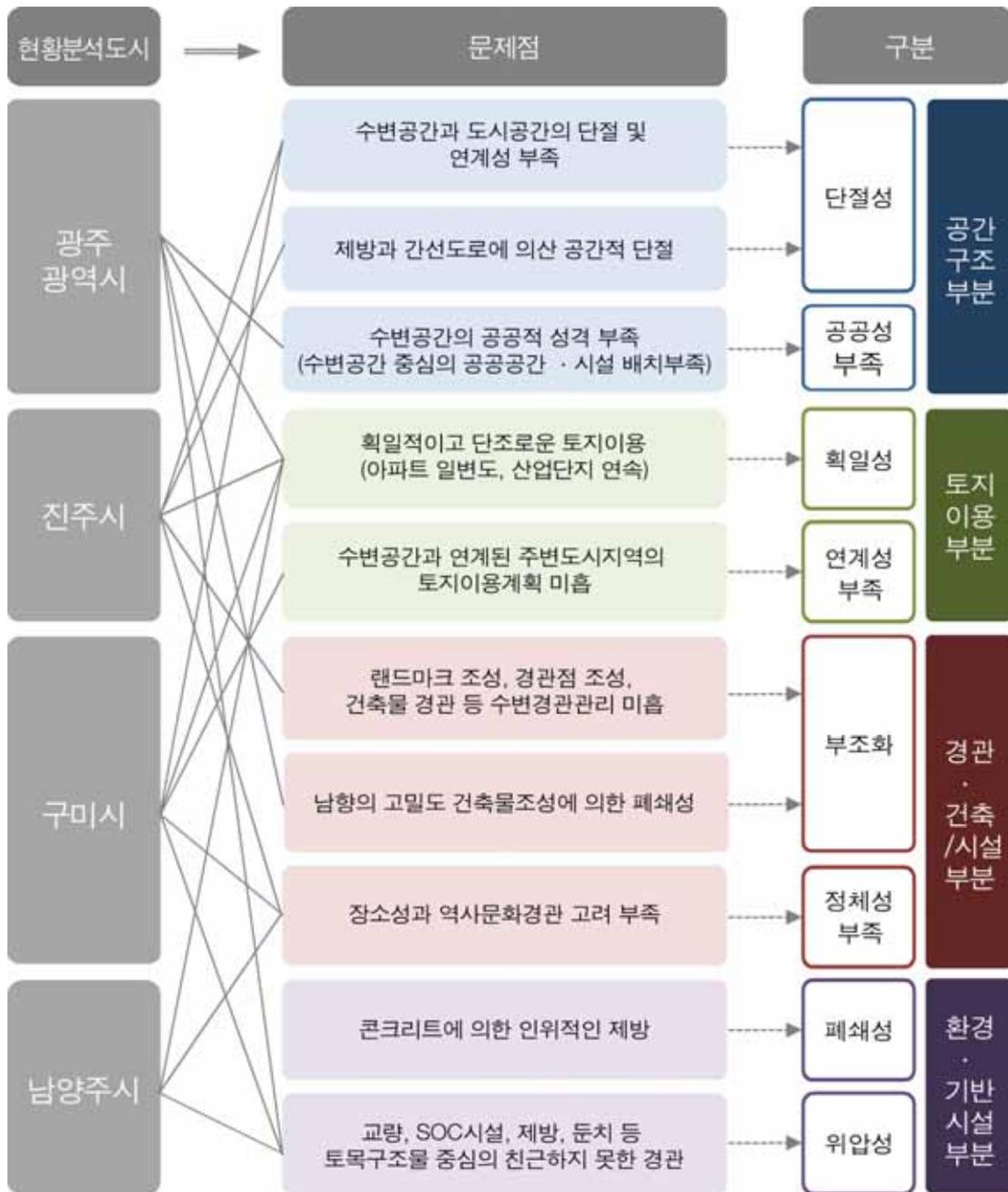
가

가

[3-57] ()

		가
	• , ,	• 가
/	-	• 가 , ,
	•	-

(, , / ,)



[3-37]

4

- 1.
- 2.
- 3.

1.

1)

가

, 46) 가 ,

가 ,

, . . 가

, , ,

46) Ann Breen Dick Rigby 「The New Waterfront : A Worldwide Urban Success Story」 (1997)

The Commercial Waterfront,
 The Cultural, Educational and Environmental Waterfront,
 The Historic Waterfront, The Recreational Waterfront, The
 Residential Waterfront, The Working Waterfront and Transportation

8 . , 가

가

8

, 8

가,

, / /

2)

[4-1]

		/				
1.	1)	/	○	○	○	○
	2) /	/ 21	○	-	○	○
	3)	/	○	○	○	○
2.	4)	가 / 가 가	○	○	○	-
	5)	/	○	○	○	-
3.	6)	/	○	○	○	-
4. 가	7)	/	○	○	-	○
	8) , 가	/	○	○	○	○

2.

1)

(Hammarby Sjöstad)⁴⁷⁾

1

가 , 48)

1990

49)

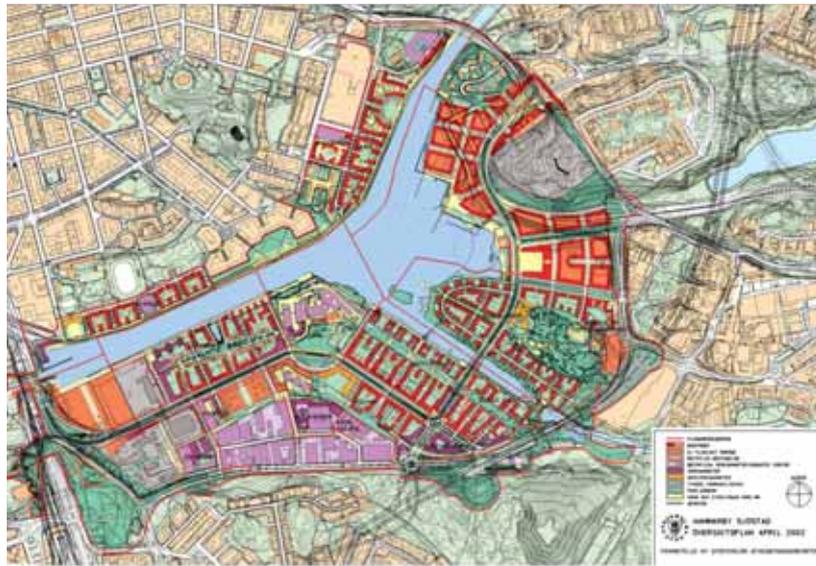
2015

1990

50%

12

가



[4-1]

(Hammarby Sjostad Masterplan)

(:)

(<http://hammarbysjostad.se>)

47) 1991

Hammarby Sjostad()

48) , , “ : ”, 237 ,
2009. 7. 27,

49) 1,080,000m2,

8,000 ,

17,500

1992-2010

가
11,000

가 , 35,000

2018 25,000



[4-2]

(Hammarby Sjöstad)

가



[4-3]
(:
(<http://hammarbysjostad.se>)

[4-4]
(:
(<http://maps.google.com>)



[4-5]
(:
(<http://www.hammarbysjostad.se>))

• '단'

'단'



[4-6]
(: (http://maps.google.com))

• Sickla
Hammarby
eden, Hammarby
lake, Danviks
-kanalen
가 , Sicka



[4-7]
(: (http://www.hammarbysjostad.se))
Hammarbyleden,

Hammarby lake, Danvikskanalen

Sickla

Sickla

가



[4-8]
(: (http://maps.google.com))

[4-9]
(: Petter Eklund och Katarina Juvander, Sjostaden: Hammarby Sjostad, Dymlings, 2005)



[4-10]
(: Sjostaden: Hammarby Sjostad)

[4-11]
(:)

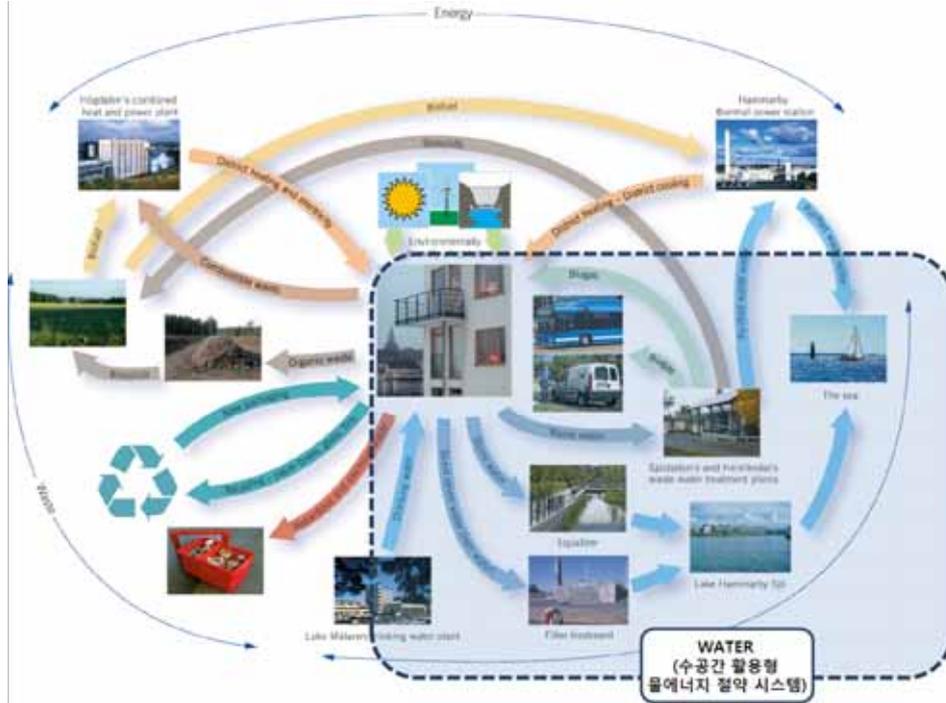
(The Hammarby Model)

(The Hammarby Model)

, 가

[4-2] - (Hammarby Model)

<ul style="list-style-type: none"> •가 • • • • • • 	<ul style="list-style-type: none"> • • 가 • 가 • • • • Sjo • Hammarby Sjo 	<ul style="list-style-type: none"> • • • •가 • , , 가 •
--	---	---



(: (http://www.hammarbysjostad.se))

2) / : 21

21

(隅田川)

가

21

.50)

.51)



[4-12]

21

[4-13]

21

((:

(: Michikusa Gakkai)

(<http://www.mlit.go.jp/>)

50)

1853 ,

(藩)

가

가

, 1939

가 , 1979

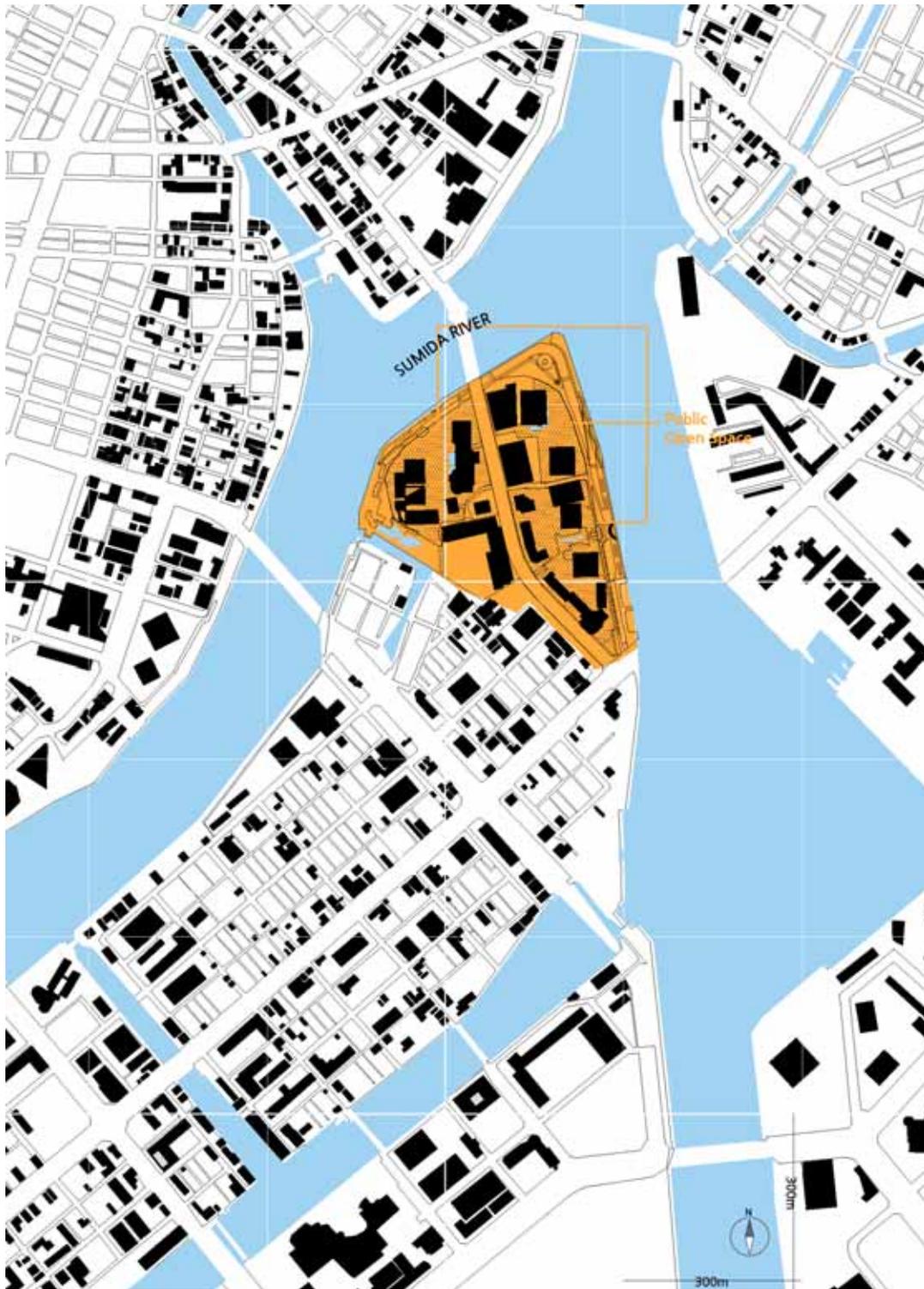
51)

21

(IHI)

8

54



[4-14]

21

21 () 가,
 , 가,
 가 .
 가 .
 가 가
 가
 . 가



[4-15] 21
 (:)



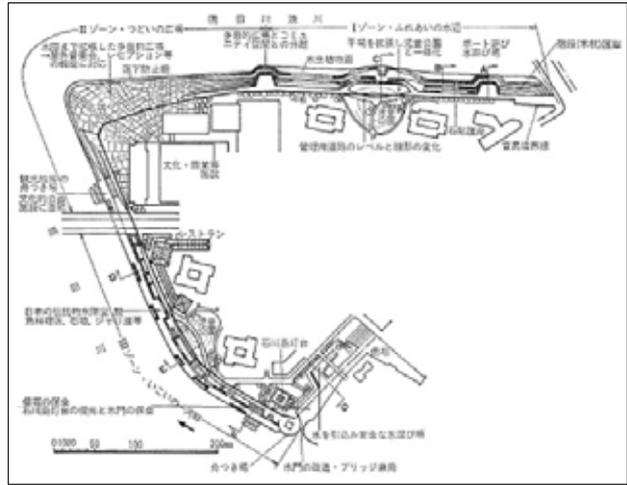
[4-16] 21
 (:)

[4-3] 21

/			
/			

52) 21 (), (), ()가 , 가 (), () , (,) .

3 2 53)
가 1 가, 2 54)



[4-17]
(:Toshitsugu Masai, Tomokazu Yamazaki, :
「土木技術41(8)」, 1999)

가



[4-18]



- /



[4-19]
- / 가

53) 가

54) (河積) 가

() ,
300 가

가

,55)

1957 ~ 1975 ,

가

()

가

1980

1985 ,

56)

57)

1981 [

]가 ,

가

가

가 ,

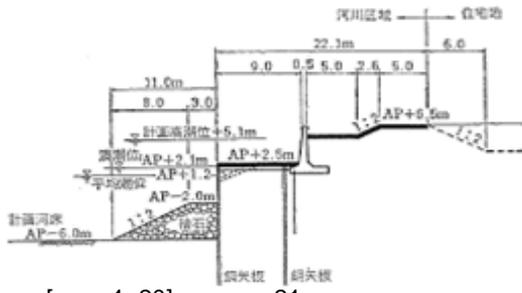
21 ,

(incentive)

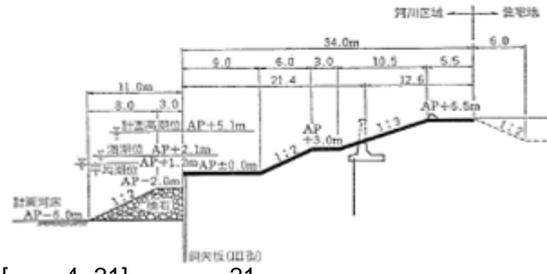
55) 4.6m 가 , ,

56) 가 , 가 , 가 ,

57) , ,) 5 (, 가



[4-20] 21
 (:Toshitsugu Masai, Tomokazu Yamazaki,
 「土木技術41(8)」, 1999)



[4-21] 21
 (:Toshitsugu Masai, Tomokazu Yamazaki,
 「土木技術41(8)」, 1999)

[4-4]

	가		
	가		
()	가		 <p style="text-align: right;">21</p>
*			

3)

:

58)

1

1970

1995

SOS

가

가

가

(1997~2005) 1998

2

, 2003

54

가

1995

가

58)

14.13km

60~90m

14.9℃

1,539mm

53% 823.7mm 가



[4-22]

[4-5]

				/
1995	SOS		○	
1997		○		
1999		○		
1999				○
2000	4 가		○	
2001	()-			
2001	, '		○	
2001			○	
2001	, , 20	○		○
2002		○		
2002	10		○	
2003	가, 70 , , ,		○	
2003	3.3km	○		
2004				
2005	, ,	○		
2006	, ' , ,		○	
2006	.	○		
2006		○		
2007			○	
2008				○
~2010	, , ,			○

* : , (http://oncheon.dongnae.go.kr)

가

2005

가

가 .59)

[4-6]

()		· () · · ·
()		· · · () · (, ,)
()		· (2.88km) · 3 · 2 , 4 · (, 2 , 4)



[4-23]
 (:)
 (<http://oncheon.dongnae.go.kr>)



[4-24]
 (:)



[4-25]
 (:)



[4-26]
 (:)



[4-27] ()



[4-28] ()



[4-29]
 (:)



[4-30]
 (:)

가
가
가

[4-7]

			
			
	5~9		
			
	2		
			
			* :

가

1)

2)

3)

60),

3

2007 2009 가

3

[4-8] ‘

	가				
1998					-
1999					-
2000 ~ 2001				(17 가)	

60)

1

2002	'	,		가, , 가,	,
2003 ~ 2005	(,)	(,)	6	가	,
2006	,	2006	,		,
2007	, - , , , , ,	7 ,	, 가 가		- , ,
2008	,	, ,			,
2009	,	,			, 2010 ,
* : , 1 (2000)~ 12 (2009)					

10m 가
 ,
 가
 ,
 가
 가



[4-31]



[4-32]



[4-33]



[4-34]

가 / / , . (2005)

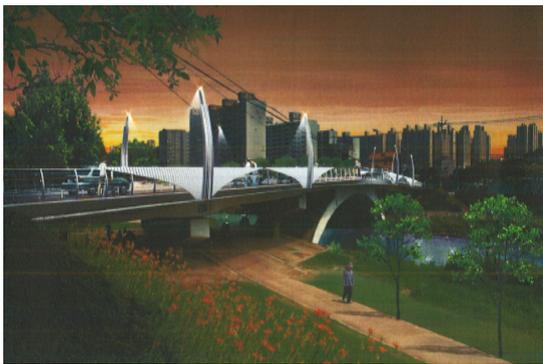
(2007.12~2010.12), (2009.10~2013.12)

가

.61)

[4-9]

			· = + + 가 , 가	· waterfront
	/	/	· :	· 가
			· :	·
			· :	·



[4-35]
(:)



[4-36]
(:)

61)

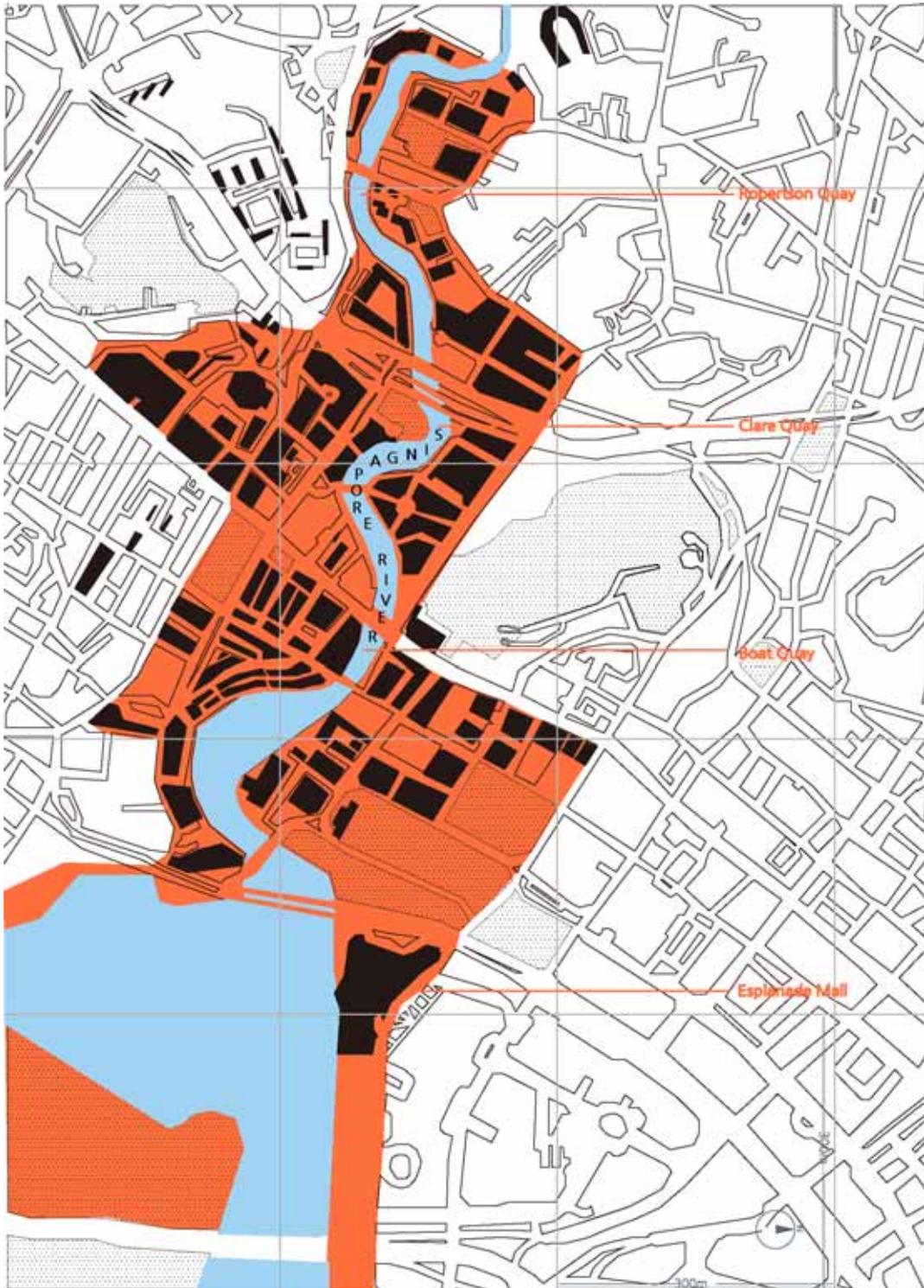
(2010. 8. 9)

4) : 가 가

가 (Central Area) 가 55 가
, 가 가 12%
가 (Central Area)
, 6
, 4 가 (Singapore River)
가
가 (Singapore River)
가 (TOL)
가 가
가



[4-37] 가 (singapore river)
(: URA)



[4-38] 가 가 (singapore river)



[4-39]



[4-40] 가

가



[4-41]



[4-42]

(ORA, Outdoor Refreshment Area)
가(TOL, Temporary Occupation Licence)

가

(ORA, Outdoor Refreshment Area)

, 가

(Outdoor Refreshment Area)

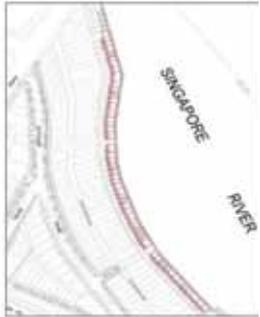
가 (Temporary Occupation License)

TOL

62) , 가

가 .

[4-10] (ORA, Outdoor Refreshment Area)

Definition		
Use		
Location		
Structure	, 1.2m	
Size	15	
Height	4	



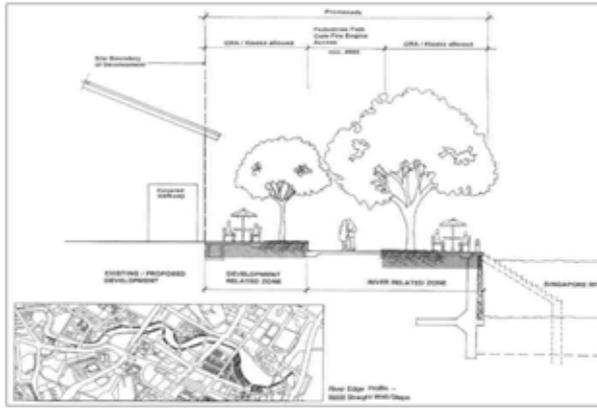
* : URA, 'The guidelines for Outdoor Kiosks and ORA for BOAT QUAY PROMENADE[SINGAPORE RIVER PLANNING AREA]' ,2005(<http://www.ura.gov.sg>)

62) ORA 가 , 가 , 가 , 가 4m , 가 , 가 가 50cm



[4-43] 가

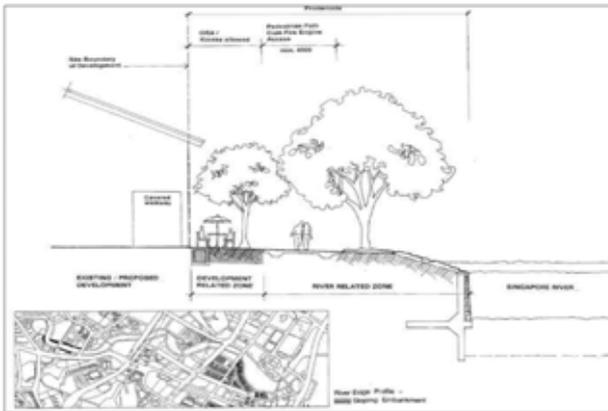
가(TOL)



[4-44]

가(TOL)

(: URA, The guidelines for Outdoor Kiosks and ORA for For Singapore River Promenade, 2002(<http://www.ura.gov.sg>))



[4-45]

가(TOL)

(: URA, The guidelines for Outdoor Kiosks and ORA for For Singapore River Promenade, 2002(<http://www.ura.gov.sg>))

가

가 , (Art Incentive) 가

, 가 , , , ,

2% 가 , (PAAC, Public Art Appraisal Committee) 가 URA .

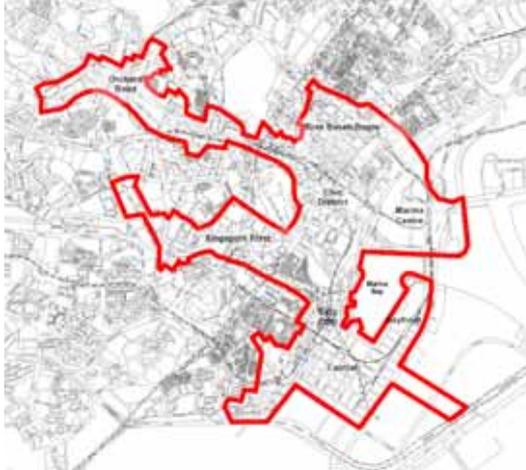
[4-11] (Art Incentive)

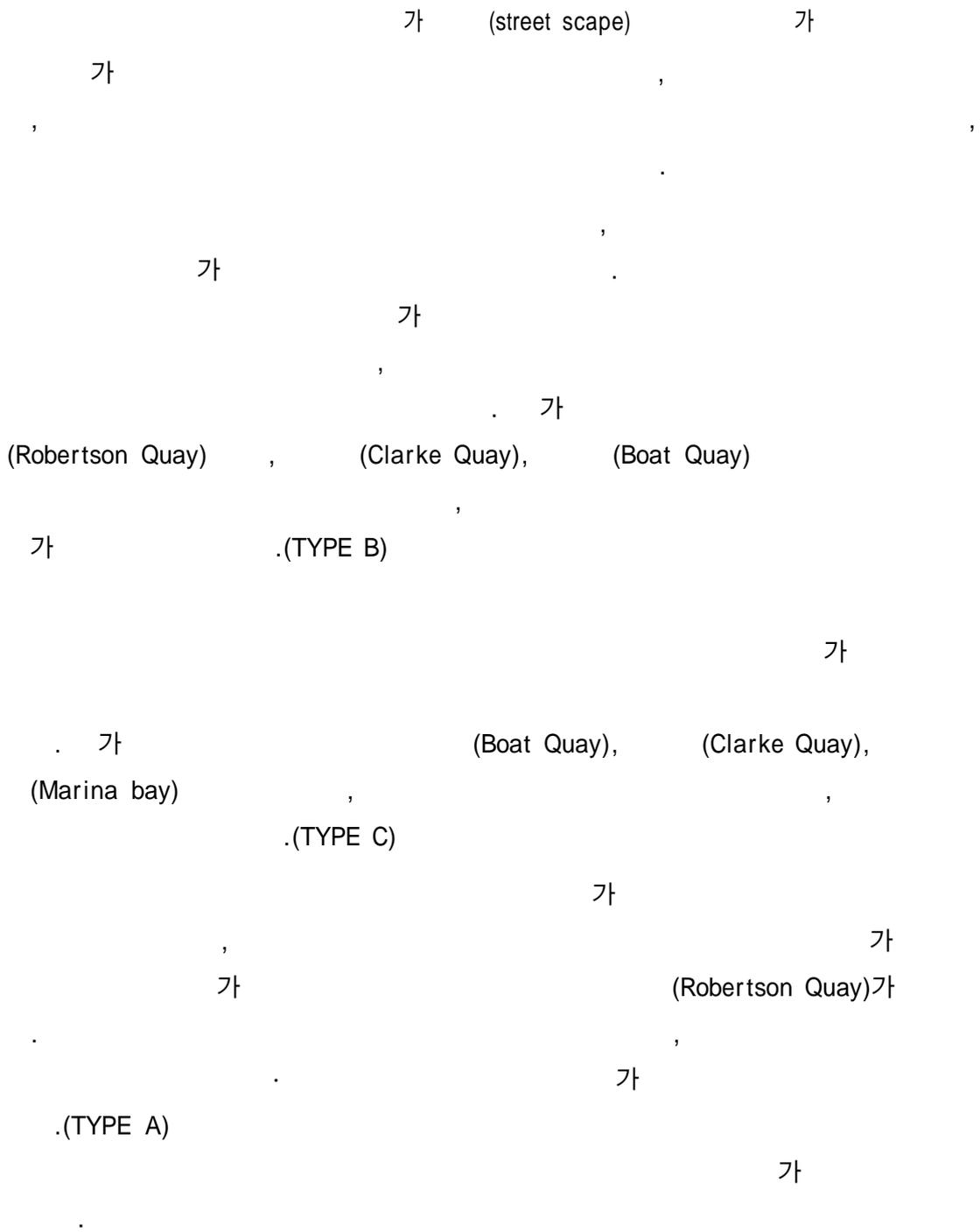
Size	
Material	
Maintenannce	,
Safe	, 가
Art Value	, 가
Estrblishment	, 가
Location	

CBD

, .
2% 가 가
. , 가 가
URA
가 .
가 7 11
, 가
가 .

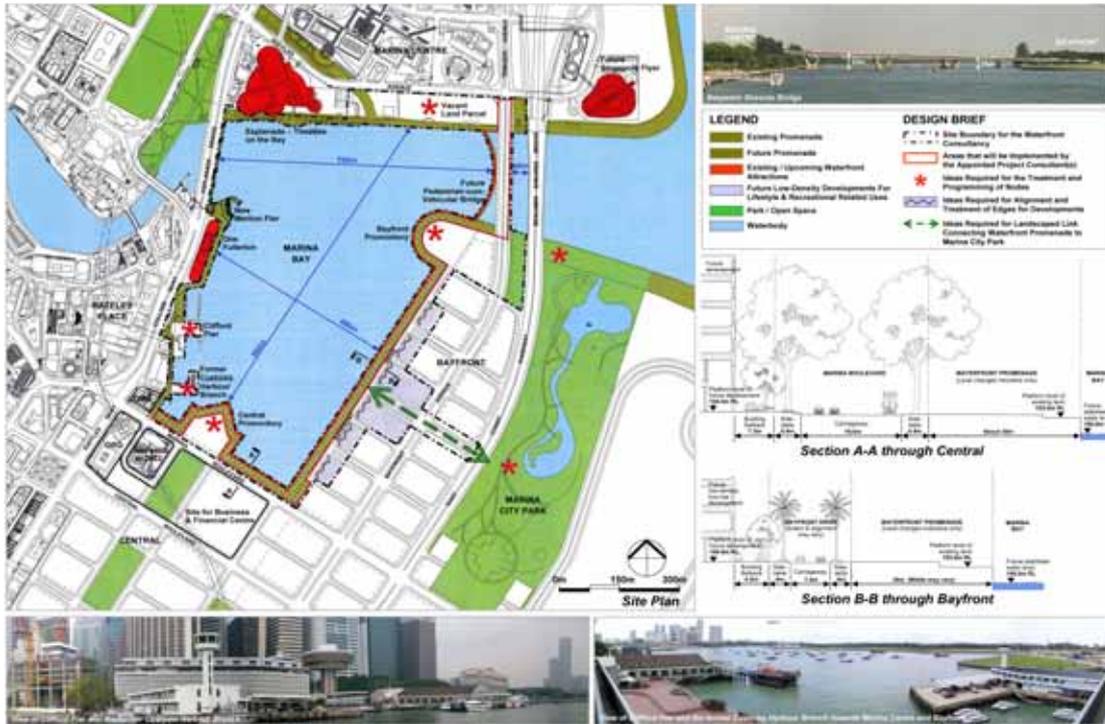
[4-12]

Art Incentive	Light Incentive
	
	
	
<p>* : URA, 'lighting plan guidelines' (http://www.ura.gov.sg)</p>	



[4-13] (Robertson Quay), (Clarke Quay), (Marina Bay)

TYPE A	TYPE B	TYPE C
(Robertson Quay)	(Robertson Quay)	(Clarke Quay)
(Upper Robertson Quay)	(Robertson Quay)	(Marina Bay)
<p>* : URA, 「DESIGN & SUBMISSION GUIDELINES FOR IMPLEMENTATION OF THE SINGAPORE RIVER PROMENADE」, URA, 1999</p>		



[4-46] (Site Information Plan)
 (: URA, 「Singapore 1:1 A Gallery of Architecture & Urban Design」, URA)



[4-47] (Site Description)
 (: URA, 「Singapore 1:1 A Gallery of Architecture & Urban Design」, URA)

5)

:

1993

가

1980

가

가



[4-48]

(: Jorg Ploger, Bilbao City Report, 2007)

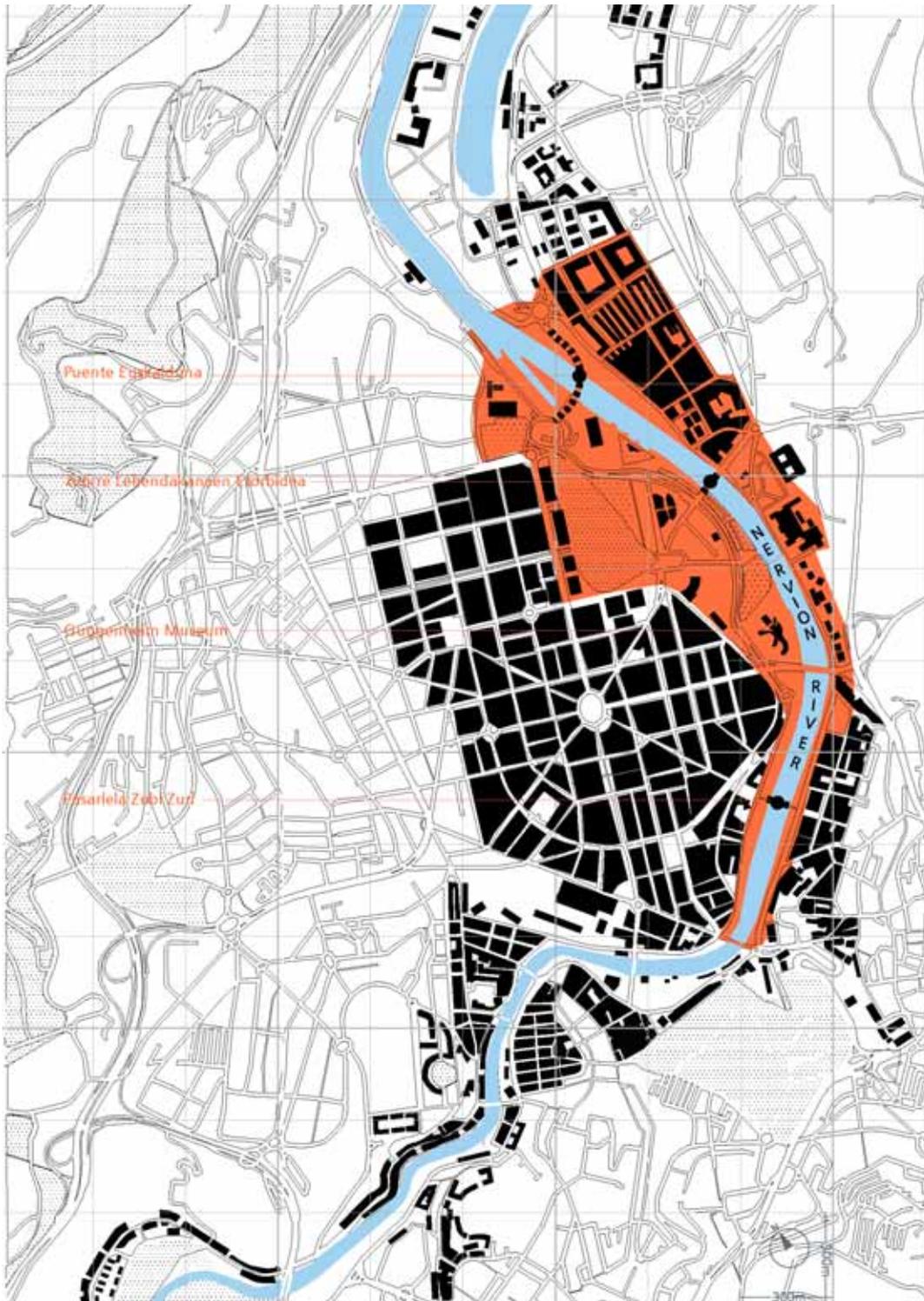
[4-49]

(: Jorg Ploger, Bilbao City Report, 2007)



[4-50]

(: The Port Authority, Bilbao Ria 2000)



[4-51]

(Tram line)

2002

(Abandoibarra)



[4-52]



[4-53]

(Tram)



[4-54]



[4-55]



[4-56]

가

(Uribitarte)

(Universidades)

(Uribitarte)

(Arenal)



[4-57]



[4-58]



[4-59]



[4-60]



[4-61]



[4-62]

가

가



[4-63]
(: <http://www.guggenheim-bilbao.es>)

가 가

가



[4-64] 가
(: <http://www.guggenheim-bilbao.es>)

가 , 가 (Cesar Perry)가 가 (Padre Arrupe)
 가 가 , (Euskalduna)
 가 .



[4-65]
 가 : Javier Manterola



[4-66]
 가 : Santiago Calatrava



[4-67]
 가 : Fernandez Ordonez (: <http://www.bilbaoria2000.org>)

2000
가 . 99
1700

가 가 가 가



[4-68]
가 : Frank O. Gehry
(: <http://www.guggenheim.org/bilbao>)



[4-69]
가 : Frank O. Gehry
(: <http://www.guggenheim.org/bilbao>)



[4-70]
가 : Federico Soriano



[4-71]
가 : Rafael Moneo

6)

:

(Rhein River)

(Düsseldorf)

.63)

1950

1960

, 1970

가,

. 2000

(MedienHafen)

4

가가

(Rheinuferpromenade)

가

63)
가

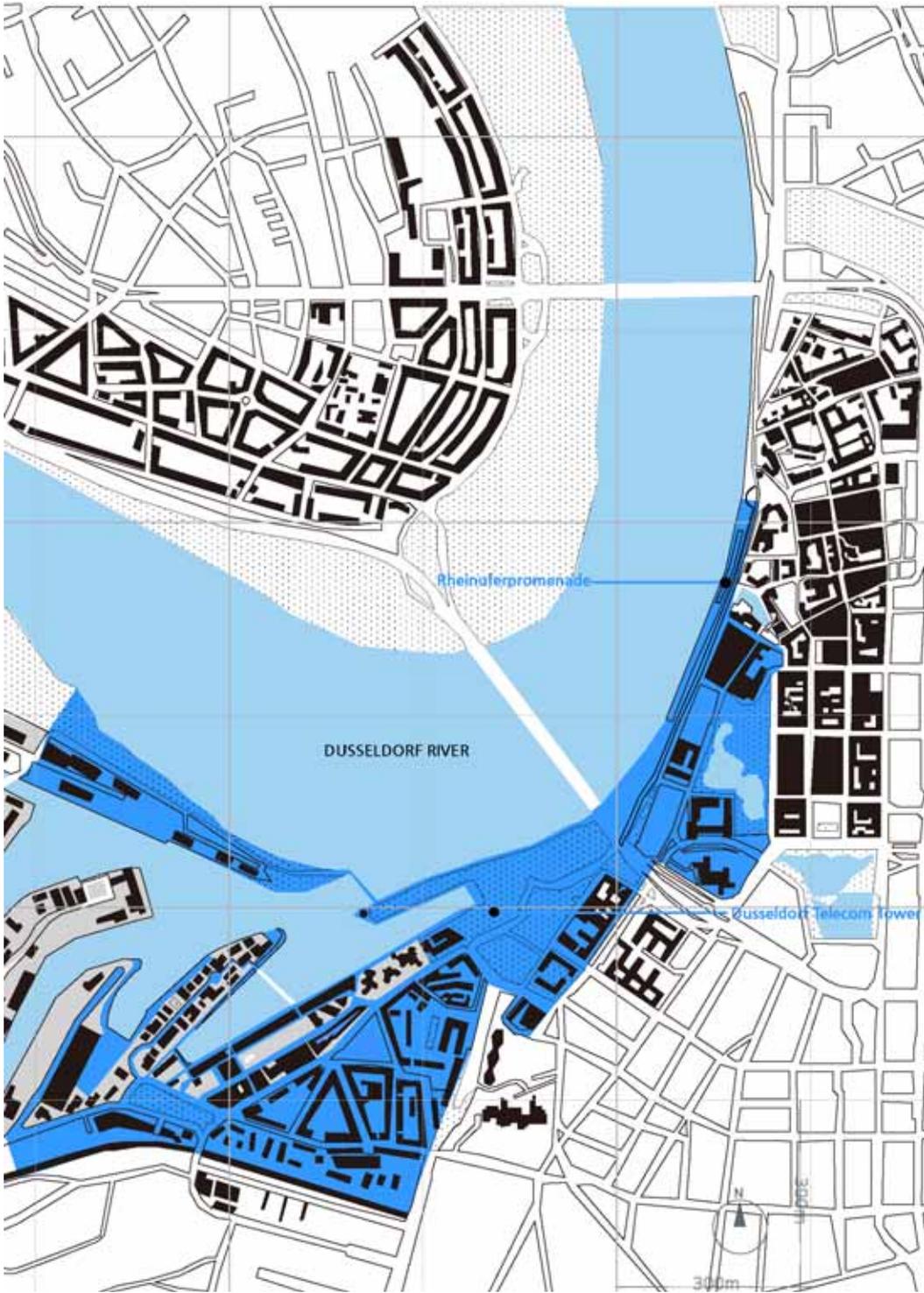
"Meer Human Research Consulting"

2007

5

4 •

179



[4-72]

(MedienHafen)

(Rheinuferpromenade)

1970 1970 2010

1970 1 (1982), (1988),
 (1991)가 , 1980 2

3 4 1990

가

가



[4-73]
 (: www.medienhafen.de)



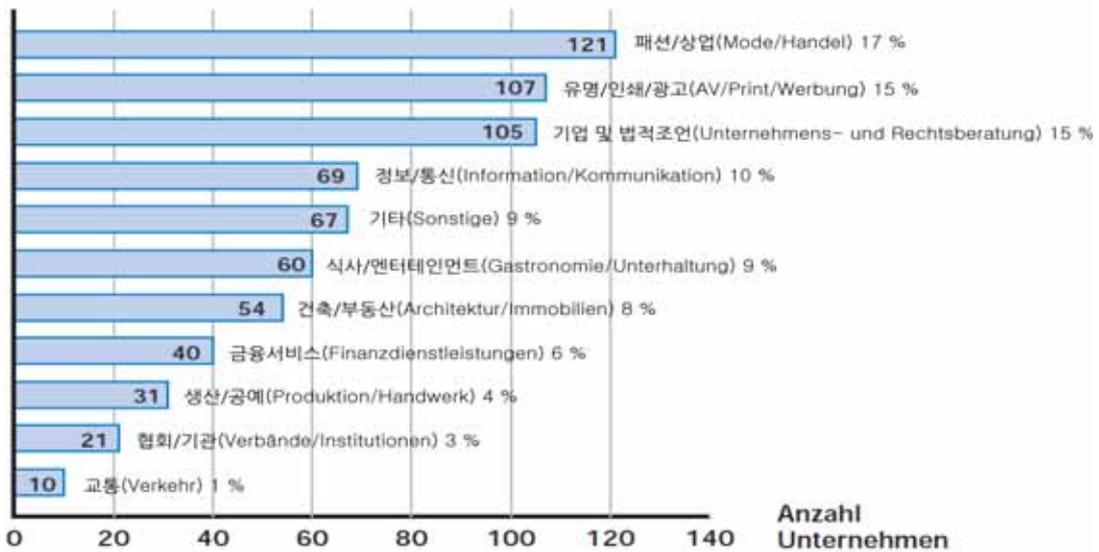
[4-74]
 (: www.medienhafen.de)



[4-75]
 (: www.medienhafen.de)

가
가
709 8,250 16
(Medianhafen) (Media Harbor)
15% 107
가가
가
3

Die Branchenstruktur im MedienHafen



Eigene Auswertung der Wirtschaftsförderung mit Stand 09/08.
Gesamtzahl der ausgewerteten Unternehmen: 709.
Unternehmen ohne Angabe: 3 %.

[4-76]

(: “ Der MedienHafen-Kunst, Kommunikation und Kreativität ” , Landeshauptstadt Dusseldorf, 2008)

30

3

가

TV

가

(William Alsop),

(Steven Hall),

(Frank O. Gehry),

(Maki Fumihiko)

가



[4-77]

(: Beigeordneter Dr.Gregor Bunin, Landeshuaprstadt Pusseldorf,
(www.medienhafen.de))



[4-78]
 ()
 (: www.duesseldorf-tourismus.de)



[4-79]
 (: Medienhafen : Location Guide, 2009)



[4-80]
 (: www.medienhafen.de)



[4-81]
 ()(: www.medienhafen.de)

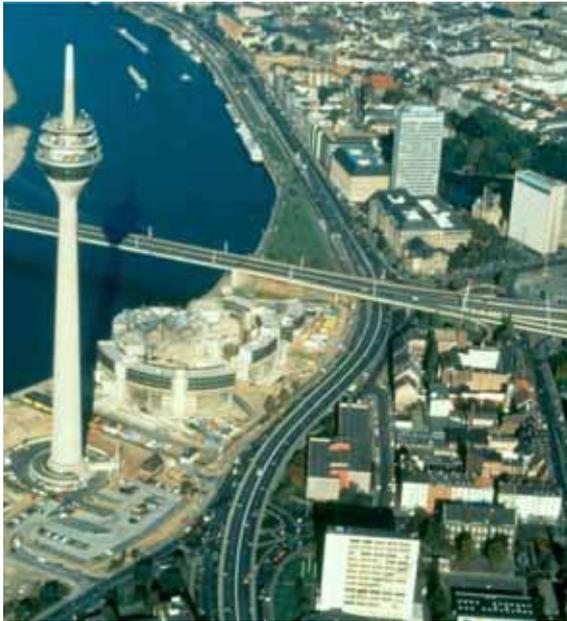


[4-82]
 (: Medienhafen : Location Guide, 2009)



Median Hafen 1973
가

2km
1993



[4-83] -
(: Beigeordneter Dr.Gregor Bunin, Landeshauptstadt Pusseldorf,
(www.medienhafen.de))

(Rheinuferpromenade)

2~3



[4-84]
(:
(<http://ubin.krihs.re.kr>)



[4-85]
(: Beigeordneter Dr.Gregor Bunin, Landeshauptstadt Pusseldorf,
(www.medienhafen.de))



[4-86]
(: Yadid Levy, View Over the Rheinufer Promenade Along
River Rhine with Lambertus Church Castle Tower)

7)

:

64)

65) 20

(+)

가



[4-87]

(Arbeitsgruppe Isar - Plan)'

3 66)

67)

1)

(, 2)

, 3)

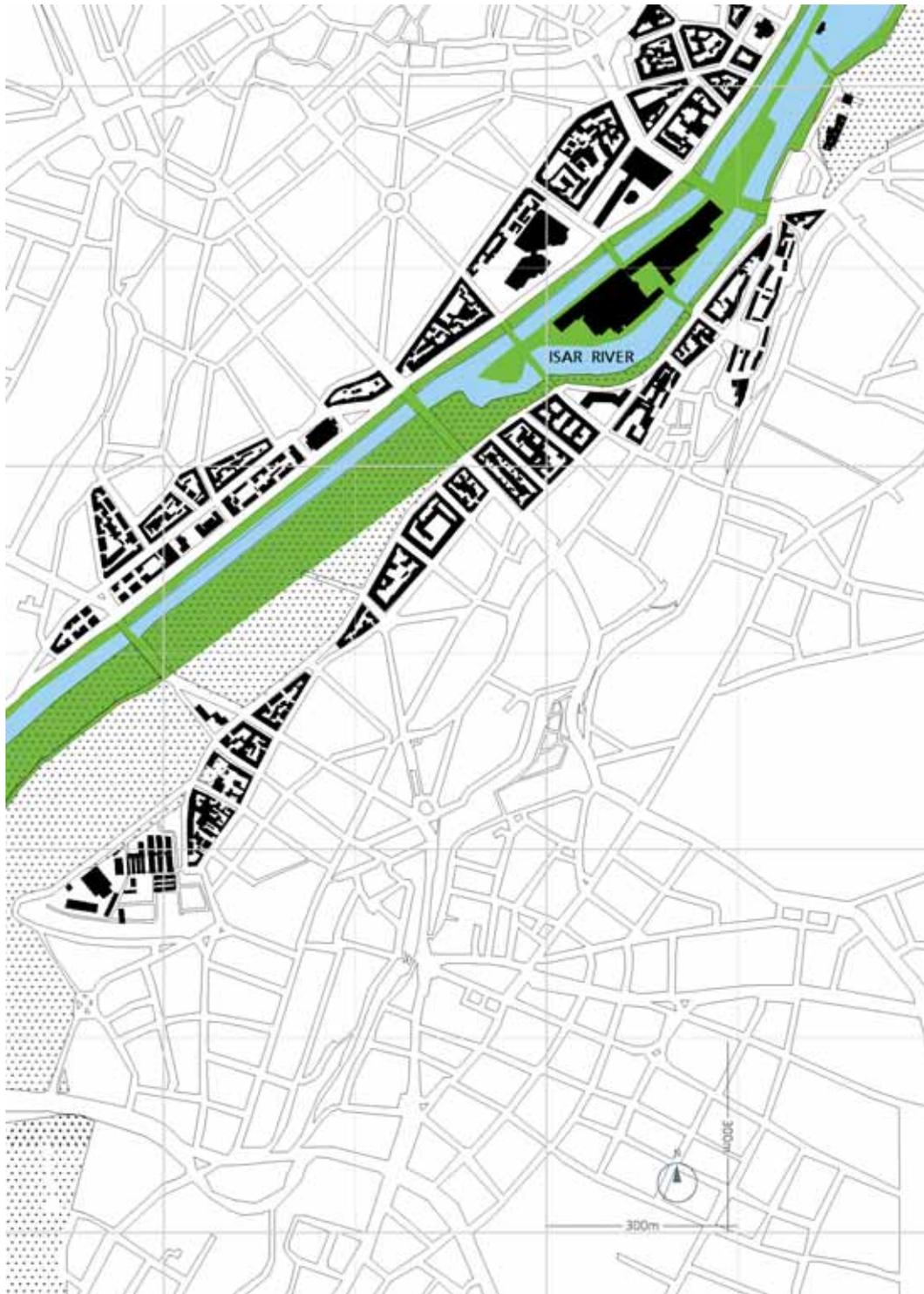
64) ()

65) 289km ,
2,814km² .

66) 1 2000 2002 (Grosshesseloher Breucke) , 2
 2002 가 2004 (Thalirchner Bruecke) , (Flaucher) (Braunauer Eisenbahnbruecke)
 2010 가 , 3 2004 가
 (Corneliusbruecke) (Braunauer Eisenbahnbruecke)

67) 1995 가 ' (Arbeitsgruppe Isar-Plan)'

가 , 2000 9 3 ,
 2,800 (500)가 , 가 55%, 가 45%



[4-88]

가

,

1

2

가

, 3



[4-89]

((), ())

,

,

(3m 6m

) 가 .



[4-90]



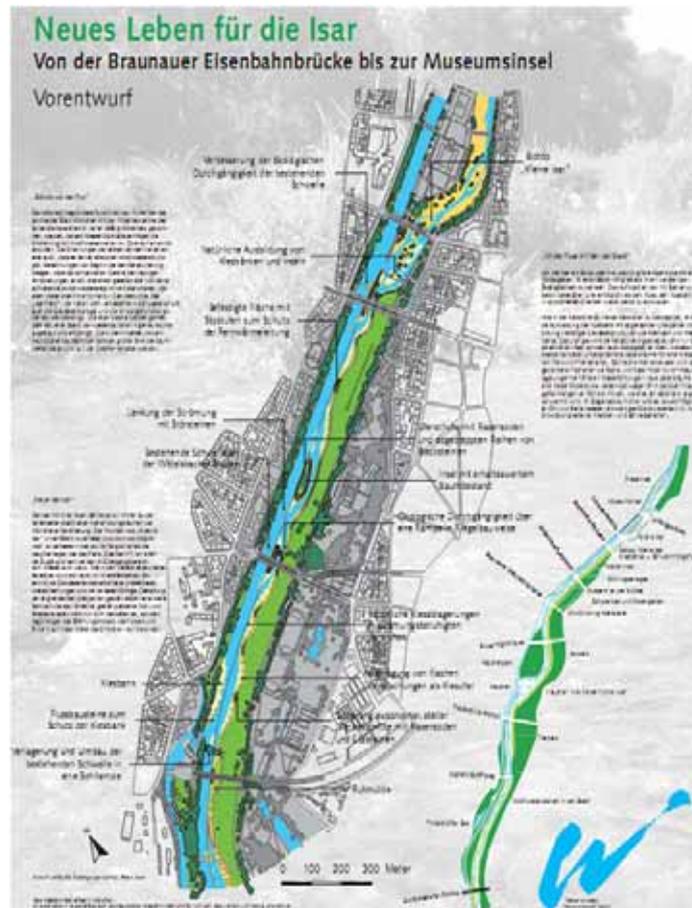
[4-91]

가 , 「 「 () ,

1995 가 ‘ ,

V ,

가 .



[4-92]

, 3

. 1

,

가 가

. , 3



[4-93]

()



[4-94]

3

20

50cm

⁶⁸⁾(Schwelle) 200m

가

가

20

가

()

가

(Huchen⁶⁹⁾)



[4-95]

()

()

68)

69)

8) , 가 :

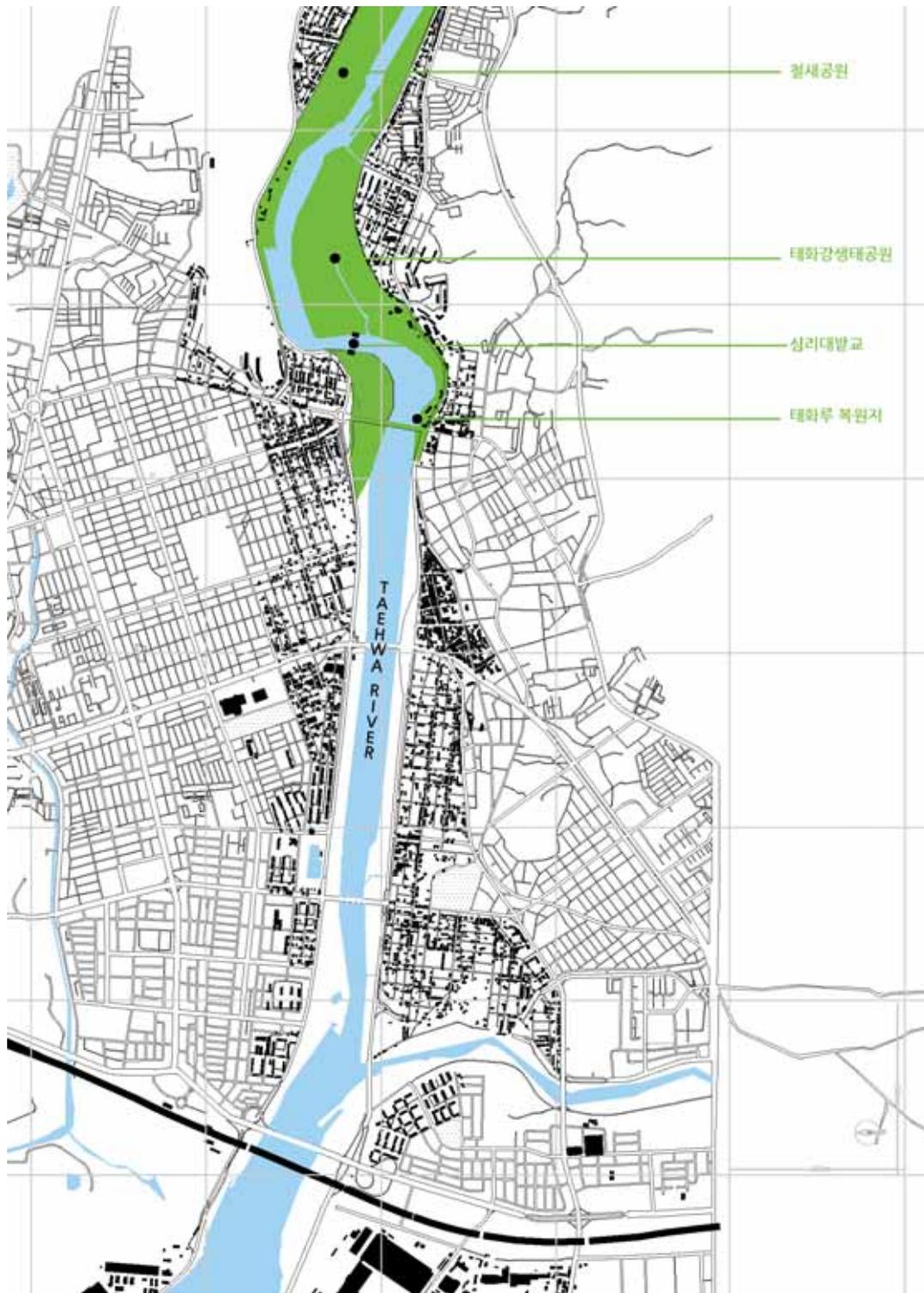
· 가 ,
70) 가
71) 2002 , 2005

가



[4-96]
(: , 「 , 2008, p.4.)

70) 가 ,
47.54km ,
(L=11.28km, ~ 2 (L=36.26km, ~) 가
71) 1960 , ()
가 가 . 1970
가

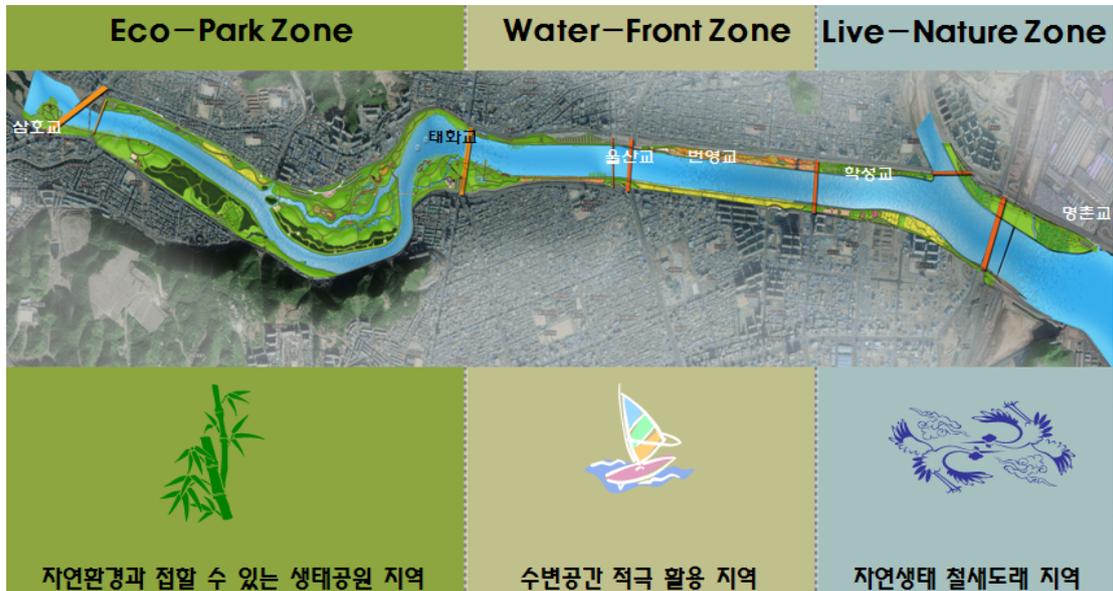


[4-97]

가
 ,
 가 , 가 가
 가 가
 가
 가
 (Ecotone)
 가



[4-98]



[4-99]

(75%, 25%) 72)

가

가

가 가

가가 .73)

가 가



[4-100]
()



[4-101]
()

72)	498,708m ²	14
,	391 , 가 2,903 , 123 , 8,301	
	3,477 ()	
	320 , 5 150 ,	
	1,000	
73)	(10.5.13)	



[4-102]



[4-103]

(:)

74)

가 , 가
가



[4-104]

가

.75)



[4-105]

(:)

74) 12 ()

1.

(10 1 1 3)

2.

6

가

10 1

75)

가

, 2011

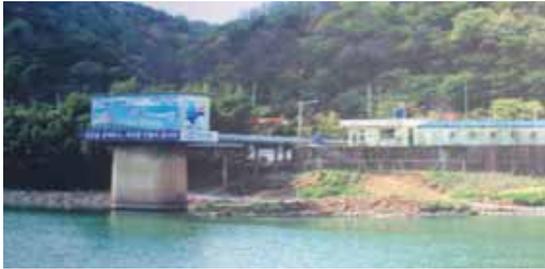
76) ()
)
 ,
 ,
 가 가 ()
 ()
 ,
 , 가 ,



[4-106]
 (:)



[4-107]
 (:)



[4-108] ()
 (:)



[4-109] ()
 (:)

76)

3 (, ,)

가

가

가



[4-110]

가 가

(2004.6.9)

가

NGO,

11,000

.77) 1 1

43

137

, 193 (101, 92)

58

(~ , 7km)

가

77) 2009 : 528 11,000 (1 1 .)

3.

1) : (Hammarby Sjöstad)

12 가

가

가 가

[4-14] (Hammarby Sjöstad)

		•
		•
		•
		•
		•

2) / : 21

()

,

.

,

가

.

21

,

,

,

가

.

.

,

,

.

가

,

,

가

.

[4-15]

21

		•
	,	
	()	•
		•
		•

3)

가 가 가 . ,
 가 . ,
 .
 ,
 , . ()
) ()
 , , ,
 .
 ,
 .
 - . - -
 .
 ,
 . 가
 가 .
 .

[4-16]

	, ,	•
		•
		•
	,	•
	SOC	•

4) (Singapore river) : 가 (Downtown Core) 가

가 가 ,
 .
 ,
 가
 가
 .
 ,
)
 . 가
 ,
 , 가 가 .
 가 ,
 가 가 .

[4-17] 가 (Downtown Core) 가 (Singapore river)

	(street scape) (promenade)	•
	(ORA, TOL)	•
	가	• ,
	SOC	• , SOC
		•

5)

:

가가

가

10 986

16

가

[4-18]

(Nervion river)

		•
		• , ,
		•
		•
		• 가, SOC

6)

:

가

가

가

[4-19]

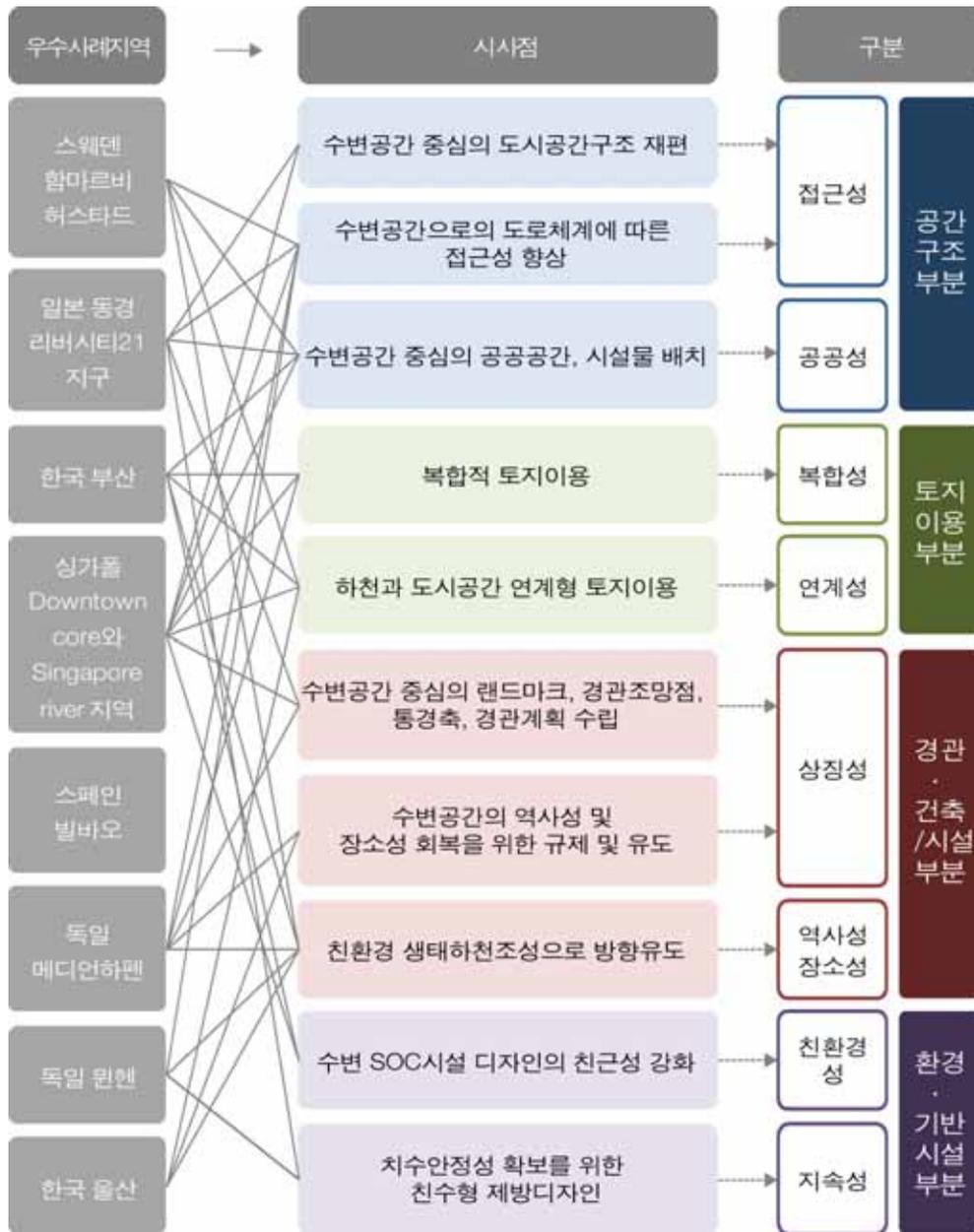
(MedienHafen)

	erpromenade)	(Rheinuf
		가

[4-22]

				/	
	Hammarby Sjöstad	.		,	
	21	,	-		
		(
)			
		,	-	,	SOC
	가 Downtown Core Singapore river	(street scape) (promenade)	TOL)	(ORA, SOC	가
		,	,	,	
	Medien-Hafen	(Rheinuferpromenade)			-
		,	-	-	
가		,	/		,
		,			

(, , / ,)



[4-111]

2)



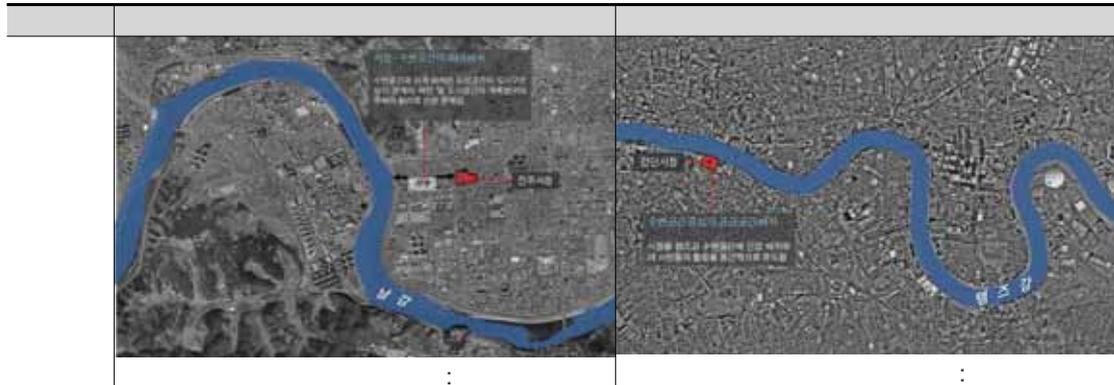
[5-1]

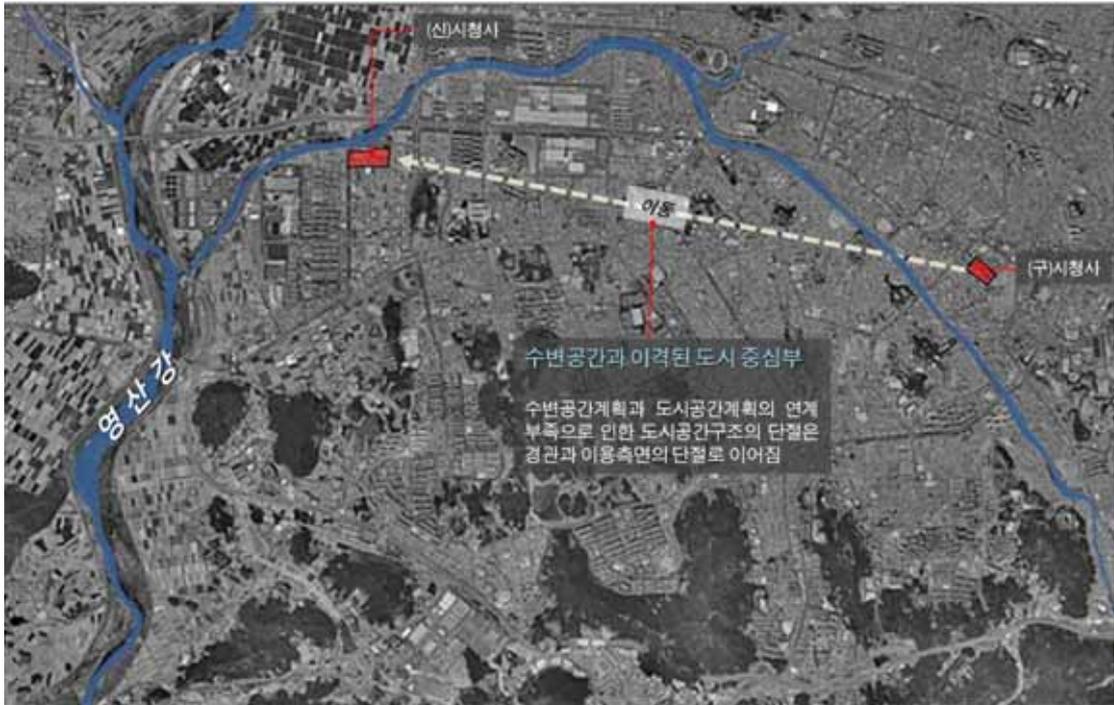
2.

1) :

가

[5-2]



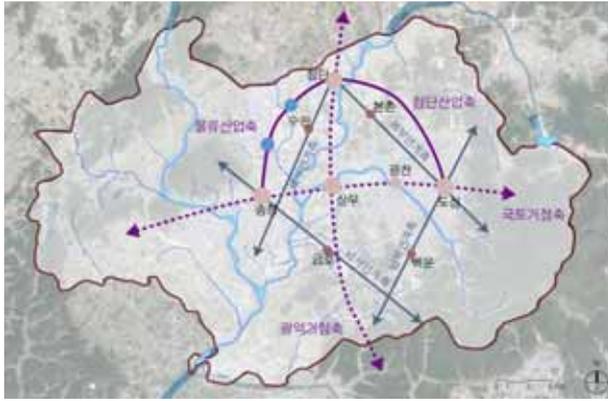


[5-2]

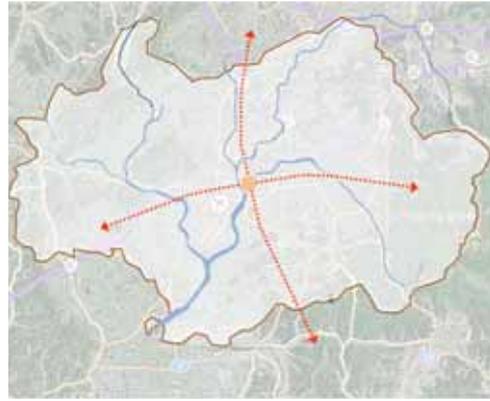
: (),
 ()
 가 .

가

가



[5-3] 2020



[5-4] 2020

[5-3] 가

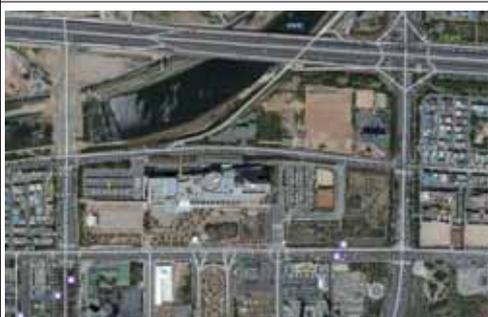
3	/ 5-3-1.	/ (2)
①	2	가
②		
③		
		④

가

가

[5-4]

	/	
	 <p>(,)</p>	 <p>(,)</p>

	
<p>(,)</p>	<p>(,)</p>
	
	<p>21</p>

1 :

가 .



[5-5]

(Thames River)



[5-6]

(Guggenheim Museum) (Nervion)



[5-7]



[5-8]

, , ,
 , (2 1 2 ,
 3 1 ~ 5) . , , ,
 , , , , ((
 2 1 4 , 5 1
 ~ 10)
 가 .

2 () ① 「 " ") 2 6
 " " (. < 2005.9.8, 2008.5.26 >
 2. :
 4. :

(2 () 3 ()), ' ,
 ,
 (. 8 ()).

2 () 3. " " 가
 가. (護岸)· (水制)
 (「 」)·
 (「 」)· 「 」
 ()· (水門)
 (岸壁)· (物揚場)
 .
 8 () 가 ,
 1. , , ,



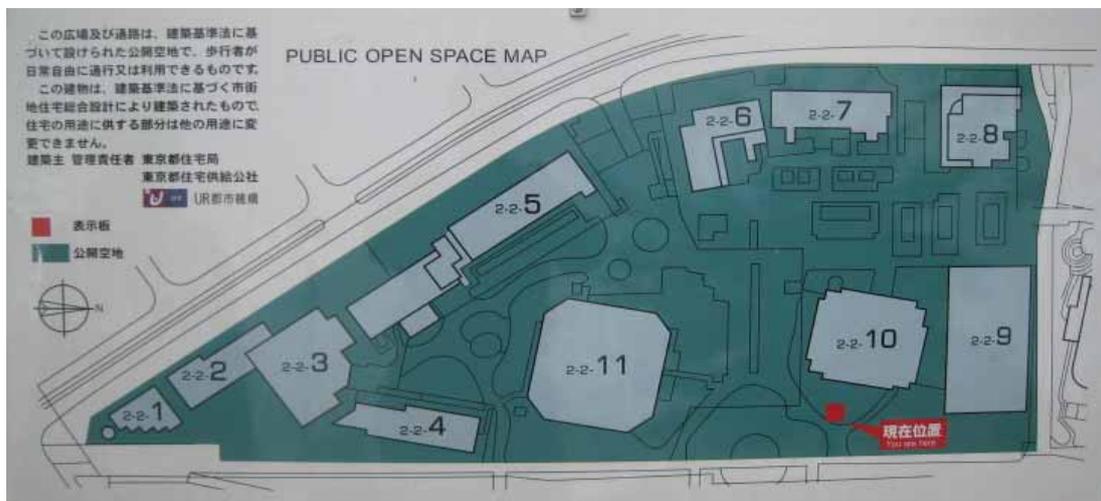
2 :

가 ,

가 .

21

가



[5-9]

21



[5-10]



(21)



[5-11]



[5-12]



[5-13]



(: , :)

), (27 2(

21

가

“(6)
가 ” 가

[5-5]

<p>27 2()① 43 1</p> <p>") (" < 2009.7.16></p> <p>1. 가5 (「 가</p> <p>), 「 2 (), ()</p> <p>2.</p> <p>④ 1 (1 1</p> <p>43 2) 56 60</p>	<p>()</p>

<p>1. 56 1.2 2. 60 1.2</p>	
<p>1 3-2-2. () 가 . ()) . . () 3-2-3. 67 1</p>	
<p>13 3-13-1. (1) 가 (2) 가 가 (3) 가 가 (4) 가 (5) 가 가</p>	<p>(6) 가</p>

가 . , 가 .
 가 . , , 가

[5-6]

		
	 <p style="text-align: center;">(,)</p>	 <p style="text-align: center;">(,)</p>
	 <p style="text-align: center;">(,)</p>	 <p style="text-align: center;">(,)</p>

:

가

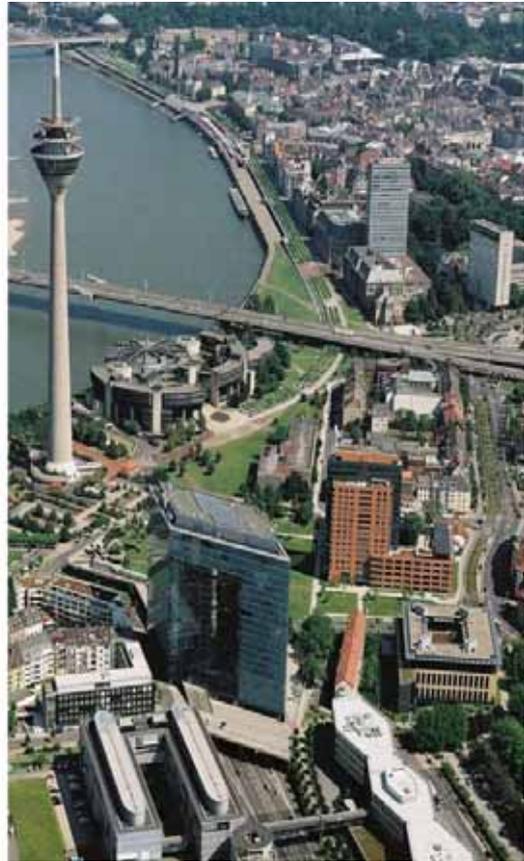
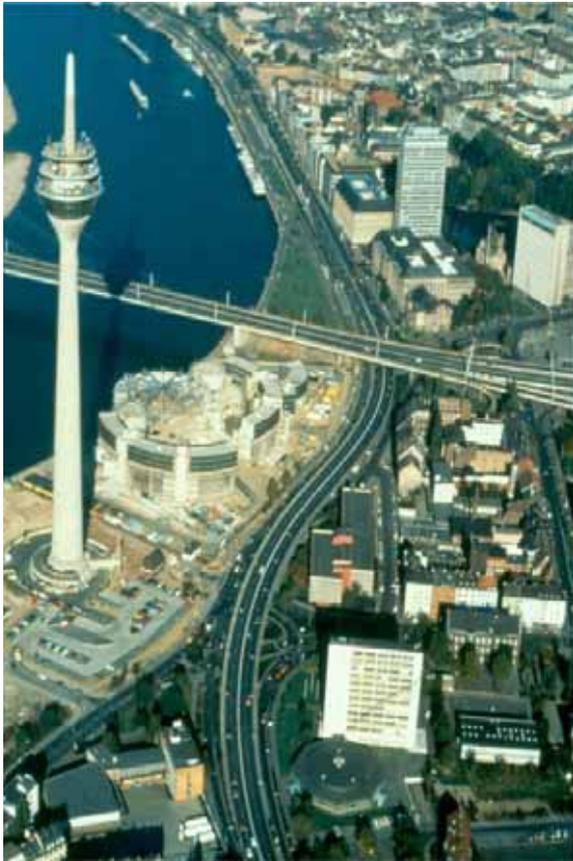
가 ,

5

5-5-1.

가 ,

가



[5-14]

[5-7]

5 5-5-1. (1) ③ .	()
④	④ _____ _____ _____
(2) ① (), , , , ②	()
	() (3) ① , , ,

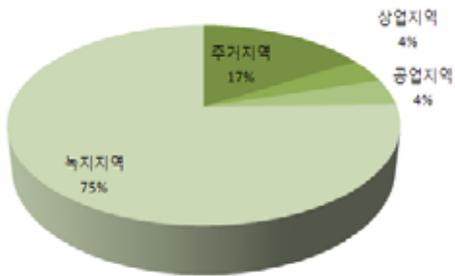
2) :

가 , 78),

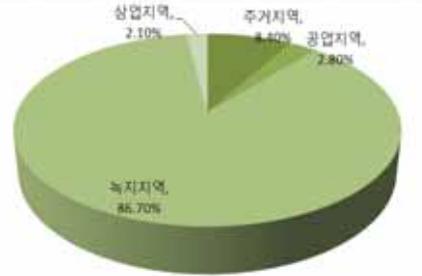
가 ,

· , , ,

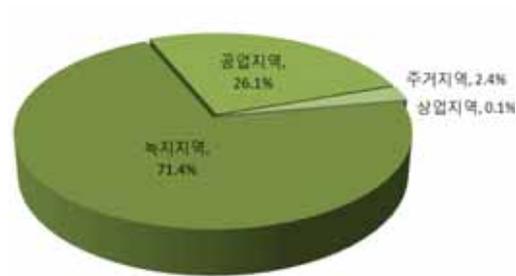
가 .



[5-15] 1km



[5-16] 1km



[5-17] 1km

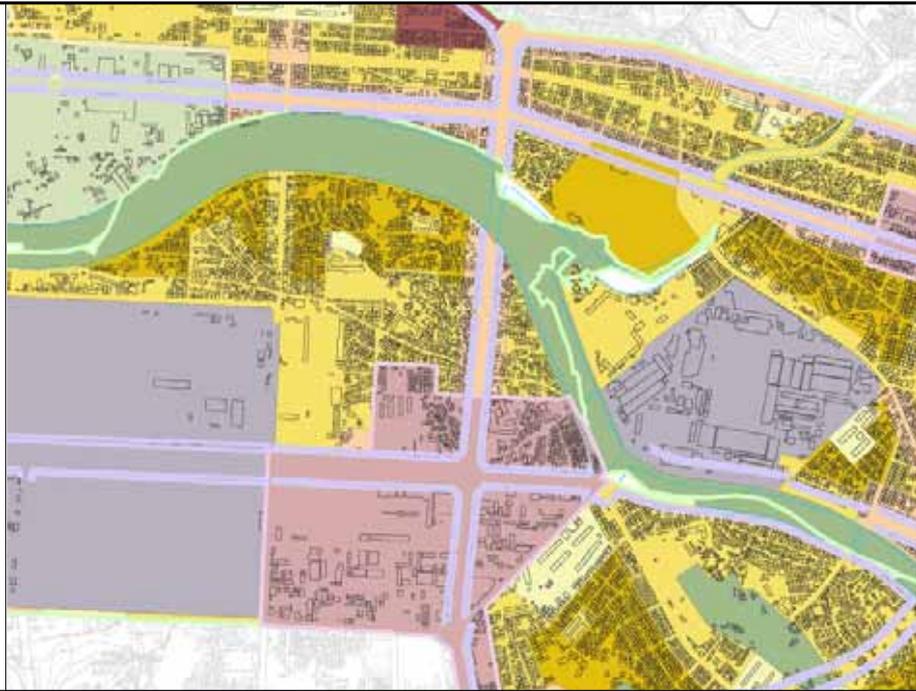


[5-18] 1km

78) , 가 . 가

[5-8]

()



()



[5-9]



‘ ’ ‘ ’

‘ ’
가 ,

(10 1) (4 1)
가

() ‘ ’ ‘ ’ 「 ’
가 .

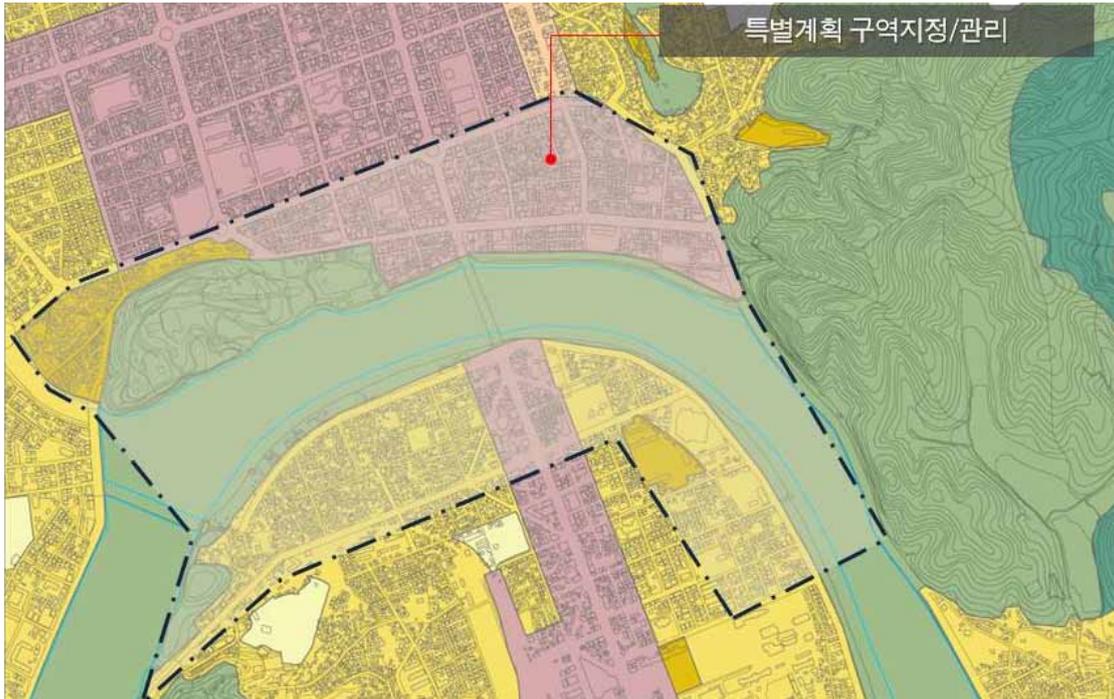
3-1-1-1, 3-3-2) . (

가 가 , 가
 .(31)

[5-10]

<p>31 ()</p> <p>② 37 2</p> <p>1. 가.</p>	()
<p>_____</p>	<p>_____</p> <p>가 _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p>1 / 1</p> <p>3-1-1-1.</p> <p>가</p>	<p>3-1-1-1.</p> <p>_____</p> <p>가</p>
<p>3-1-1-3.</p> <p>가 가</p>	()
<p>3-3-2. / 3</p>	<p>3-3-2.</p> <p>_____</p>

15) . (37 ,



[5-19]

[5-11]

()	
<p>37 () ①</p> <p>1. :</p> <p>2. :</p> <p>3. :</p>	

<p>4. : 가</p> <p>5. : , , ,</p> <p>6. : 가 가</p> <p>7. : . .</p> <p>8. :</p> <p>9. :</p> <p>10. : 가</p> <p>11. : 가</p>	<p>12. : (*)</p>
<p>1 / 15</p> <p>3-15-2.</p> <p>(1) , , ,</p> <p>(2) 가</p> <p>(3)</p> <p>(4)</p> <p>(5) 가 2</p>	<p>(6) 가 (*)</p>

-

가

가

가

()

500m~1km

/

가

가

가

가

.79)

79) 8 () ②

가, 가, 가, 가,
 가
 가
 가



[5-20] (:)

2. 36

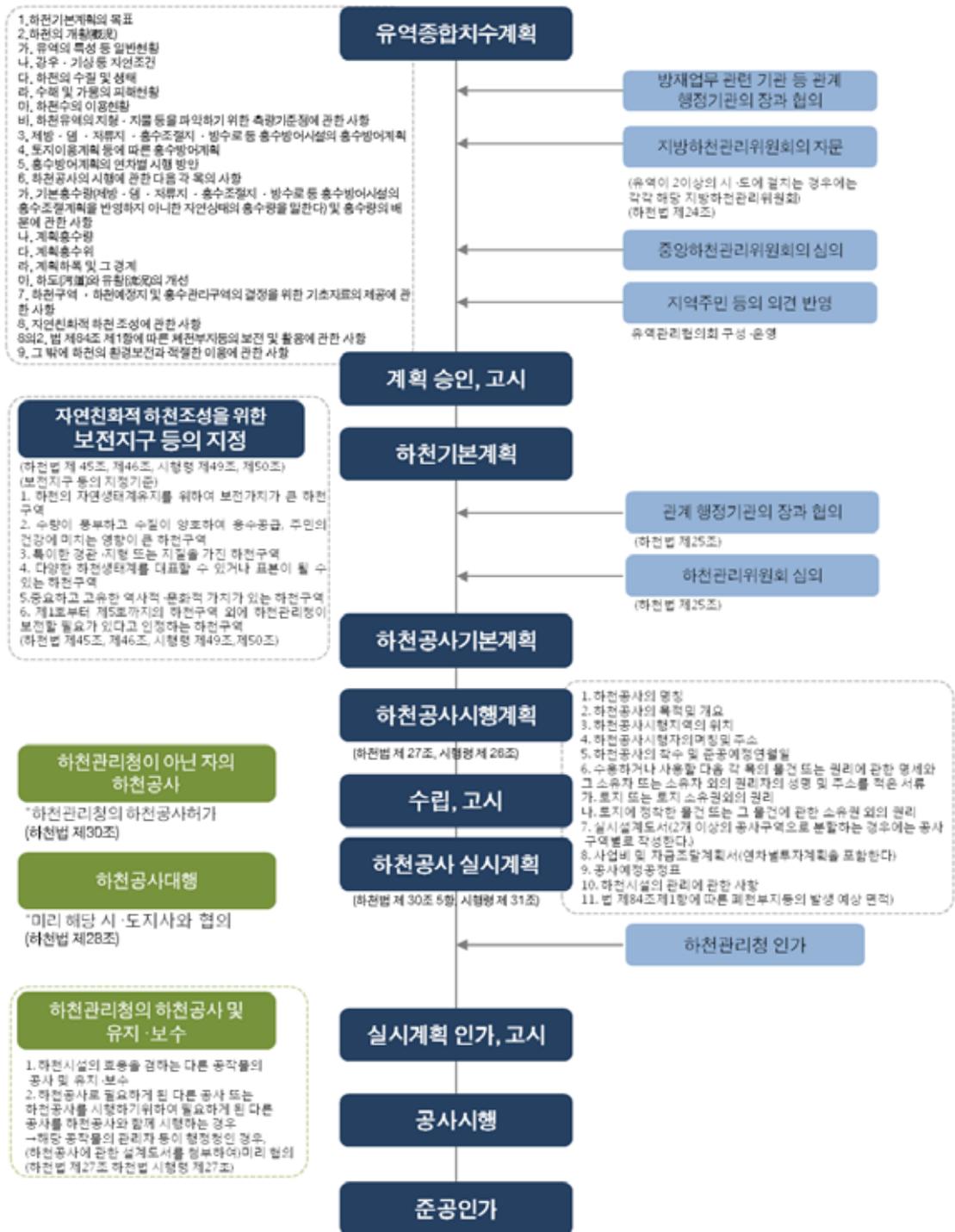
「
 」 7

[5-12]

	(가)	
	10	20 ()
	<p>가 : ...</p> <p>,</p> <p>가 ; NGO, 가</p> <p>()</p> <p>() (</p> <p>가 : :</p> <p>()</p>	<p>()</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>() ()</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>↓</p> <p>()</p>
가	가, 가, 가,	가, 가

[5-13]

	
<p>(,)</p>	<p>(,)</p>
	
<p>(,)</p>	<p>() () () (가)</p>
	
<p>(,)</p>	<p>(21)</p>



[5-21]

1 : . +

, , ,
가 ,
가 .

[5-14]

	 <p>21</p>
	 <p>가 가</p>
	

가 , 가 「 」
 , 「 」 「 」 「
 」 ‘ ’ , ‘ ’ ,
 가 가 .

[5-16] -

<p>3) / 9 () ③ . 가 가 .</p>	()
<p>2) / 12 () ⑤ . 가 가 가 가 , 22 . . . < 2008.3.28, 2010.4.15> ⑥ 5 가 가 , 「 ’ 가 가 」 9 3 . < 2008.3.28, 2010.4.15></p>	()
<p>* 가</p>	<p>3 13 : . 가 가 가 가 가 , 37</p>

3)

/ : .

,

1) 「
2) 「 」

」 ‘ ,
(1 5)’

, 3) 「 」

가

가

가

가

가

가

() 가 .

, ,

가 .

[5-17]

/	 <p>(,)</p>	 <p>()</p>
	 <p>()</p>	 <p>Light Incentive</p>
	 <p>()</p>	 <p>(,)</p>

1 : 「 」 ‘ ’
「 」 ‘ ’
가 . 「 」
가

가 “
” 가



[5-24]

[5-18]

<p>2 1 31 () 1.</p>	<p>1) . : _____</p> <p>2) . : 가 _____ _____ ' _____ 가 _____</p>
---------------------------	--

[5-19]

<p>「 」 13 ()</p> <p>① ()</p> <p>“ ”) ()</p> <p>1. 가</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p> <p>6.</p>	<p>7.</p> <p>()</p>
<p>(2007.12)</p> <p>1 / 5</p> <p>1-5-1. ,</p> <p>(1) :</p> <p>‘ , , ‘ , ‘</p> <p>(2) :</p> <p>(, , 가 , , , 가) , (, ,)</p>	<p>()</p>
<p>5</p> <p>5</p> <p>5-5-1.</p>	<p>()</p>
<p>()</p>	<p>5-5-2. ()</p> <p>(1)</p> <p>(2)</p> <p>(3) 가</p> <p>(4)</p> <p>(5)</p> <p>(6) 가</p>
<p>5-5-2.</p> <p>(1)</p> <p>(2)</p> <p>(3)</p> <p>(4)</p> <p>(5)</p> <p>(6)</p>	<p>5-5-3.</p>

3 : 「 」
 , 「 」 (21)
 (22) ,
 ,
 (21) ‘ ’ ‘ ’
 ,
 .
 2009
 , 10
 .80)

21 ()) ① (< 2008.2.29>
 ② . < 2008.2.29>
 ③ . 1 2
 ④ . 1
 ⑤ 1 3 3
 22 () ① , . . .
 1.
 2.
 3.
 ② , . . . 1
 ③ 1 2 , ,

80) 가 1 (: 가) ,



[5-25] 2009

4 :

가 . 가 가 가

가

[5-20]



[5-21]

<p>1 10 3-10-1. (1) 가 (2) (空地)가 (3) 가 가</p>	<p>(4) 가 ()</p>
<p>3-10-9. 가</p>	<p>3-10-9. 가</p>

가

가

가

가

[5-22]

		
	(,)	(,)



(,)



/
()



(,)



()



(,)



()

:

-

-

「 」

가

가

「

」

(8 1 3),

가

8 () ① 「
」
1. (" ")
2.
3.

(District Based)

가

가



[5-26]

4) :

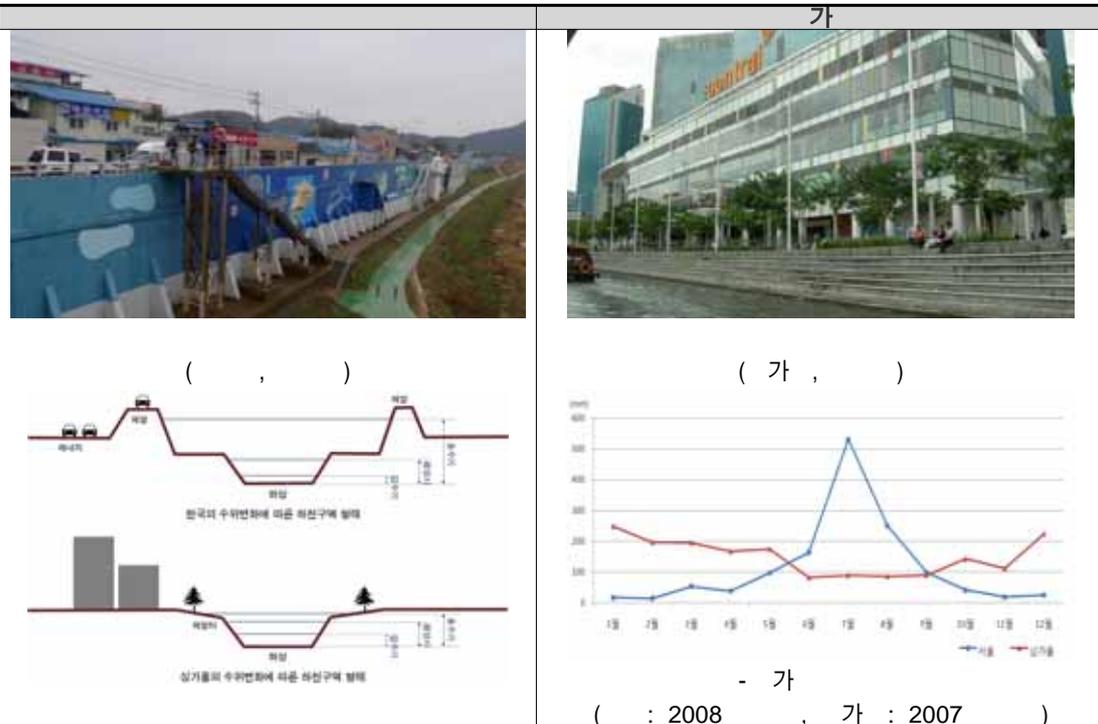
(治水)

가

가

가

[5-23]



[5-24]

(/)	 <p>(,)</p>	 <p>(,)</p>
()	 <p>(,)</p>	 <p>(, 21)</p>
()	 <p>() (,)</p>	 <p>(,)</p>

가 : 가

가 , 가

가 . 가 (가 21)

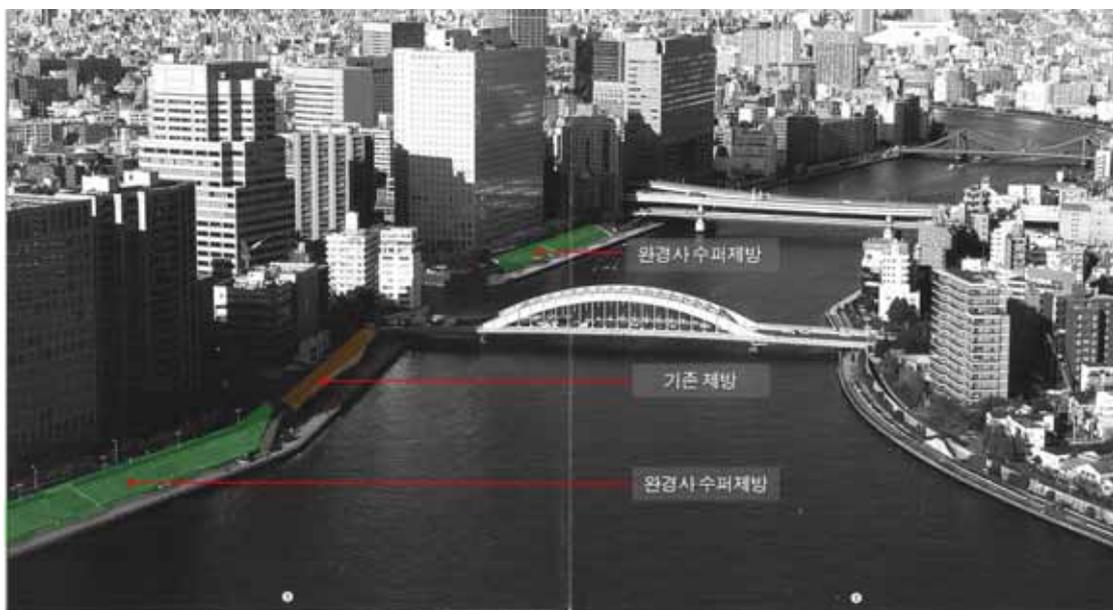
가 . 가



[5-27] (21)



[5-28] 가 (:)

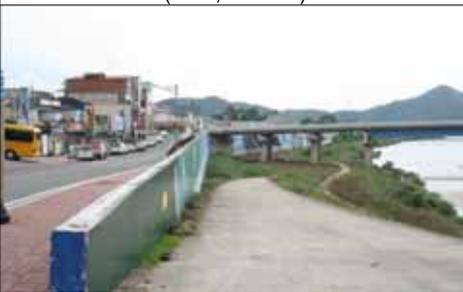


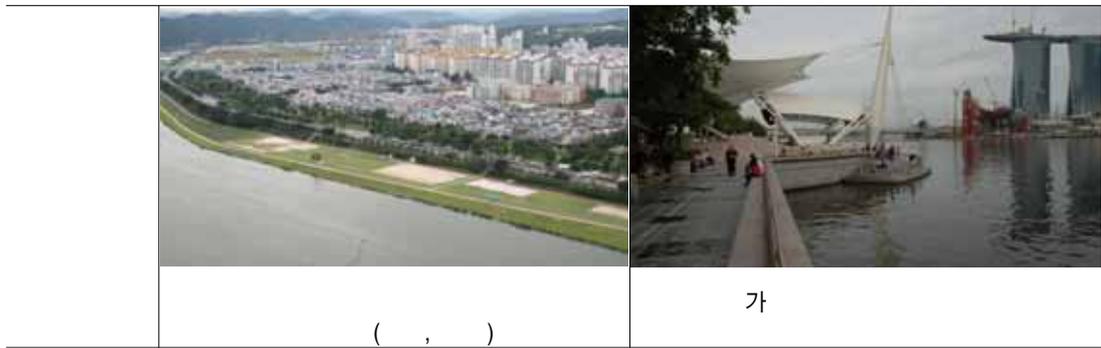
[5-29] 가

SOC /

SOC ,
가
,
가 .

[5-25] SOC

		
	(,)	
1		
	(,)	(, , 21)
2		
	(,)	가 가 (犀川)



: , 가

가

가 ,

가 가

가 가

가

, (,

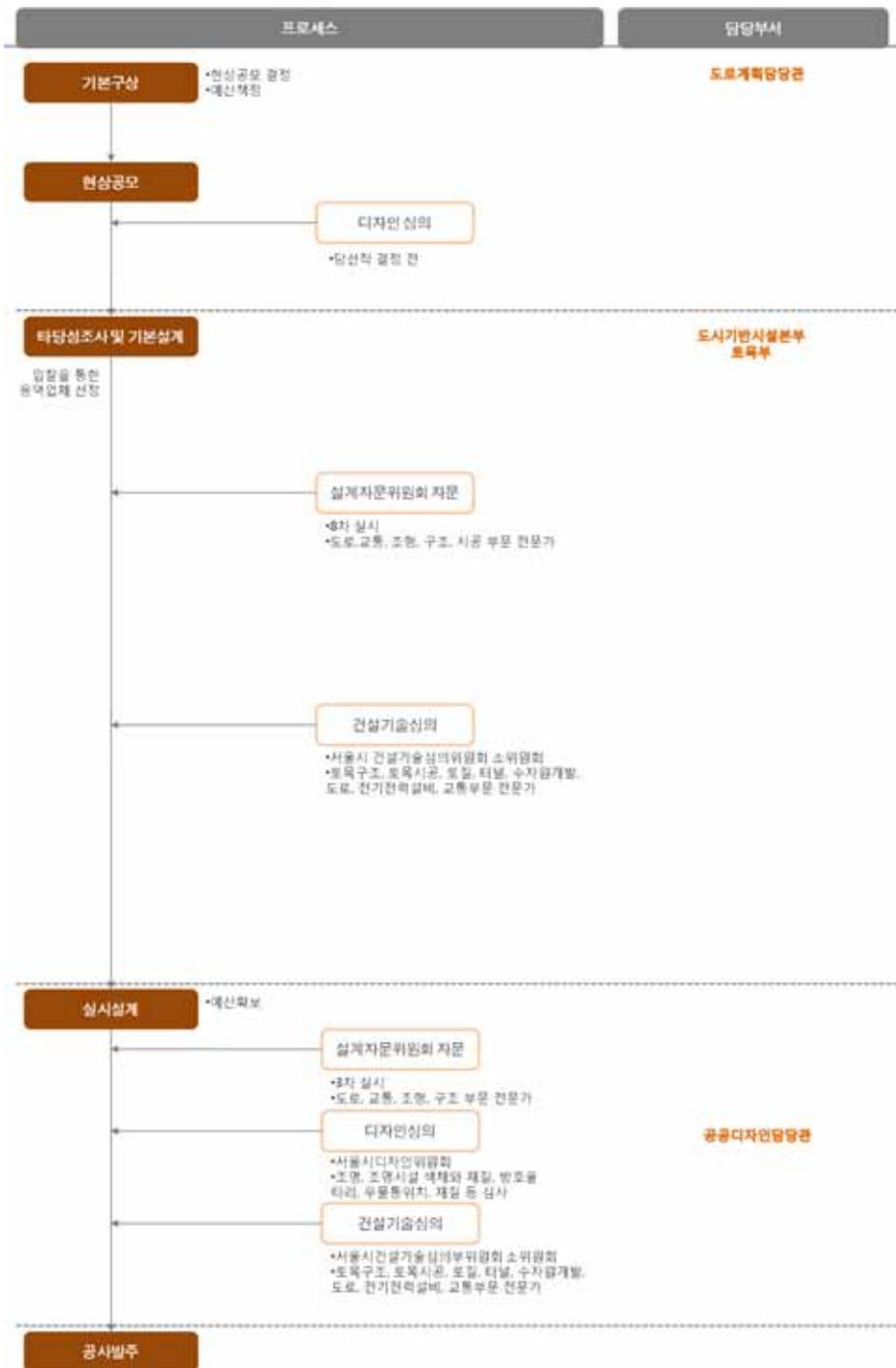
, ,) 가 . 가 .

가 가 가 , 가

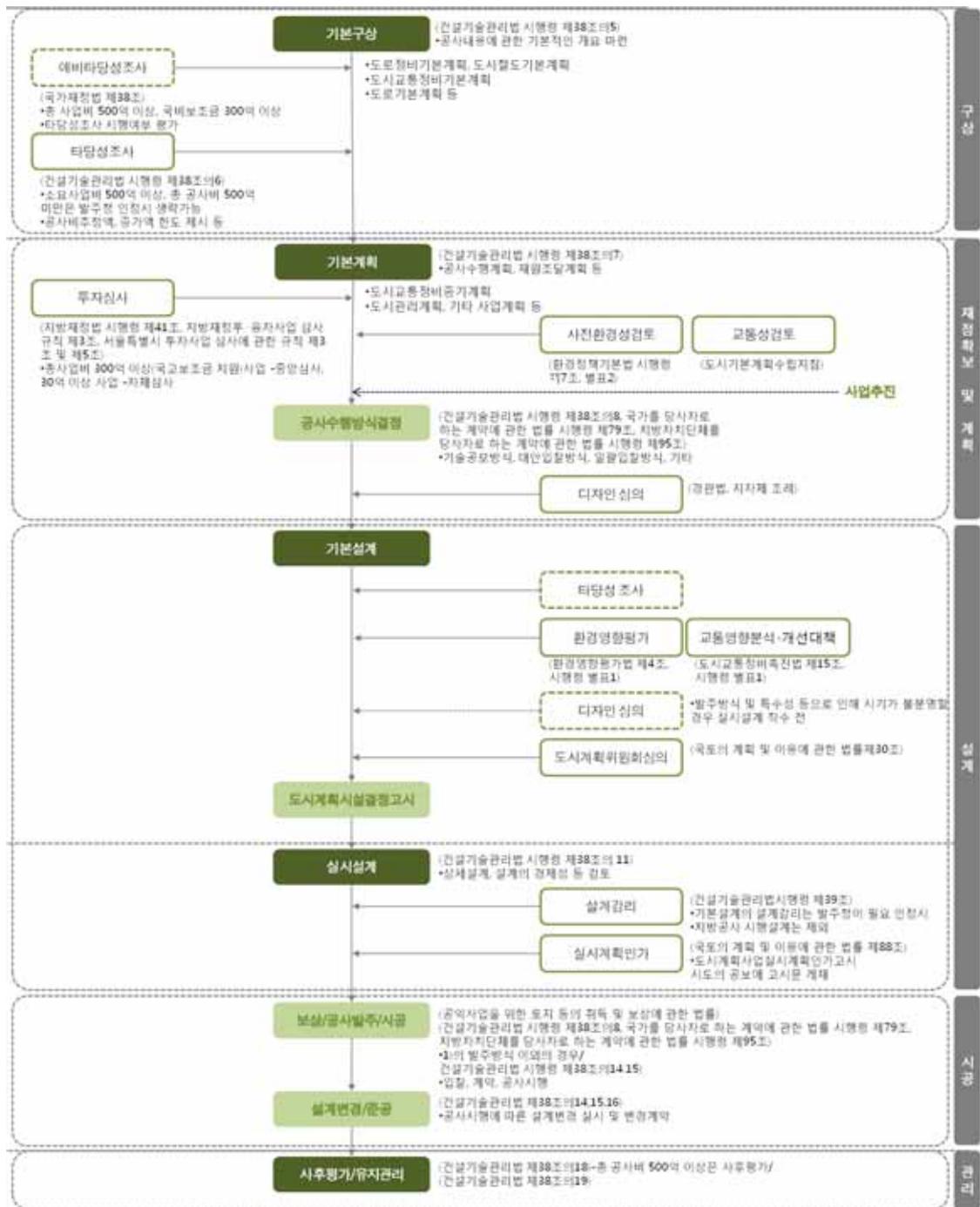
, 가 .



[5-30]
가 : Santiago Calatrava



[5-31]



[5-32]

3.

구분	기본방향	목표	세부전략 (계획 및 설계방향)	정책제안반영
공간 구조 부분	공공성 접근성 향상	수변공간 중심의 도시공간구조 재편	<ul style="list-style-type: none"> 도시성장축 설정개편 녹지축, 접근축 재편 	<ul style="list-style-type: none"> 도시기본계획 도시기본계획
		수변공간 중심의 공공공간 배치	<ul style="list-style-type: none"> 거점형 공공시설 및 공공공간 입지선정기준보완 지구단위계획 상 도시계획시설 중 공간시설과 공공문화체육시설의 수변공간 배치유도 공공공지 확보기준 보완으로 수변공간 공공성 확보 	<ul style="list-style-type: none"> 도시기본계획 지구단위계획 수립지침 건축법시행령 제27조의 2
		수변공간으로의 도로세계 재편	<ul style="list-style-type: none"> 제방과 도로를 연계한 보행자 네트워크 구축 	<ul style="list-style-type: none"> 지구단위계획
토지 이용 부분	복합성 연계성 유도	복합적 토지이용	<ul style="list-style-type: none"> 수변지구 도입 수변공간에 특별계획지구 지정 	<ul style="list-style-type: none"> 국토법 국토법, 지구단위계획
		하천과 도시공간 연계형 토지이용	<ul style="list-style-type: none"> 통합계획 수립 계획프로세스 연계 · 통합에 의한 	<ul style="list-style-type: none"> 계획프로세스 수정(도시 계획, 경관계획, 하천계획) 생태하천 조성을 위한 계획설계요령
경관 및 건축 · 시설 부분	통일성 다양성 정체성 추구	수변공간 중심의 랜드마크, 경관조망점, 경관계획 수립	<ul style="list-style-type: none"> 수변경관지구 신설제안 수변경관계획 수립방향 개정 건축디자인기준(국토환경디자인기준)에 수변거점 계획 방향 제시 수변공간 낱방 일차형 아파트의 폐쇄성을 완화하기 위한 기준 제시 	<ul style="list-style-type: none"> 국토법 경관법 건축기본법 건축기본법
		수변공간의 장소성 회복	<ul style="list-style-type: none"> 역사문화환경을 가진 수변공간에 대한 지구단위 관리제도 도입 	<ul style="list-style-type: none"> 문화재보호법
생태 환경 및 기반 시설 부분	친환경성 친근성 도모	친환경 생태하천조성으로 방향유도	<ul style="list-style-type: none"> 원경시 수피제방 도입 제방의 접근성 강화 	<ul style="list-style-type: none"> 도시계획시설 사업 도시계획시설 사업
		수변 SOC시설 디자인의 친근성 강화	<ul style="list-style-type: none"> 댐 및 교량, 제방 디자인 평가기준 도입 	<ul style="list-style-type: none"> 도시계획시설 사업

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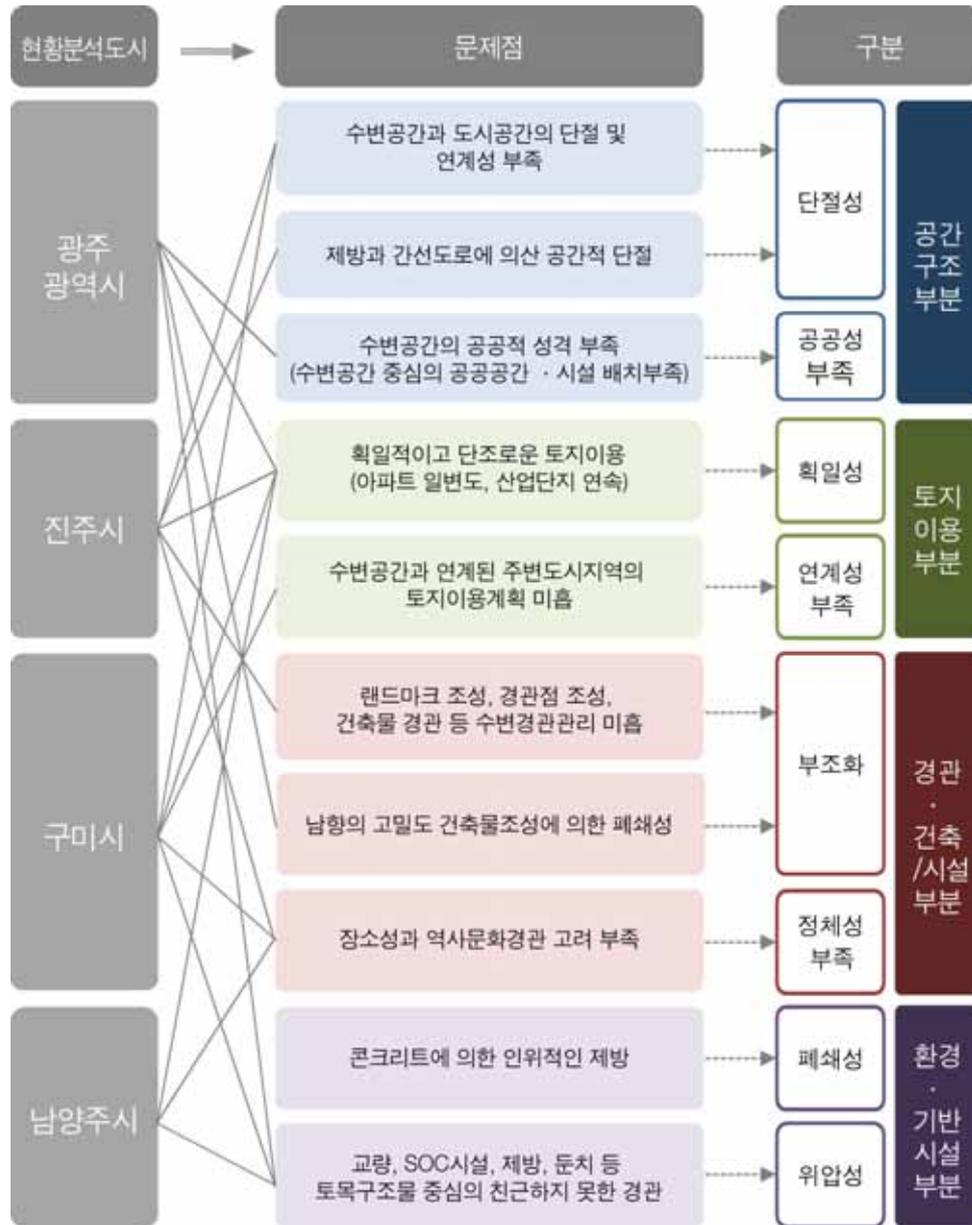
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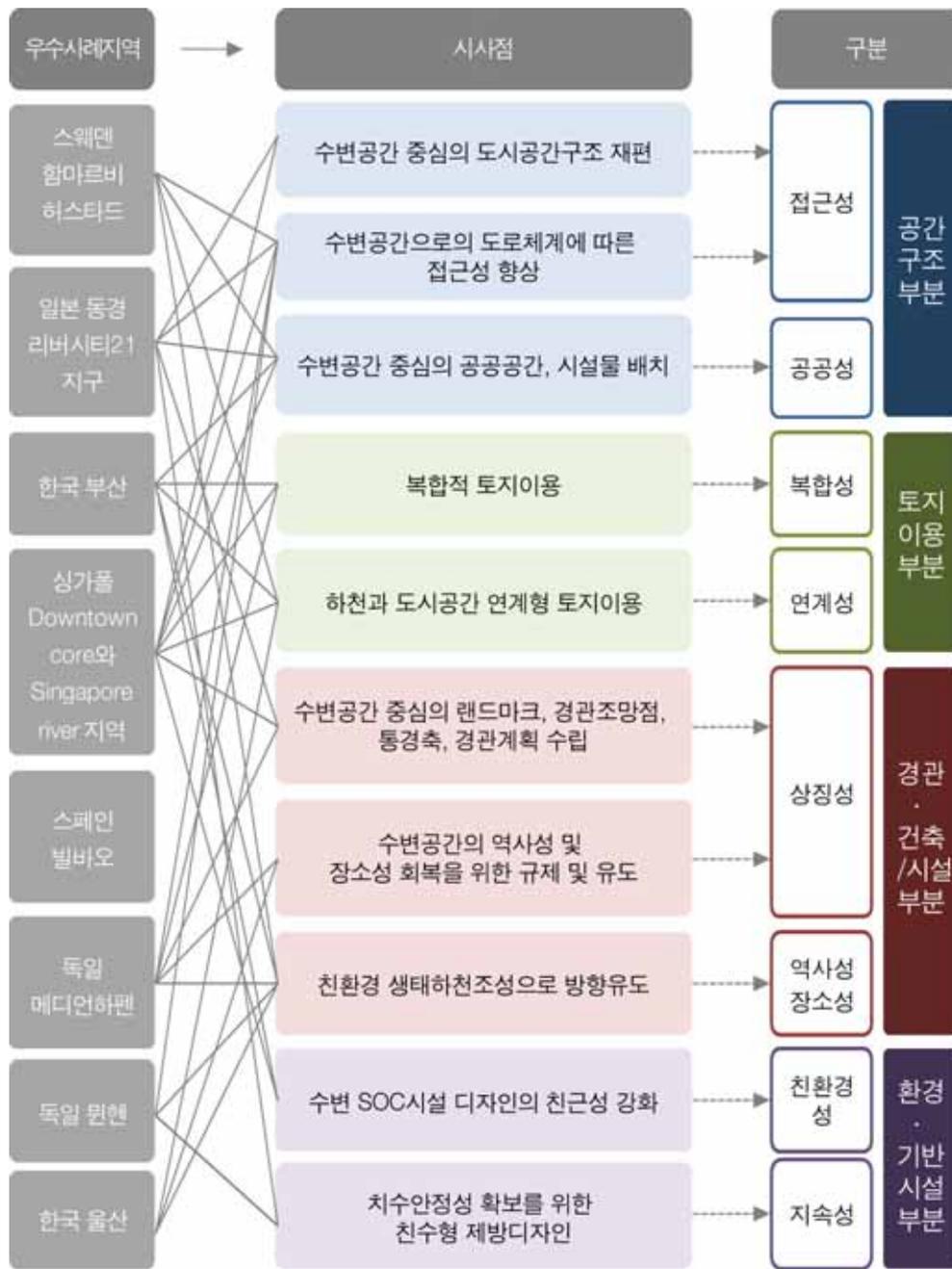
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구분	기본방향	목표	세부전략 (계획 및 설계방향)	정책제안반영
공간구조 부분	공공성 접근성 향상	수변공간 중심의 도시공간구조 재편	<ul style="list-style-type: none"> • 도시성장축 설정개편 • 녹지축, 접근축 재편 	<ul style="list-style-type: none"> • 도시기본계획 • 도시기본계획
		수변공간 중심의 공공공간 배치	<ul style="list-style-type: none"> • 거점형 공공시설 및 공공공간 입지선정기준보완 • 지구단위계획 상 도시계획시설 중 공간시설과 공공문화체육시설의 수변공간 배치유도 • 공개공지 확보기준 보완으로 수변공간 공공성 확보 	<ul style="list-style-type: none"> • 도시기본계획 • 지구단위계획 수립지침 • 건축법시행령 제27조의 2
		수변공간으로의 도로체계 재편	<ul style="list-style-type: none"> • 제방과 도로를 연계한 보행자 네트워크 구축 	<ul style="list-style-type: none"> • 지구단위계획
토지 이용 부분	복합성 연계성 유도	복합적 토지이용	<ul style="list-style-type: none"> • 수변지구 도입 • 수변공간에 특별계획지구 지정 	<ul style="list-style-type: none"> • 국토법 • 국토법, 지구단위계획
		하천과 도시공간 연계형 토지이용	<ul style="list-style-type: none"> • 통합계획 수립 • 계획프로세스 연계·통합에 의한 	<ul style="list-style-type: none"> • 계획프로세스 수정(도시 계획, 경관계획, 하천계획) • 생태하천 조성을 위한 계획설계요령
경관 및 건축 · 시설 부분	통일성 다양성 정체성 추구	수변공간 중심의 랜드마크, 경관조망점, 경관계획 수립	<ul style="list-style-type: none"> • 수변경관지구 신설제안 • 수변경관계획 수립방향 개정 • 건축디자인기준(국토환경디자인기준)에 수변거점 계획 방향 제시 • 수변공간 남향 일자형 아파트의 폐쇄성을 완화하기 위한 기준 제시 	<ul style="list-style-type: none"> • 국토법 • 경관법 • 건축기본법 • 건축기본법
		수변공간의 장소성 회복	<ul style="list-style-type: none"> • 역사문화환경을 가진 수변공간에 대한 지구단위 관리제도 도입 	<ul style="list-style-type: none"> • 문화재보호법
생태 환경 및 기반 시설 부분	친환경성 친근성 도모	친환경 생태하천조성 으로 방향유도	<ul style="list-style-type: none"> • 완경사 수피제방 도입 • 제방의 접근성 강화 	<ul style="list-style-type: none"> • 도시계획시설 사업 • 도시계획시설 사업
		수변 SOC시설 디자인의 친근성 강화	<ul style="list-style-type: none"> • 댐 및 교량, 제방 디자인 평가기준 도입 	<ul style="list-style-type: none"> • 도시계획시설 사업

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	정책목표	주요연구과제
2010년	기본방향제시	<ul style="list-style-type: none"> 이론적 배경과 우수사례분석을 통한 정책방향제시
2011년	도시재생전략과 디자인기준	<ul style="list-style-type: none"> 수변공간 중심의 도시재생전략 이에 대응하는 수변공간의 경관관리방안
2012년	기타 세부전략	<ul style="list-style-type: none"> 하천주변 일상정주환경의 디자인 개선요구 제도개선연구(조형변경) 해안도시와 지역의 경관관리전략 내륙의 도시지역과 비도시지역의 통합경관관리 도시내 비류형 수변공간의 이용형 계획방향

[6-5]

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A Study on the Urban Planning and Urban Design Principles on Riverfront

Kwon, Young-Sang
Cho, Min-sun

Chapter 1. Introduction

In Korea, many of historically important cities have been developed related with rivers. And the area formed around riverside is the most typical public space that has played its pivotal role in buildup city and culture, has had an effect on citizen's everyday lives.

However after modernization, riverfront has been developed rapidly to maximize land efficiency and development value. As a result, high density apartment and office buildings have been built, but they were only for the owner's not for citizen who just can see the riverside from far away.

Moreover the recent social changes such as urban model towards the low carbon green growth, the reactions for the climate change at the urban level and the requirements for improvement of the quality of life following the economic growth need the new paradigm about the value of river and riverfront in the urban space. Therefore the value of riverfront in the urban space has to be reconsidered and the keynote of plan needs to be established again.

So this study aim at suggesting the value of riverfront, requisites for the good riverfront, and also the detail plan and design direction for actualization.

This study covers defining of the riverfront and analyzing the issues and implications of 12 cities in Korea and overseas. The case study got the result through map research, GIS analysis, fieldwork, and interview.

The existing related studies just focused on the river space or urban space,

or the simple introduce of oversea's case, so they are short of the policy aim and barometer that riverfront needed as a public space in the city, and concerning as big urban plan or design for the urban reformation focused on the riverfront. This is the first study that suggest the so-called ' river-nomics' which concerns riverfront as a new power of reforming urban space. Therefore it has meaning that suggest the basic direction of the following study about setting the action strategy such as landscape, space structure, land use for riverfront.

Chapter 2. Theoretical consideration and the type of riverfront

In the urban space, the value of the riverfront is offering 1) large scale public space, 2) naturally comfortable circumstances and beautiful landscape, 3) the linear direction in the urban space, 4) ecologically sustainable environment 5) the historical meaning based on the persistence of riverfront.

And riverfront has been existing as the following 4 ways. 1) as a daily residential space, 2) commercial business space and historic cultural space, 3) industrial space or creative culture industrial space in the age of industrialization, 4) riverside nature environment conservative space or used for leisure space.

Then, why does the discussion about riverfront come out at this point? the first reason is the increasing interest about urban space that human and nature coexisting. The second one is the high requirements of comfortable riverfront as increasing of income level and the interest about tourism, leisure, and health. The third one is the needs for public place as people having higher sense of citizenship. The last one is that the riverfront is coming to the fore as an alternative position to find new growth energy, because of the decline of existing use of riverfront as getting into the age of post-industrialization.

Chapter 3. The status and issues of riverfront

To analyze the current status and issues, 4 cities including Gwangju metropolitan city(Gwanju river), Jinju city(Nam river), Gumi city(Nakdong river), Namyangju city(Han river) has chosen concerning the use of riverfront, scale of the

city, the scale and character of close river.

Compiling the case study, the issues in each aspects of space structure, land-use, landscape and buildings· facilities, environment and infrastructure could be briefed as follows. First of all, the submitted issues in the aspect of space structure were, disconnection and not enough relationship between waterfront and urban space, disconnection of space caused by bank and highway, short of public space and facilities. The issues in the aspect of land-use were undifferentiated and simple land-use planning and the pattern of land-use planning unlinked to around urban area. The issues in the aspect of developing landscape and buildings· facilities were short of waterfront landmark, view points and managing landscape of building, problem with setting the landscape axis, furthermore, closed landscape caused by south-facing high density residential buildings, realization of the sense of place of connatural waterfront space, the matter of systematic using of historical and cultural landscape. The issue in the aspect of environment and infra structure was briefed as coercive design of bank and facilities.

Chapter 4. The good cases of waterfront and implications

In this chapter, we analyzed 8 example cities selected in base domestic or oversea's on the chapter 3's analysis frame of riverfront categorized by land-use, then analyzed the well planned examples and the elements for the success.

The results of the analysis is as follows. First of all in the aspect of urban space structure, the urban space structure needs to be reorganized focused on the riverfront or the direction of high accessibility to the riverside through supplement of road system, collocating public space on riverside or have to concern site selection of urban planning facilities such as buildings and facilities for citizen.

In the aspect of land-use, activated riverfront can be made as composing the land-use of riverside complex and linking the river and urban space. Also in the aspect of landscape and building· facilities, collocating some landmark or landscape viewpoints, landscape axis, and managing the landscape focused on the riverfront, Inducing and control for the restoration of connatural sense of place of riverfront. Last of all in the aspect of environment and infra structure, as changing artificial

river to natural eco-friendly river, securing citizen's utilizing and sustainability. And implying integrative planning system for implying design has friendliness to the SOC facilities like bridge and bank and hydrophilic.

Chapter 5. Urban planning and Urban design principles for riverfront

The last suggestion of the urban planning and design direction of riverside was categorized 4 kinds roughly, then suggested basic direction, detail strategy, and improving direction of related law.

First of all in the space structure part, suggested the direction of reorganizing contents of the urban basic plan like urban growth-axis, green-axis, access-axis as focusing on the riverfront. Also suggested the induction of urban planning facilities' collocation, supplement of public open space ensuring criteria through build up core-type public space, supplement of public space site selection criteria, district-level plan. last of all, suggest to build up pedestrian network which connecting riverside bank to road. In the second land-use part, suggested complex land-use, to realize this, suggested introduction of riverside district or set special planning district in riverfront. For the river-urban space linked land-use, suggested connection of planning process for establishing integral plan. in the third landscape, building and facility part, suggested direction for the complementation of riverside-landscape district, riverside-landscape plan, including the riverside core planning direction in the architect design criteria, controlling the collocation of box-shaped apartment around riverside. Moreover, suggested the direction of system introduction which managing the riverfront has historic, cultural environment as a district. In the forth eco-friendly environment and infra structure, inducing the direction of eco-friendly river creation, suggesting change to low-slope super bank. And also about riverside SOC facilities like dam, bridge, bank, suggesting introduction of design criteria in the process of urban planning facility business, and the process direction for the managing.

Chapter 6. Result

The recent topics such as population decline, changes in the urban space like

decline of downtown area, reorganization of industrial system cause high interest in riverfront. Also participation of residents in river related project and some local government lead riverside remodeling project offers changing points for our urban space.

Thus, this study suggests the basic direction and detailed strategy through the case study to represent the urban planning and design direction and requisites for making good riverfront that meets social and political requirements and changes. Also, in this study suggests the new concept of 'riverside district' for activation of the riverfront and organized control, and moreover suggests other related plan guidelines and a direction for improvement of system, especially the form of 'riverfront governance' that connecting the resident, expert, and the five departments related with river.

Afterwards, the detail action strategy about the basic direction in categories; the space structure, land-use, landscape, buildings and facilities, environment and infrastructure that represented in this study will be externalize through the follow-up study. Especially the category of landscape, buildings and facilities has to be the priority cause it effects all over the space structure, land-use, environment and SOC facilities like a bridge, and need to concern the social interests about environment.

the riverfront has been developed related on the city space in history. The riverfront that has been far apart from city space after industrialization will be the new power for city growth again, and this study will be the cause of leading new age's paradigm. so this study has a meaning in that point.

the age of 'river-nomics' is coming. We hope that this study helps the city restructuring and activating of the riverfront through connecting study of related system with planning. Moreover hope the contents of this study to be materialized and become guideline and policy.

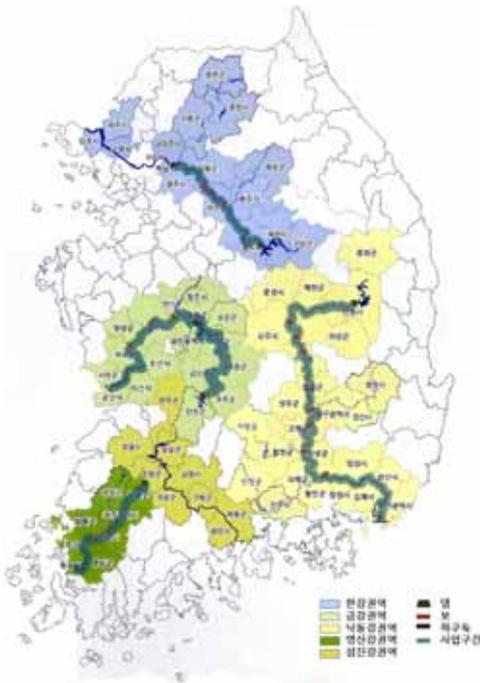
Key words : riverfront, urban design, urban planning, urban regeneration, river-nomics

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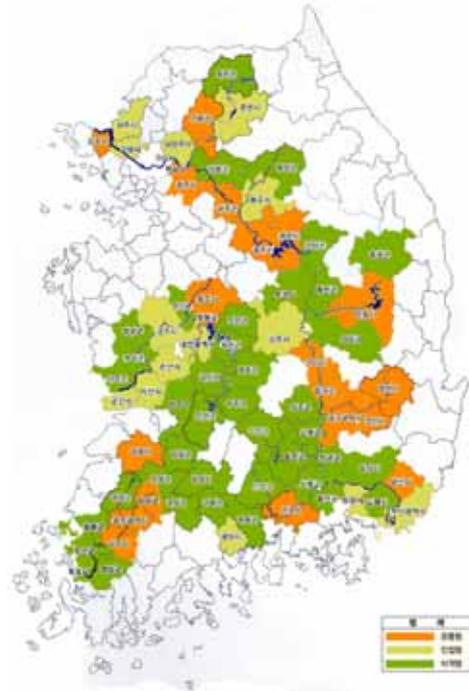
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1		0.1km	-	780.10km ² (5%)	31,929
2		8.2km	0.4km()	884.04km ² (6%)	135,738
3		1.5km	1.5km()	983.89km ² (10%)	206,372
4		19.7km	7.8km()	867.23km ² (10%)	303,975
5		0.1km	-	607.86km ² (4%)	107,355
6		35.8km	3.8km() 0.4km()	972.48km ² (1%)	43,678
7		0.1km	-	877.00km ² (5%)	89,812
8		9.2km	0.2km()	430.96km ² (40%)	234,777
9		2.3km	1.9km()	46.36km ² (50%)	505,867
10		1.5km	0.1km()	93.07km ² (100%)	143,638
11		2.3km	2.0km()	33.29km ² (100%)	195,874
12	가	1.2km ()	0.7km(가)	843.45km ² (10%)	54,861
13		1.4km ()	-	1,116.35km ² (30%)	254,999
14		0.1km ()	0.2km()	909.09km ² (1%)	23,732
15		5.5km	-	267.24km ² (73%)	938,831
16		2.8km	1.0km()	276.59km ² (31%)	207,229
17		8.1km	1.3km()	672.42km ² (9%)	261,770

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				()	()
1		14.9km	0.5km()	1,201.00km ² (1%)	32,327
2		1.1km	-	1,519.76km ² (5%)	169,436
3		12.4km	0.3km()	660.69km ² (2%)	45,932
4		7.9km	0.4km()	1,175.99km ² (3%)	56,522
5		8.0km	2.2km()	912.08km ² (4%)	70,813
6		6.8km	1.5km()	1,254.85km ² (4%)	105,600
7		2.9km	0.8km()	616.25km ² (32%)	381,583
8		0.5km	-	451.01km ² (33%)	107,684
9		10.2km	0.4km()	616.19km ² (1%)	39,348
10		12.3km	0.6km()	883.85km ² (89%)	2,456,016
11		23km	3.3km() 0.9km()	411.82km ² (25%)	240,371
12		43km	0.4km()	901.92km ² (6%)	103,289
13		8.3km	1.2km(가)	384.04km ² (8%)	30,448
14		16.5km	0.5km()	983.37km ² (2%)	47,651
15		40km	0.3km()	804.14km ² (4%)	60,524
16		8.0km	0.3km(가)	533.09km ² (9%)	57,382
17		16km	2.9km() 0.6km()	482.93km ² (3%)	27,495
18		12.8km	6.7km() 1.1km()	416.76km ² (8%)	54,093
19		38km	0.6km()	712.84km ² (39%)	336,355
20		45km	0.1km()	794.59km ² (1%)	32,358
21		25.9km	20.5km() 2.0km()	300.00km ² (63%)	499,414
22		14.7km	1.4km()	799.00km ² (7%)	105,651
23		2.7km	-	463.24km ² (57%)	428,893
24		5.7km	1km()	484.12km ² (62%)	215,845
25		7.7km	-	999.11km ² (95%)	3,512,547
※ (→) ,					가

[1-3]

				()	()
1		7.8km	0.2m()	789.07km ² (1%)	29,021
2		3.6km	0.1m()	631.45km ² (3%)	25,876
3		7.2km	0.7m() 2.6km()	576.29km ² (5%)	58,378
4		7.2km	0.4m() 0.7km()	844.99km ² (4%)	52,188
5		4.1km	0.5km()	537.17km ² (10%)	54,475
6		17.1km	1.5km()	539.70km ² (92%)	1,408,895
7		14.3km	0.5km()	548.51km ² (2%)	37,466
8		17.4km	0.4km() 5.9km()	814.23km ² (22%)	148,063
9		9.2km	0.9km() 1.4km()	361.84km ² (17%)	78,645
10		17.4km	0.4km() 5.9km()	153.52km ² (100%)	638,663
11		2.1km	-	940.73km ² (6%)	125,143
12		1.0km	-	624.49km ² (7%)	76,687
12		19km	0.9km()	479.63km ² (1%)	33,062
13		8.4km	2.4km()	554.83km ² (9%)	127,797
14		14.7km	4.1km()	507.01km ² (14%)	309,269
15		7.7km	0.8km()	372.56km ² (9%)	60,507
16		1.9km()	-	456.55km ² (45%)	263,845
※ (→) ,					가

[1-4]

				()	()
1		0.3km	-	455.00km ² (30%)	48,347
2		2.2km	0.1km()	501.28km ² (95%)	1,422,702
3		10.0km	0.7km()	518.50km ² (21%)	49,165
4		0.9km	-	604.04km ² (17%)	92,884
5		9.0km	0.3km()	426.07km ² (6%)	37,432
6		5.4km	1.0km()	495.75km ² (6%)	66,598
7		13.4km	0.7km() 1.3km()	587.13km ² (14%)	60,106
8		3.2km	-	112.49km ² (100%)	245,651
※ (→) ,					가

[1-5]

				()	()
1		23.9km	2.0km()	820.91km ² (18%)	83,651
2		6.9km	0.2()	597.03km ²	32,511
3		17.9km	0.8km()	692.80km ² (6%)	129,050
4		5.4km	0.1km()	495.68km ² (2%)	32,012
5		14.4km	0.6km()	752.80km ² (4%)	93,670
5		3.0km	0.5km()	547.44km ² (3%)	34,157
6		0.8km	-	443.20km ² (2%)	29,577
7		6.0km	-	497.65km ² (0.4%)	138,098
8		0.8km	-	675.27km ²	53,131
※ (→) ,					가

2. .

[1-6]

	/				
		<ul style="list-style-type: none"> • : 20 • : 5 • : 		<div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; width: 60px; height: 20px; margin-bottom: 5px;"></div>	<div style="border: 1px dashed black; padding: 2px;"> <p>- (,)</p> <p>- 가 ()</p> <p>- .</p> <p>- 가</p> </div>
		<ol style="list-style-type: none"> 1. . 2. . 3. . 4. . 5. . 6. . 7. 가 8. . 			

	<p>· ·)</p> <p>· · ·</p> <p>· (河道) (流況)</p> <p>7. ·</p> <p>8.</p> <p>9.</p>		
	<ul style="list-style-type: none"> • : • : • : <p>1.</p> <p>2.</p> <p>3.</p> <p>4.</p> <p>5.</p> <p>6.</p> <p>7.</p> <p>8.</p> <p>9.</p> <p>10.</p> <p>11.</p>	<p>가 : (</p> <p>가 :</p> <p>,</p> <p>:)</p>	<div style="border: 1px solid black; padding: 2px; text-align: center;">가</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">가</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">가</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">가</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">가</div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">가()</div>
가	<ul style="list-style-type: none"> • : 61 가 		
()			

		<ul style="list-style-type: none"> ● : 10 ● : ● , , , ● : 1. 2. 3. 4. 5. 6. 7. 8. 9. (代替水源) 10. 11. 12. 13. 14. 15. 16. 17. 		<div style="border: 1px solid black; height: 30px; width: 100%;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; height: 30px; width: 100%;"></div> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; height: 30px; width: 100%;"></div>
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	<ul style="list-style-type: none"> • : 5 • : (<li style="padding-left: 20px;">1km , <li style="padding-left: 20px;">: <li style="padding-left: 20px;">500m) • : 1. 2. 3. • : 1. 2. 가 3. (業) 가. • 4. 		<div style="text-align: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div> <div style="text-align: center;">↓</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin-right: 5px;"></div> <div style="border: 1px dashed black; width: 120px; height: 25px; margin-left: 5px;"></div> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center; margin: 0 auto;"> GIS EIS() </div> <div style="text-align: center;">↓</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin-right: 5px;"></div> <div style="border: 1px dashed black; width: 120px; height: 25px; margin-left: 5px; text-align: center;"> - / / - - </div> </div> <div style="text-align: center;">↓</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin-right: 5px;"></div> <div style="border: 1px dashed black; width: 120px; height: 25px; margin-left: 5px; text-align: center;"> -) (- / - / </div> </div> <div style="text-align: center;">↓</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin-right: 5px;"></div> <div style="border: 1px dashed black; width: 120px; height: 25px; margin-left: 5px;"></div> </div> <div style="text-align: center;">↓</div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; width: 60px; height: 25px; margin-right: 5px;"></div> <div style="border: 1px dashed black; width: 120px; height: 25px; margin-left: 5px;"></div> </div> </div> <p style="margin-top: 10px;">※ (2001)</p>
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	<ul style="list-style-type: none"> • • • 1. 2. 3. 4. 5. 6. 7. 8. 9. 2 8 10. 		<div style="border: 1px solid black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">()</div> <div style="border: 1px dashed black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;"> </div>
	<ul style="list-style-type: none"> • • 		<div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;">(가)</div> <div style="border: 1px dashed black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="border: 1px dashed black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">()</div> <div style="border: 1px dashed black; padding: 2px; text-align: center;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; text-align: center;"> </div>

	()	<ul style="list-style-type: none"> • • • <ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 		<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">()</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">..</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div>
/		<ul style="list-style-type: none"> • <ol style="list-style-type: none"> 1. 2. 3. 		<p>※ / (:) (, 2008)</p> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">) (</div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div> <div style="text-align: center;">↓</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;"></div>

2.

1. (Hudson River) :
2. (Thur River) :
3. (Liesing River) :

1. (Hudson River): 81)

1)

(New York)

2009 830 , 1,214km² , 1875 Frederick Law Olmsted가

Olmsted가

가

가

1937 ~ 1941

3

가

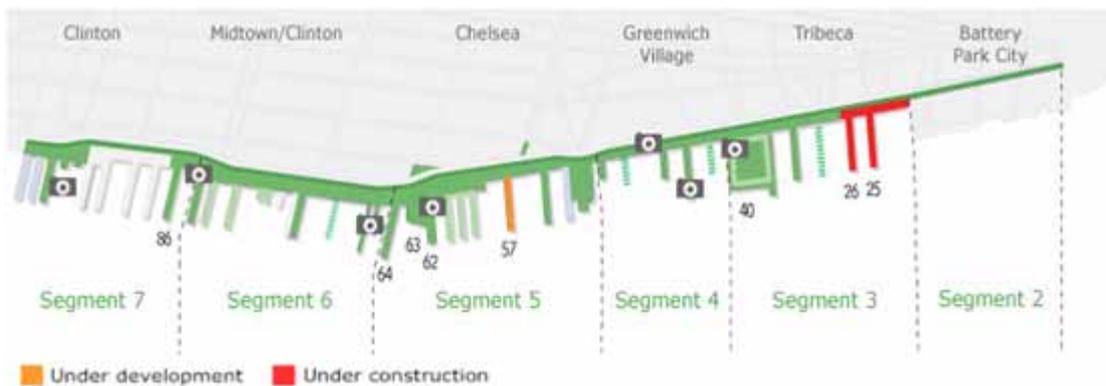


[2-1] 가

2008
 가 2100
 Tribeca 2008 , Chelsea 64 2009
 59 가 Battery 5 가
 가

(Hudson River Park Trust)

가, 가,
 2 3(Lower Manhattan
 and Tribeca) Sasaki Associates가 Mathews Nielsen
 4(Greenwich Village) Abel Bainnson Butz, 5(Chelsea) Michael Van
 Valkenburgh Associates, 6 7(Midtown and Clinton) Richard Dattner
 Architects/Miceli Kulik Williams



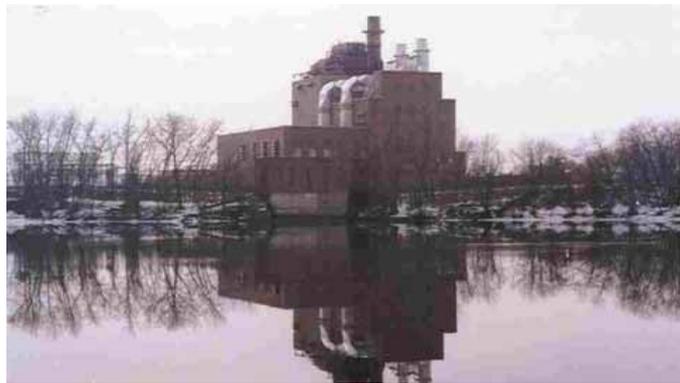
[2-2]

(Hudson River)

'Battery Park City
Draft Summary Report And
1979 Master Plan'

가

가



[2-4]

(Con Edison Steam Plant)

Con Edison Steam Plant



[2-5]

3)

12 2

60

2 •

303

가

(BPCA)' (1962)

$\frac{1}{3}$

가

가

72 가 158 가

4

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1991

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Riverside South Park

30

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305



[2-6]

1



[2-7]

2

가 가 , 가
 가 가 가 가 가
 1985 59~72 가 6 3,656 1
 가 (152) , 가
 , 60~70 7600가 가 가
 가
 가
 . 1991 Municipal Art Society, Regional Plan
 Association 7 (Riverside
 South Plan Council, RSPC)



[2-8]

3

4)

가

(Battery Park

City Authority, BPCA)가



[2-9]

200

1855

Castle Garden

308

가



[2-10]

1625

, 1626

18

가

가

1788

. 1808

1811

West Battery

가

200

가

1815 Castle Clinton

1823

10

가

, 1853

1872

30

Castle Garden

가

. 1855

1890

, 8

가

, 1890 Castle Clinton

가

1896

1941

New York Aquarium

1940

1952

Brooklyn-Battery Tunnel

가

2

, 2

1955 Peter Minuit Plaza, 1963
 East Coast Memorial 가 , Castle Clinton 1950
 가 . 1982
 Harbor Park .

(Battery Park City Authority,
 BPCA)가 . 가
 , . , 가
 가 가 ,

: Battery Park Conservancy

Battery Park Conservancy가 . 2008
 8 82) . Battery Park Conservancy
 가 , 가 .

82) 7 2,726,974 , 1,769,961 , 1,013,852 , 1,563,817
 가 5 , 947,244 가 .



[2-11]

2. (Thur River): 83)

1)

(Thurgau) (Zuerich) 125km, (St. Gallen), 가
1,695km² .

19

가

가 가

19 (1849, 1852, 1876) 1874 20 (1895

) 가

. 20

가 .

1965 1977 , 1978 19

, 1978

(Frauenfelder Allmend)

1979 TRP79 가 ,

1983 10

(Frauenfeld) (Zuercher Schwelle)

84)

1990 TRP79(1)

1990 2 , , ,

83) ()

84) 1 , , ,



[2-12]
(: www.thur.tg.ch)



[2-13] () () (Schaeffaulli)
(: www.thur.tg.ch)

2)

1980 1 (TRP79)

가

가 , 가 가

100 가 . 가

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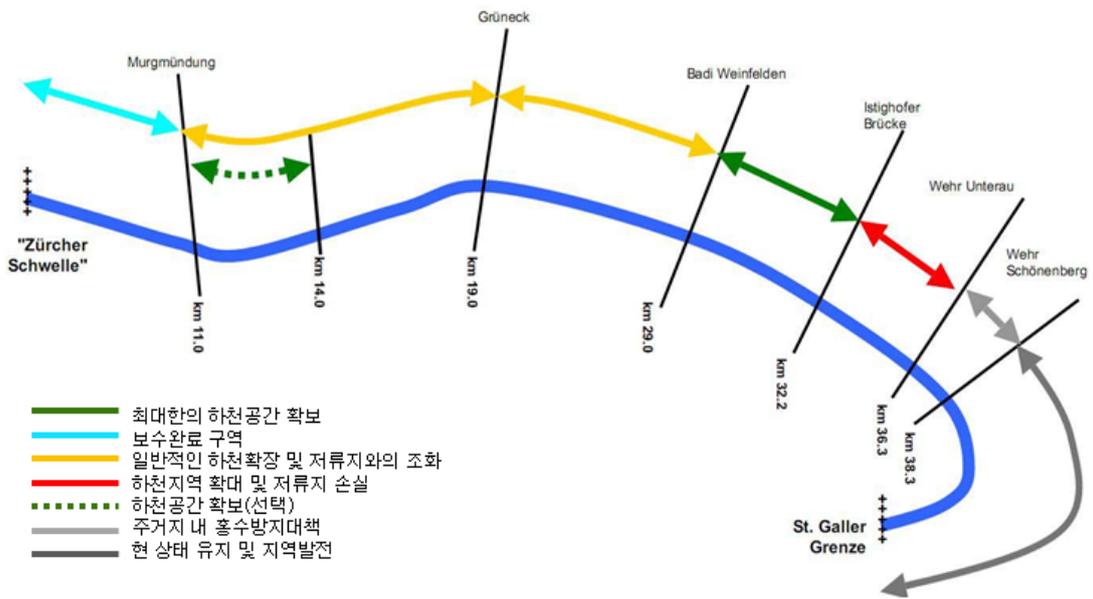
1 1990 2

가

가

2 9 9

30~40 2070 2



[2-14]
(: www.thur.tg.ch)

9

가

가

가



[2-15] (: , 2009, 4) (Graynes)



[2-16] (: , 2009, 4) () ()

3)

3. (Liesing River): 85)

1) (district) 23
 km , (Niederösterreich) (Wienerwald)
 (Schwechat)
 23 , .



[2-17]

가 , 가 가
 가 .
 19 2
 가 (Atzgersdorf)
 19 20 ,

85) ()

. 1966

가 , 15



[2-18]
(: en.wikipedia.org)
(Inzersdorf)

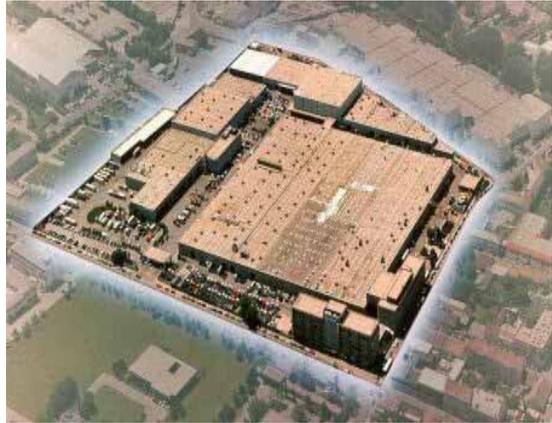
. 19

가

300,000 m²

MAN

가



[2-19] MAN
(: en.wikipedia.org)

2

가

가



[2-20]
(: en.wikipedia.org)



[2-21] 가
(: en.wikipedia.org)

1947 1969

가

1990



[2-22]
(: , 2009, 4)



[2-23]
(: , 2009, 4)

5.5km
Management Dept.)

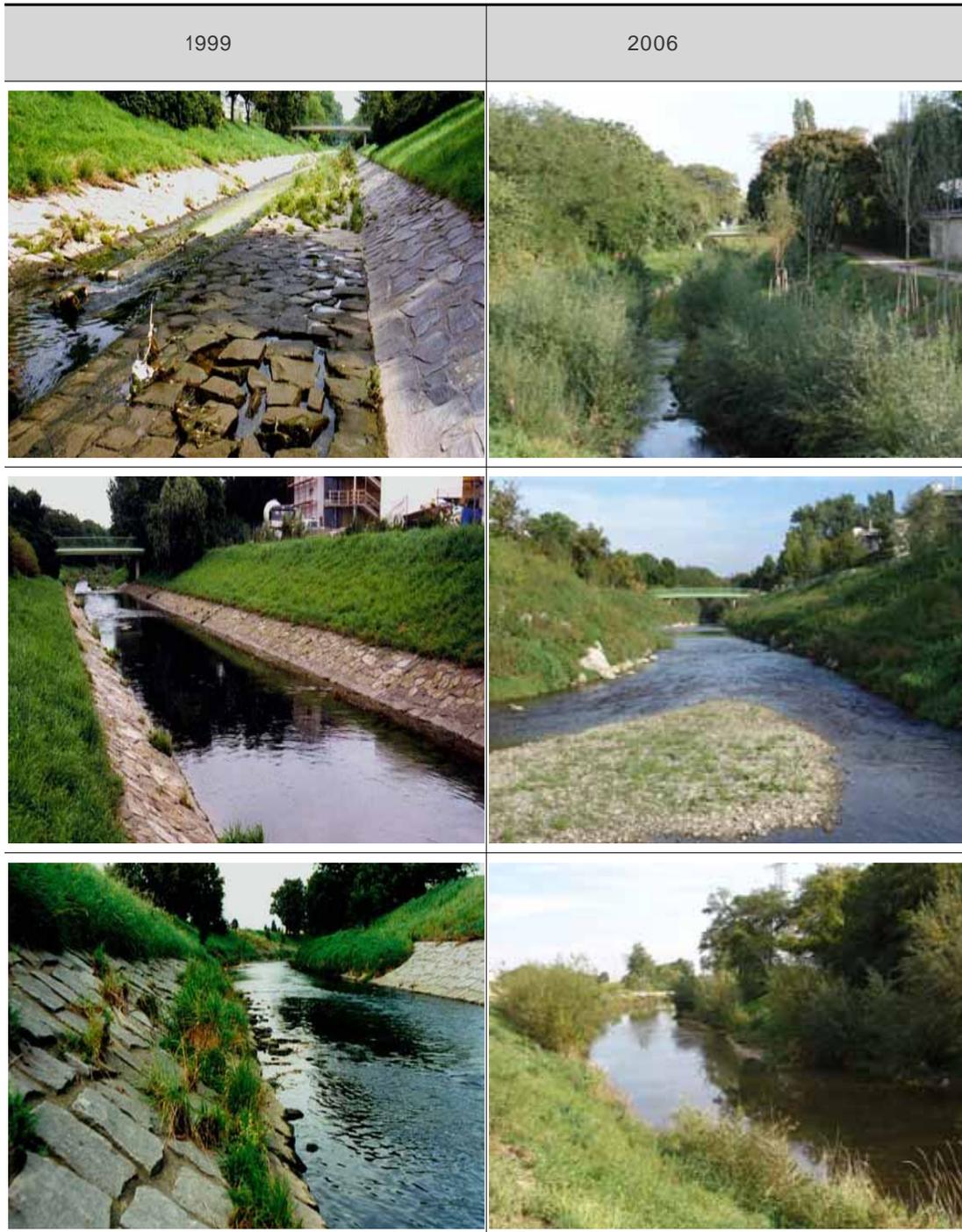
(Wastewater Management Dept.)

(Water

가 .
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, 10km ,
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, 2 , 4
, 가
, 2006 86) 가 .

86) Nasturtium officinalis , Artemisia austriaca , Tulipa silvestris

[3-1] .



* : , 2009, 4



[2-25]
(: , 2009, 4)



[2-26]
(: , 2009, 4)



[2-27]
(: , 2009, 4)



[2-28]
(: , 2009, 4)



[2-29]
(: , 2009, 4)



3)

