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GIS-Portal & Site Selection Analysis System



KAOS-G

MAPR

2022.11

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**Key Features
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Analysis System**



I. GIS Portal

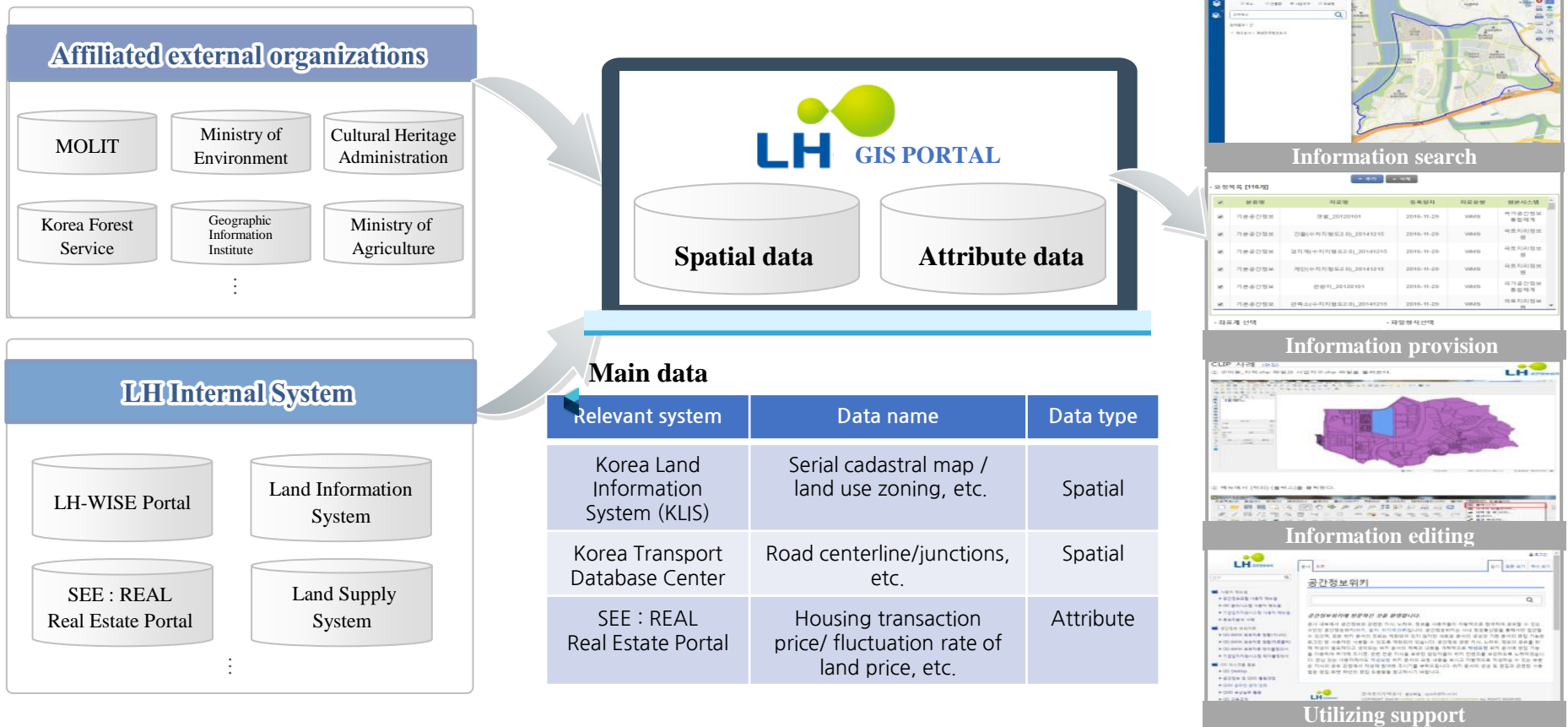
1. Definition
2. Implementation Status
3. Key Features



1. Definition

1. What is GIS portal?

- GIS portal provides customized information which is needed for users by systematically storing and managing national spatial and attribute data



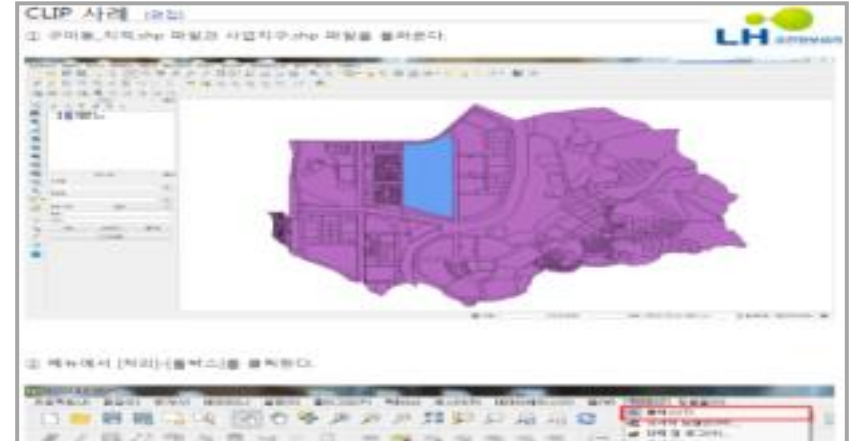
2. Implementation Status

Year	Project milestones
'05.09	ALLIS1) Stage 1 (Spatial information, residential land development)
'06.08	Established Spatial Data Warehouse (SDW)
'07.10	Established Spatial Information Knowledge System (SPINKS)
'08.10	Improved functionalities of SPINKS and established DB
'08.12	ALLIS Stage 2 (Urban regeneration, housing welfare, etc.)
'10.07	Operating spatial information system and established DB
'10.08	Established stage 1 system for SDW sophistication
'11.05	Integrated internal spatial information system
'12	Integration maintenance services (System improvement and spatial DB established)
'12.09	ALLIS & SPINKS integrated (Development – 290 mil, equipment – 240 mil) - A part of “services for sophistication of spatial information system”
'16.04 ~	System sophistication (Cloud/open source-based re-development)
'17.02 ~	System operation and maintenance

3. Key Features



Information Search (thematic maps, etc.)



Information Editing (Use GIS tools)

요청목록 [116개]

번호	분류명	자료명	등록일자	자료유형	영문시스템
1	기본공간정보	경본_20120101	2016-11-29	WMS	국가공간정보 통합체계
2	기본공간정보	건물(수치지형도2.0)_20141215	2016-11-29	WMS	국토지리정보 원
3	기본공간정보	경지계(수치지형도2.0)_20141215	2016-11-29	WMS	국토지리정보 원
4	기본공간정보	계단(수치지형도2.0)_20141215	2016-11-29	WMS	국토지리정보 원
5	기본공간정보	관망지_20120101	2016-11-29	WMS	국가공간정보 통합체계
6	기본공간정보	관측소(수치지형도2.0)_20141215	2016-11-29	WMS	국토지리정보 원

Information Provision (Spatial and attribute)



Utilizing Support (Spatial Information WIKI)



II. Key Features of GIS Portal

1. Collect DB
2. Store & Manage DB
3. Utilize DB
4. Case of Application : Construction Project



1. Collect DB

1. DB List

LH-WISE Portal	User information, department information, etc.
SEE : REAL Real Estate Portal	Land register, building register, fluctuation rate of land price, APT transaction price, etc.
Land Information System	Residential land development district, industrial complex, urban development zone, land use planning, etc.
Land Supply System	Lot sales information, land bank support, etc.
National Spatial Data Infrastructure Portal	Serial cadastral map, administrative boundaries, new address information, land register, land features, land use planning confirmation, land value by public announcement, national and public property status, integrated information on building, etc.
EGIS	Land cover map, etc.
Korea Industrial Complex Co.	Status of registered plants, etc.
Green Belt System	Green belt, etc.
Environmental Information	Natural ecology map, etc.
K-water	Water quality, rivers, etc.
Cultural Heritage GIS System	Thematic map on cultural heritage, distribution map of buried cultural heritage, etc.
Korea Forest Service	Forest land information map, etc.
RGIS	Farmland information map, etc.

2. Store & Manage DB

1. Utilizing Spatial Information DB

< Basic Spatial Information >

Information	Description
Classification	Basic spatial information / Digital map
Data name	Observatory_digital map 2.0 / N3P_C0260000
Renewed cycle	Frequently
Spatial representation type	Point
Original data stored by	National Geographic Information Institute

< Land Information>

Information	Description
Classification	Land information / Land features
Data name	Land register / ABPM_LAND_FRST_LEDG
Renewed cycle	Every month
Spatial representation type	Table
Original data stored by	MOLIT (National Geographic Information System)

< Building & Housing Information >

Information	Description
Classification	Building & housing information / Integrated building information
Data name	Integrated building information / CBA_BULD_BC
Renewed cycle	Every month
Spatial representation type	Area
Original data stored by	National Spatial Data Infrastructure

< Real Estate Market Information >

Information	Description
Classification	Real estate market information / APT-Trade
Data name	APT trade (accumulative) / PTAPMTKAB_APT_DJ_OBJ_NEW
Renewed cycle	Frequently
Spatial representation type	Table
Original data stored by	MOLIT (National Geographic Information System)

2. Store & Manage DB

2. GIS-BANK

- Can be understood as [GIS] + [BANK], manages meta-data
- Basic spatial information
- Land information
- Housing information
- Real estate market information
- National urban planning information
- Environmental information
- Cultural heritage information



데이터 종류
기타공법상제한사항 (112)
수지지형도 (106)
연안관리정보 (43)
연안통합지도 (37)
자연-생태 (20)
용도지역지구구역 (19)
산지정보기타 (18)
수질 (17)
수자원-해양정보기타 (15)
문화재지리정보 (13)
더 많은 데이터 종류 보여주기

651개 데이터셋을 찾았습니다

정렬 최근 수정일

국토계획_도시지역

국토의계획및이용법에 의거 지정된 국토계획/도시지역_연속지적도기반 이 공간데이터는 국토해양부에서 제공하는 자료로써 용도지역지구를 법률 및 법률명칭에 따라 주제도를 생성하여 제공하는 자료임.세부내용으로는...

WMS

새주소도로구간

도로명주소 체계의 건물

CSV
WMS

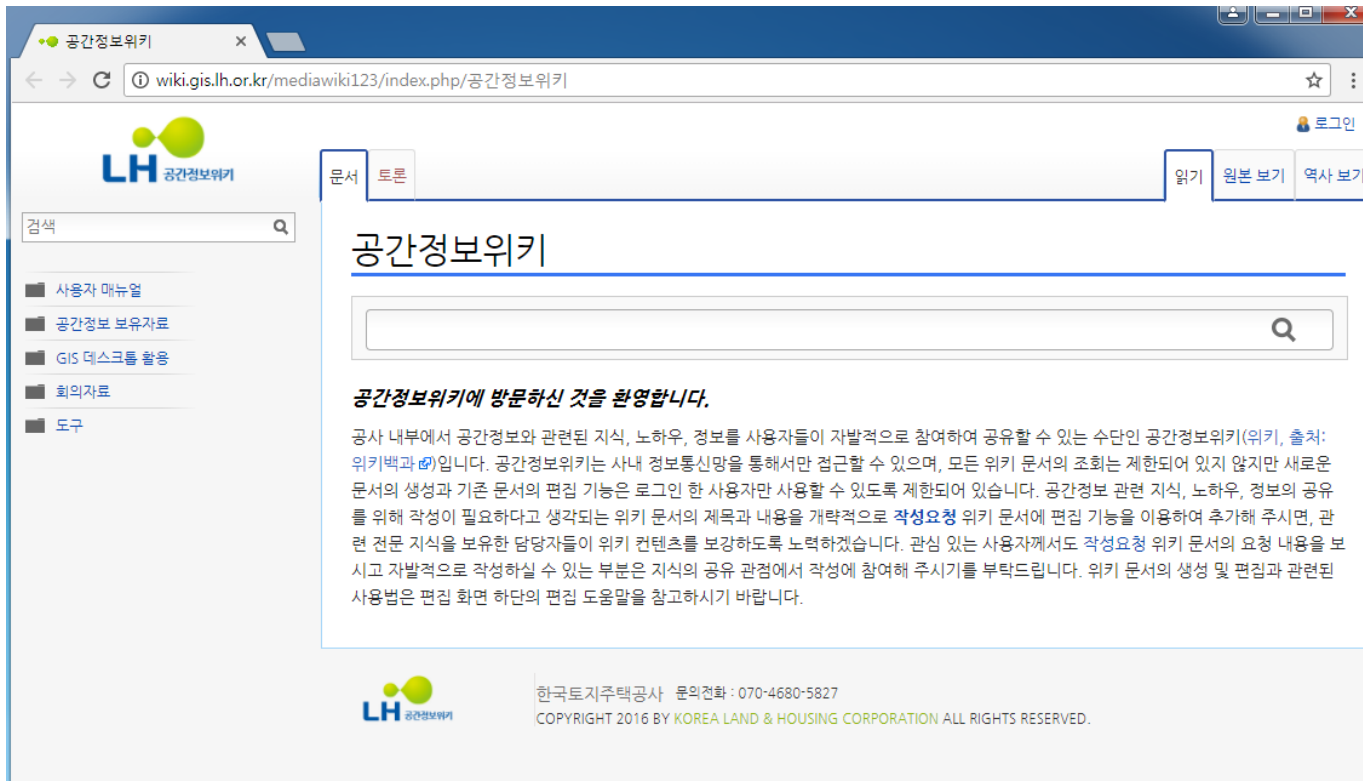
건축_용도지역

건축법에 의거 지정된 건축/용도지역_연속지적도기반 이 공간데이터는 국토해양부에서 제공하는 자료로써 용도지역

3. Utilize DB

1. Information search

- **Search any information needed from user manual, spatial information data stored, GIS desktop utilization, meeting materials, tools, etc.**



3. Utilize DB

2. Information download

- **Select an area (administrative area, business district, user area) and a target (thematic map, data name) to download the needed information**

1 단계
자료명은 영역을 선택해 주세요

2 단계
원하시는 대상을 선택 후 추가버튼을 통해 요청대상 목록에 추가해 주세요

3 단계
요청대상목록 및 좌표계 확인 후 자료요청을 하시려면 자료 다운로드 페이지에서 다운로드 가능합니다.

분류명	자료명	등록일자	자료유형	원본시스템	
<input type="checkbox"/>	국토계획	골프장경계(08년구축)	2016.10.18	2016.10.18	ALLIS
<input type="checkbox"/>	국토계획	국토계획 국토계획/개발진흥지구	2016.10.18	2016.10.18	한국토지정보시스템(KLIS)
<input type="checkbox"/>	국토계획	국토계획 국토계획/경관지구	2016.10.18	2016.10.18	한국토지정보시스템(KLIS)
<input type="checkbox"/>	국토계획	국토계획 국토계획/고도지구	2016.10.18	2016.10.18	한국토지정보시스템(KLIS)
<input type="checkbox"/>	국토계획	국토계획 국토계획/공간시설	2016.10.18	2016.10.18	한국토지정보시스템(KLIS)

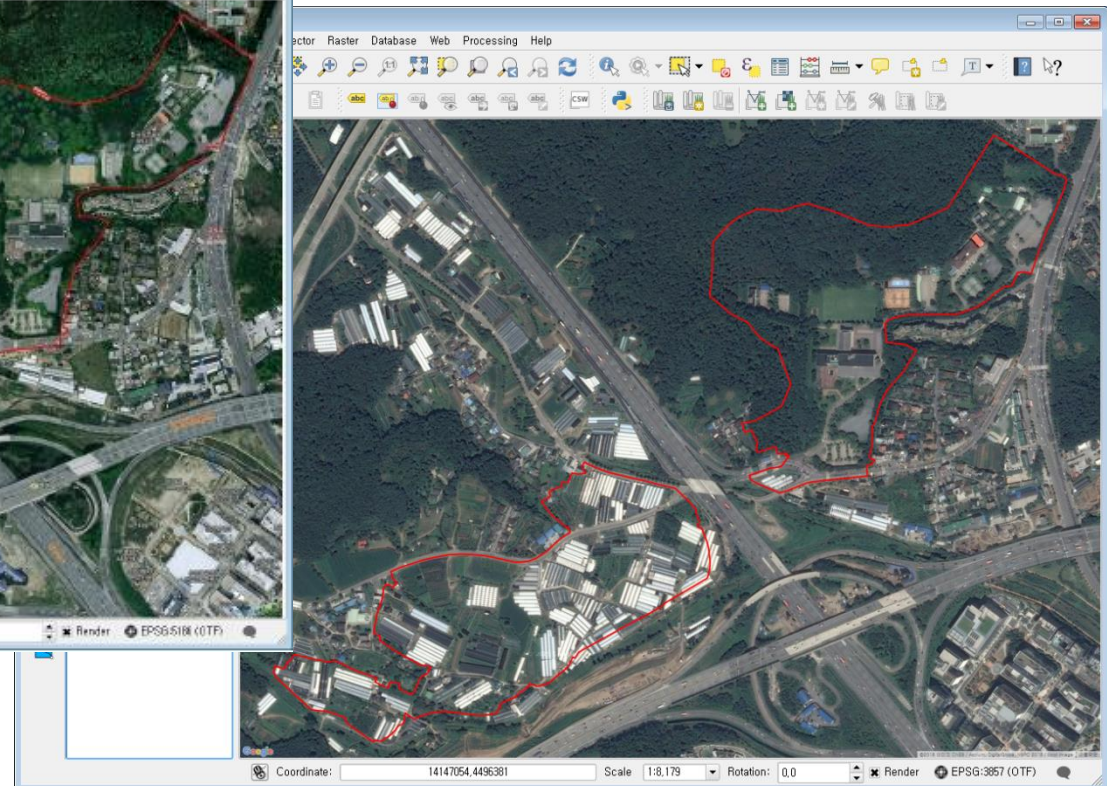
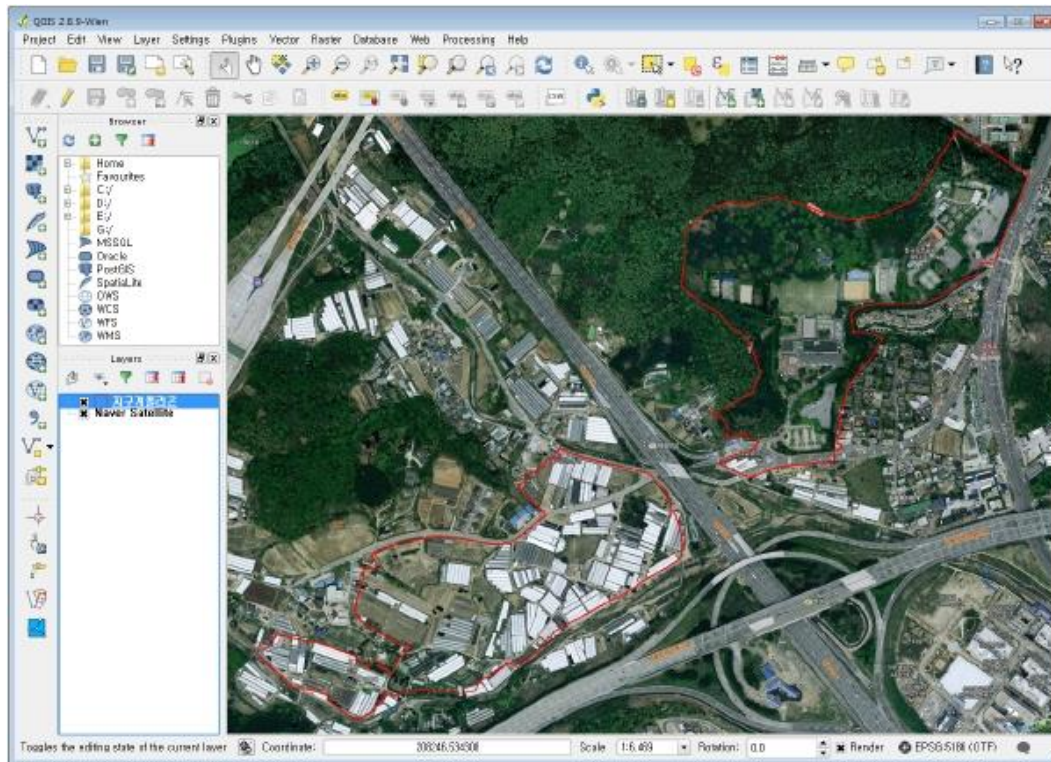
순번	대상지역	요청자료	좌표계	요청시간	생성시작시간	완료시간	상태	다운로드
1	[행정구역] 경기도 분당 구 구미동	연속지적도 외 20건 [자세히보기]	중부원점	2016-9-20 11:17			대기중 [취소하기]	-
2	[행정구역]전국	연속지적도 외 8건 [자세히보기]	중부원점	2016-9-20 11:13	-	-	취소됨	-
3	[행정구역] 경기도 분당 구 구미동	연속지적도 외 20건 [자세히보기]	중부원점	2016-9-20 11:05	2016-9-20 11:06	2016-9-20 12:01	생성 완료	1,500MB [다운로드]
4	[사업지구]토지지역	개발제한구역 외 5건 [자세히보기]	중부원점	2016-9-01 17:01	2016-9-01 17:01	2016-9-01 18:01	생성 완료	[다운로드 기간만료]

- 1 Select an area /
Administrative area : Select an area with address
Business district : Select an area by business district
User area : Select an area from the map
- 2 Select a target / Category : Select layers from the category
Search data name : Search and select a layer
Select the recent list: Select the recent list layer
- 3 Check layer list to download
- 4 Select additional information /
coordinate system, spatial information extension
- 5 Request data
- 6 Download the requested data from Download Status

3. Utilize DB

3. Representation method

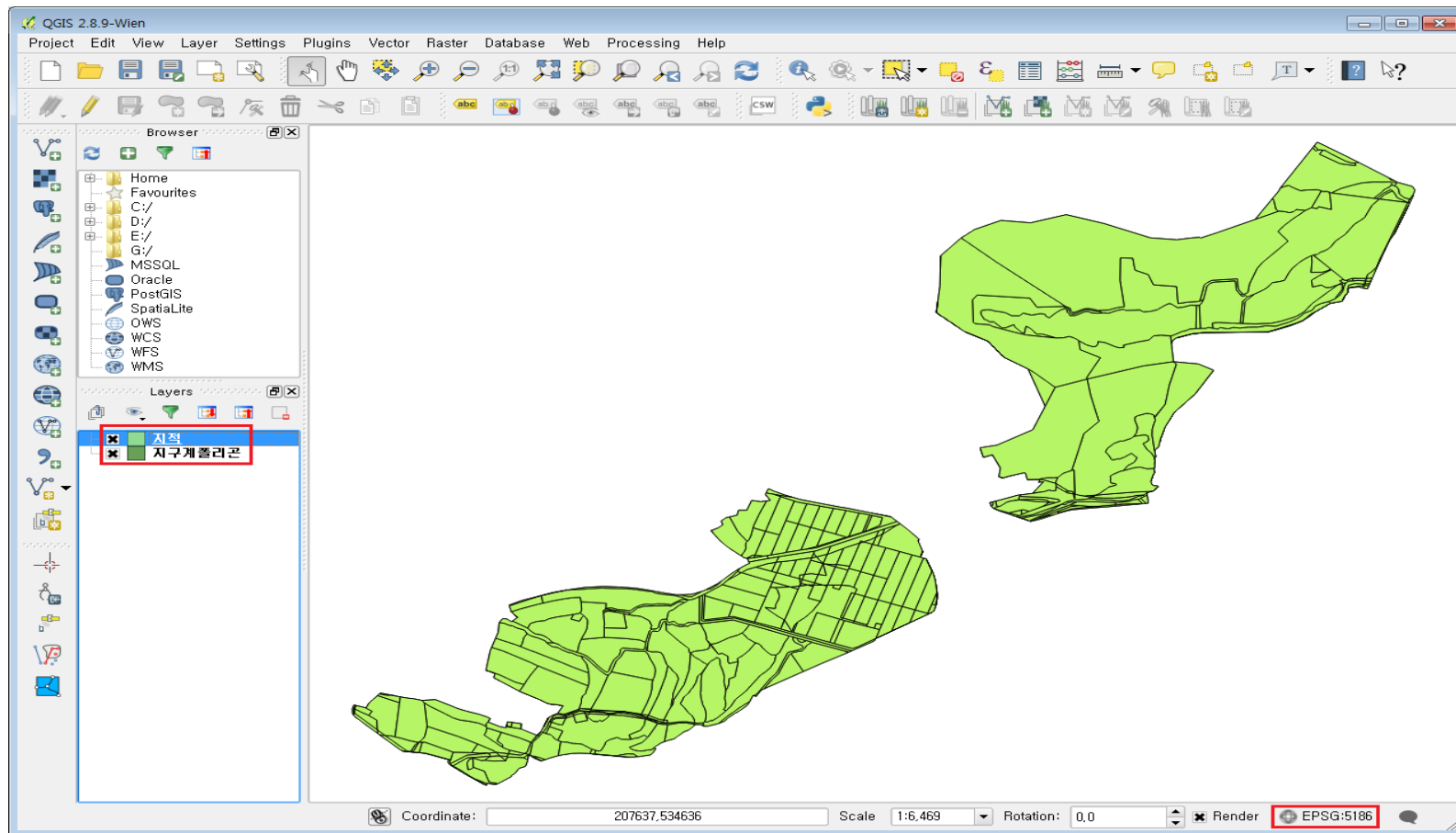
- Use satellite pictures from Kakao map as background



3. Utilize DB

3. Representation method(Continue)

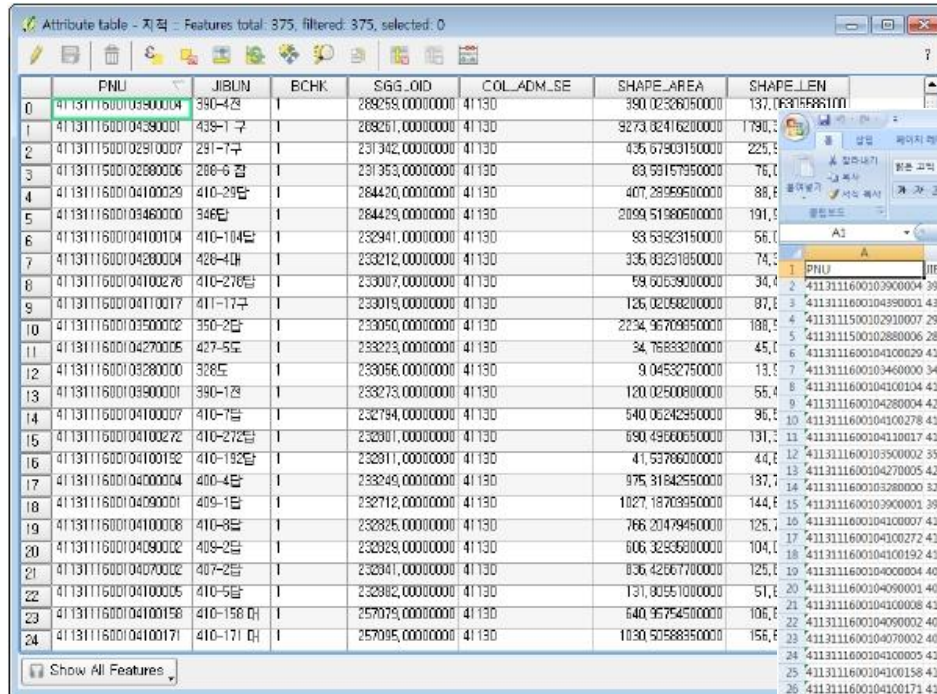
- **Use district boundary polygon and serial cadastral map files to extract only serial cadastral area included in business districts**



3. Utilize DB

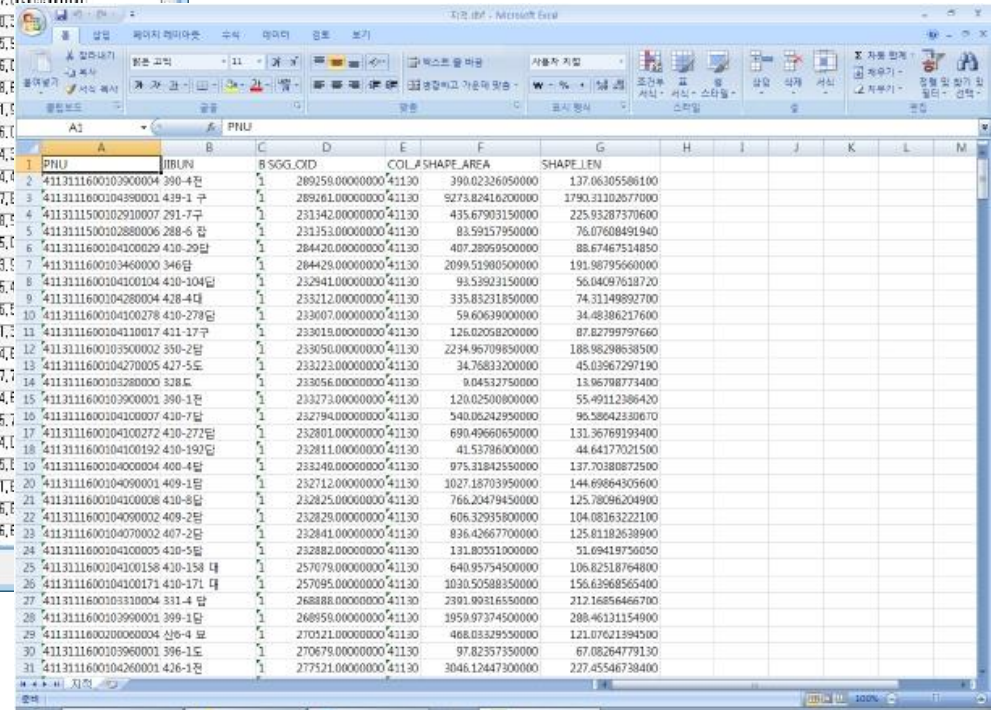
3. Representation method(Continue)

- Check the attribute value of the lot, and open the value in Excel



Attribute table - 지적 - Features total: 375, filtered: 375, selected: 0

	PNU	JIBUN	BCHK	SGG_OID	COL_ADM_SE	SHAPE_AREA	SHAPE_LEN
0	411311160010390004	390-4전		289259.00000000	41130	390.0232605000	137.0630558610
1	4113111600104390001	439-1구		208261.00000000	41130	9273.0241620000	1790.31102677000
2	4113111600102910007	291-7구		231342.00000000	41130	435.67903150000	225.93287370600
3	4113111600102880006	288-6합		231353.00000000	41130	83.59157950000	76.07608491940
4	4113111600104100029	410-29단		284420.00000000	41130	407.28059500000	88.67467514850
5	4113111600103460000	346단		284420.00000000	41130	2099.51980500000	191.98795660000
6	4113111600104100104	410-104단		232941.00000000	41130	93.53923150000	56.04097618720
7	4113111600104280004	428-4대		233212.00000000	41130	335.83231850000	74.31149892700
8	4113111600104100276	410-276합		233007.00000000	41130	58.60639000000	34.48386217600
9	4113111600104110017	411-17구		233019.00000000	41130	126.02058200000	87.82799797660
10	4113111600103500002	350-2합		233050.00000000	41130	2234.96709850000	188.98298538900
11	4113111600104270005	427-5도		233223.00000000	41130	34.76832000000	45.03967297190
12	4113111600103280000	328도		233056.00000000	41130	9.04532750000	13.96798773400
13	4113111600103900001	390-1전		233273.00000000	41130	120.02500800000	55.49112386420
14	4113111600104100007	410-7합		232794.00000000	41130	540.06242950000	96.58642306700
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16	4113111600104100192	410-192합		232911.00000000	41130	806.32953000000	104.61182638990
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19	4113111600104100008	410-8도		232925.00000000	41130	766.20479450000	125.78096204900
20	4113111600104090002	409-2합		232929.00000000	41130	606.32953000000	104.61182638990
21	4113111600104070002	407-2합		232941.00000000	41130	835.42667700000	125.78096204900
22	4113111600104100005	410-5합		232982.00000000	41130	131.80951000000	51.69419750050
23	4113111600104100158	410-158대		257079.00000000	41130	640.95754500000	106.82518764800
24	4113111600104100171	410-171대		257095.00000000	41130	1030.50588350000	156.63968654000



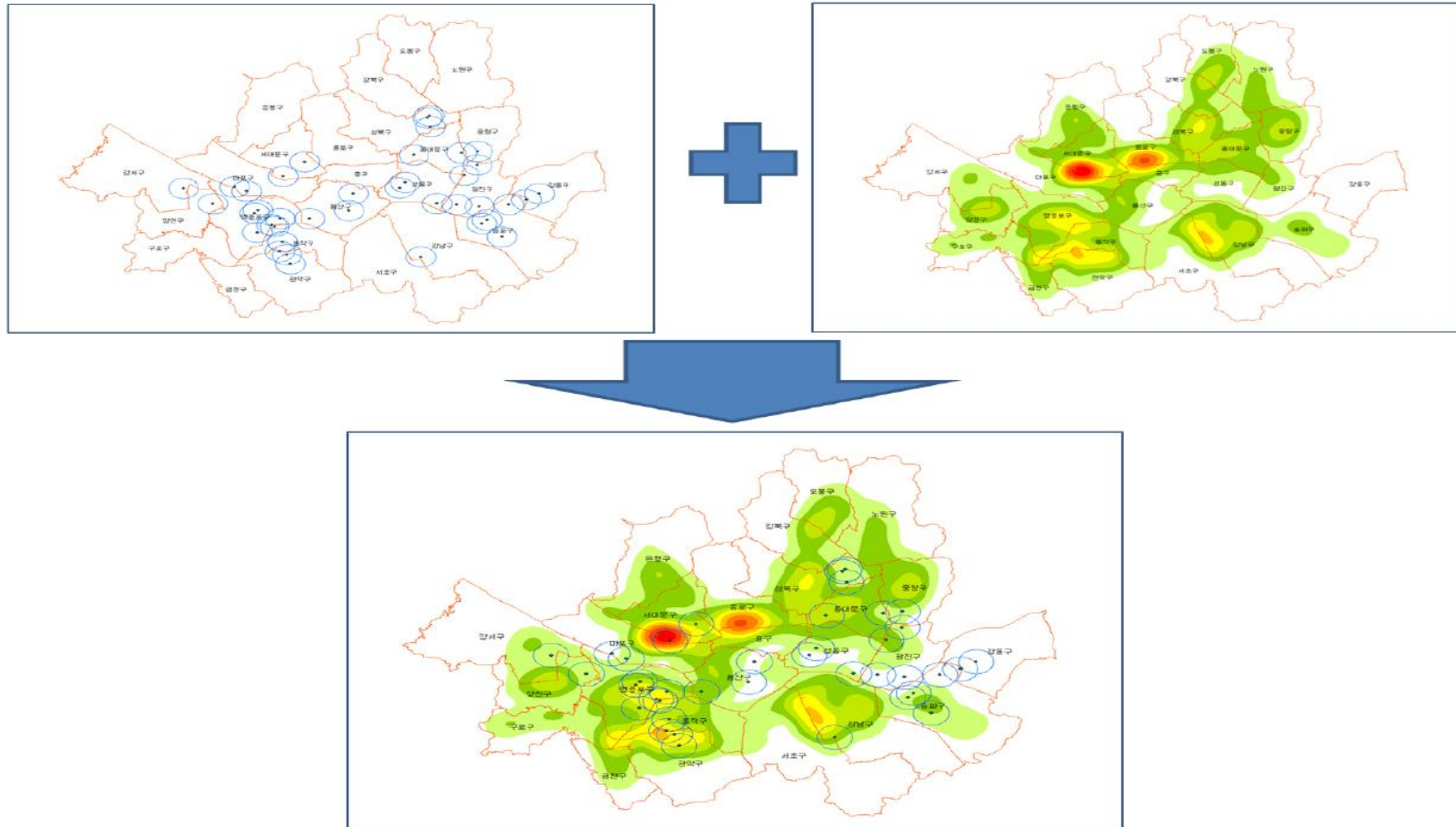
지적 (db) - Microsoft Excel

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	PNU	JIBUN	B	SGG_OID	COL_A	SHAPE_AREA	SHAPE_LEN						
2	411311160010390004	390-4전		289259.00000000	41130	390.0232605000	137.0630558610						
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4	4113111600102910007	291-7구		231342.00000000	41130	435.67903150000	225.93287370600						
5	4113111600102880006	288-6합		231353.00000000	41130	83.59157950000	76.07608491940						
6	4113111600104100029	410-29단		284420.00000000	41130	407.28059500000	88.67467514850						
7	4113111600103460000	346합		284420.00000000	41130	2099.51980500000	191.98795660000						
8	4113111600104100104	410-104단		232941.00000000	41130	93.53923150000	56.04097618720						
9	4113111600104280004	428-4대		233212.00000000	41130	335.83231850000	74.31149892700						
10	4113111600104100276	410-276합		233007.00000000	41130	58.60639000000	34.48386217600						
11	4113111600104110017	411-17구		233019.00000000	41130	126.02058200000	87.82799797660						
12	4113111600103500002	350-2합		233050.00000000	41130	2234.96709850000	188.98298538900						
13	4113111600104270005	427-5도		233223.00000000	41130	34.76832000000	45.03967297190						
14	4113111600103280000	328도		233056.00000000	41130	9.04532750000	13.96798773400						
15	4113111600103900001	390-1전		233273.00000000	41130	120.02500800000	55.49112386420						
16	4113111600104100007	410-7합		232794.00000000	41130	540.06242950000	96.58642306700						
17	4113111600104100272	410-272합		232901.00000000	41130	690.40660650000	131.36769193400						
18	4113111600104100192	410-192합		232911.00000000	41130	806.32953000000	104.61182638990						
19	4113111600104000004	400-4대		232249.00000000	41130	975.31842550000	125.78096204900						
20	4113111600104090001	409-1합		232712.00000000	41130	1027.18703950000	104.15378600000						
21	4113111600104100008	410-8도		232925.00000000	41130	766.20479450000	125.78096204900						
22	4113111600104090002	409-2합		232929.00000000	41130	606.32953000000	104.61182638990						
23	4113111600104070002	407-2합		232941.00000000	41130	835.42667700000	125.78096204900						
24	4113111600104100005	410-5합		232982.00000000	41130	131.80951000000	51.69419750050						
25	4113111600104100158	410-158대		257079.00000000	41130	640.95754500000	106.82518764800						
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30	4113111600103960001	396-1도		270678.00000000	41130	97.82357350000	67.08264779130						
31	4113111600104260001	426-1전		277521.00000000	41130	3046.12447300000	227.45546738400						

4. Case of Application: Construction Project

1. Application in Sales

- **Analyzing commercial districts**





III. Site Selection Analysis System

1. Definition
2. Implementation Status
3. Key Features



1. Definition

1. What is Site Selection Analysis System?

A system that extracts possible candidate sites by excluding **developed areas**, **undevelopable areas**, and **development restricted areas** across the nation

Information on nation-wide spatial data and restrictions per area and use are scattered

System Refines Data

Supporting Decision-making

Extract potential development area

Support the extraction by selectively excluding conditions of spatial information

Comparison through potential analysis

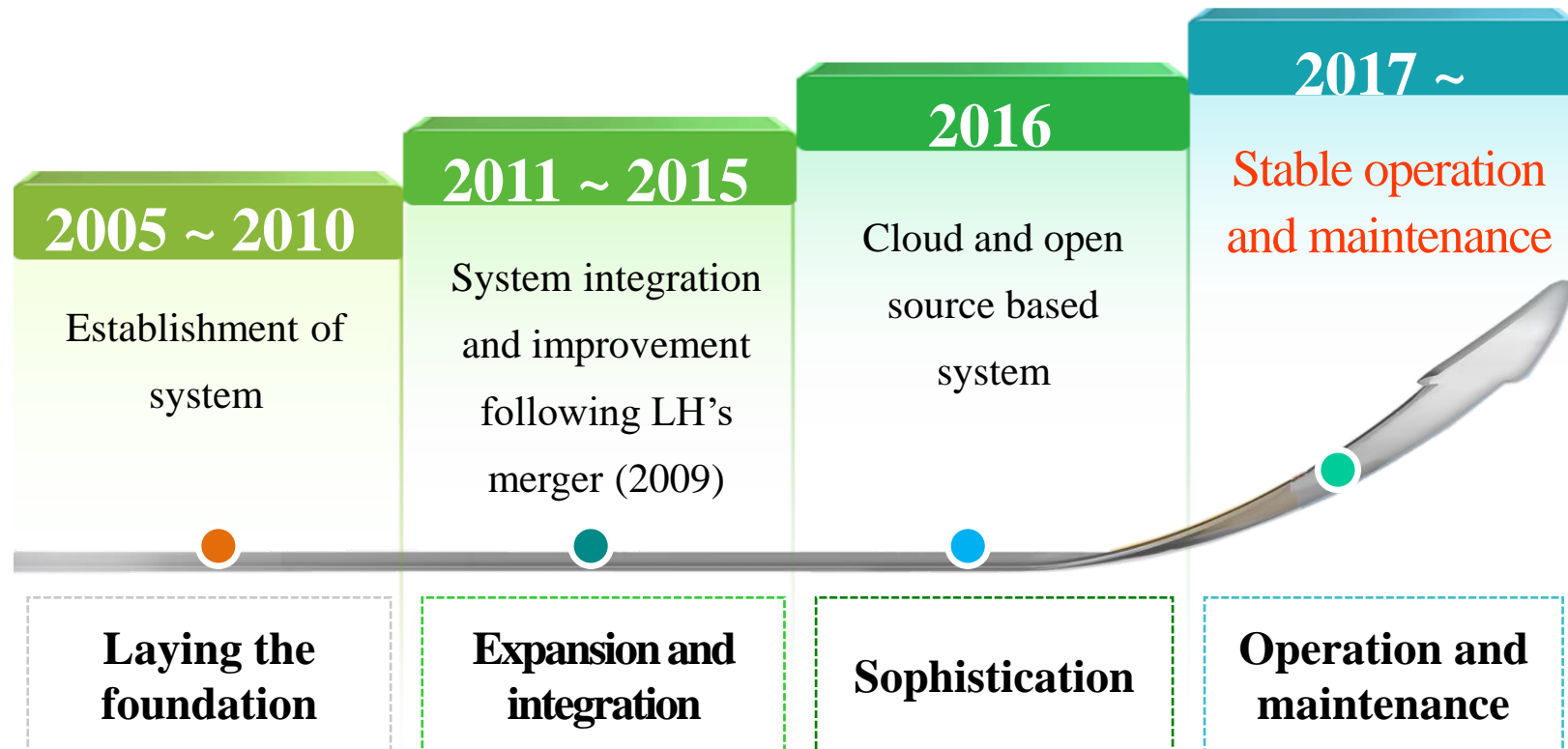
Support decision-making with objective indicators by comparing potential of candidate areas

Detailed analysis on candidate sites

Enhance work objectivity and efficiency with standardized analysis on candidate sites

2. Implementation Status

2. History of Site Selection Analysis System



3. Key Features

3. Main Functionalities

Extracting developable Areas

Selectively exclude certain spatial information to support extracting developable areas

- Set/register analysis conditions (areas/exclusion conditions)
- batch processing

Potential Analysis

Support decision-making with objective indicators by comparing potential of candidates

- Manage development potential analysis model
- Development potential simulation (Select an area/analysis model)

Detailed Analysis on Candidate Sites

Enhance work objectivity and efficiency with standardized analysis on candidate sites

- Analyze current status in detail
- Analyze project feasibility
- Produce reports



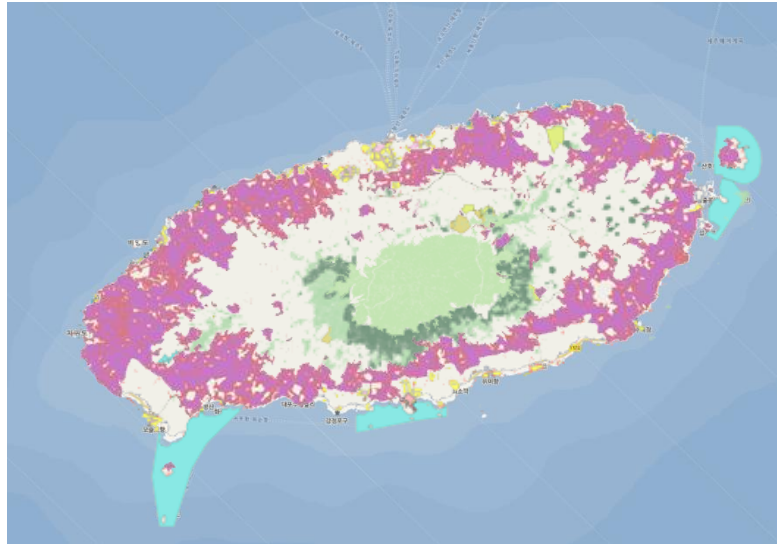
IV. Key Features of Site Selection Analysis System

1. Extract Developable Areas
2. Indicators of Potential
3. Site Analysis



1. Extract Developable Areas

1. Analyze developable areas



What is developable area analysis?

- After selecting area target of analysis, exclude developed, development-restricted, and undevelopable land to extract developable land

Analysis method

- Exclude developed areas (92 layers)
- Exclude undevelopable areas (Altitude / slope map)
- Exclude development-restricted areas (154 layers)
- Cluster analysis

Extract developed areas



Extract undevelopable areas



Extract development-restricted areas

Exclude already developed land such as residential land development districts, urban areas, roads, etc

Exclude land that cannot be developed according to altitude and slope

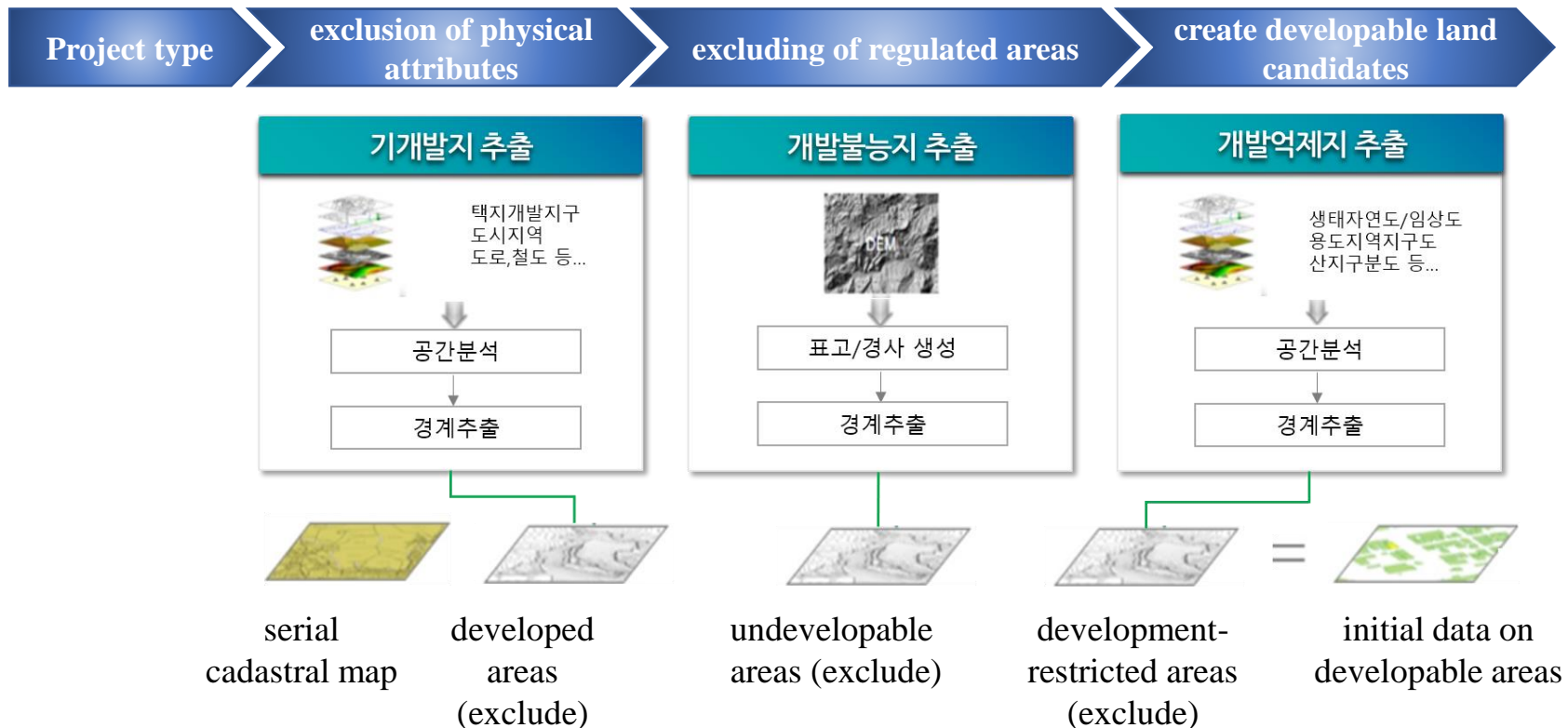
Exclude development-restricted area based on ecological zoning and forest land-use maps

1. Extract Developable Areas

2. Process for selecting developable land

Analysis procedure for selecting developable land

Analysis procedure per stage for selecting developable



1. Extract Developable Areas

3. Layers related to developable land analysis

Layers related to developed areas (92)

- Developed areas
 - Development zone/district
 - . Urban development zone
 - . Enterprise city development zone
 - . District unit planning area
 - Development district/complex/special zone
 - . Districts scheduled for residential land development
 - . Tourist attractions
 - . Industrial technology complex
 - . Renewal promotion districts
- National planning/developed areas
 - Special-purpose areas
 - . Residential areas
 - . Business districts
 - Special-purpose districts
 - . Settlement districts
 - . Development promotion districts
 - Traffic facilities
 - . Railroads
- Others

Layers related to development-restricted areas(154)

- Purpose-specified areas
 - National planning/urban areas
- Purpose-specified zones
 - Green belt zones
- Purpose-specified zones
 - National planning/preservation districts
- Conversation of nature
 - Ecological zoning map
- Conversation of water quality
 - Water supply/water source protection zones
- Environment
 - Natural park/special-purpose districts
 - National defense
 - Military bases / facilities protection
 - Disasters
 - Natural disasters/disaster risk districts
 - Cultural heritage
 - Cultural heritage / cultural heritage protection
 - Farmland/forest land/grassland
 - Farmland/agricultural promotion areas

< Developed areas >



< Special-purpose areas >



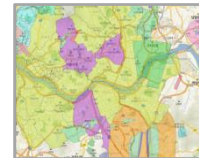
< Conversation of water quality >



< Environment >



< National defense >



< Disasters >

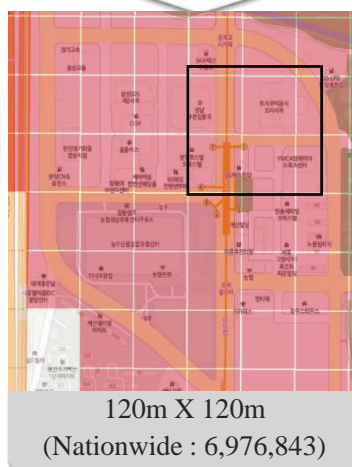
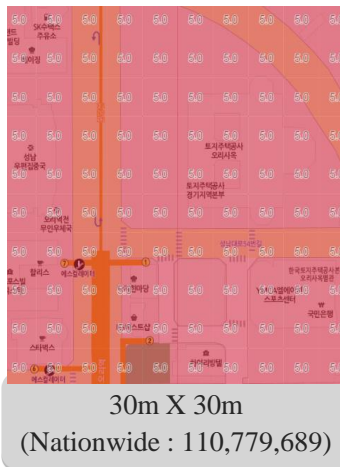
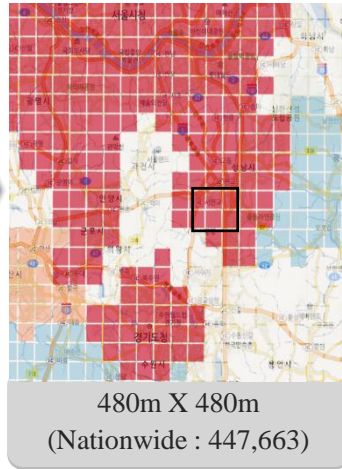
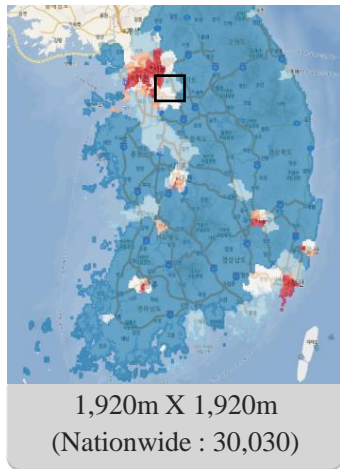


< Cultural heritage >



2. Indicators of potential

1. Development potential analysis / Indicators of potential



What is development potential analysis?

- Objective analysis of potential for development presented on screen on the scale of 1 to 5. Representation is the national land on a 30m×30m-grid, and analysis uses spatial information stored in GIS BANK as reference

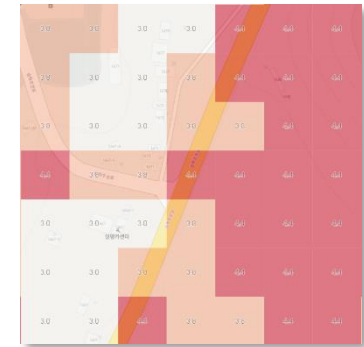
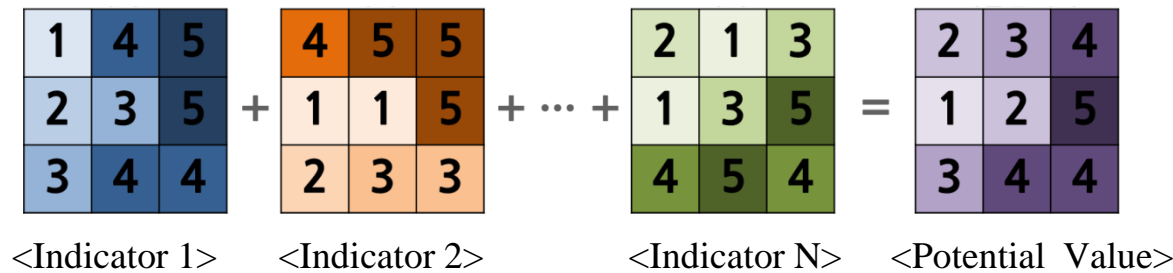
Indicators of potential

- Proximity to developed areas
- Proximity to city, county, and district offices
- Proximity to public convenience facilities
- Obstacles
- Proximity to expressways
- Proximity to highways
- Proximity to railway stations
- Proximity to airport terminals
- Land cover classification
- Special-purpose areas
- Approval/permissions
- Gross regional domestic product
- Land price competitiveness
- Level of land price
- Fluctuation rate of land price
- Fluctuation rate of population
- Population density
- Economically active population
- Household fluctuation rate
- Number of business entities
- Housing supply rate
- Status on registered plants
- National and public land
- Altitude
- Slope map
- National environmental assessment

2. Indicators of potential

2. Calculation per analysis indicator and analysis model

Calculation per analysis indicator



< Application screen >

Analysis Model

- Analysis indicators reorganized and weighted according to the condition of parcel
- The Site Selection Analysis System allows the user to choose from the basic model (general housing lots, industrial complex, New Stay, etc.) or customize by adding indicators

2. Indicators of potential

3. Comparison of Indicators by Analysis Model

Comparison of Indicators by Analysis Model (different models for the same area) **Potential Analysis Model**

분석모델 관리

개발상세면 분석지표

개발상세면명	필수지표명	필수지표 설명	단위	기준치	중요도	비율
노스역	노스역	노스역	2017.04.20.01:54.17	비율		40%
공공주택	공공주택	공공주택	2017.03.23.16:34.34	비율		40%
일반역	일반역	일반역	2017.03.14.10:55.44	비율		40%

개발상세면 분석지표

지표명	필수지표	필수지표 설명	지표단위 (단위: %)	중요도 기준				
				5	4	3	2	1
주요	주요지표	주요지표	0.5	100	110	120		역외
차기	차기지표	차기	0.2	0.25	0.33	0.5		역외
교통	교통지표	교통	5	10	15	20		역외
입지	입지지표	입지	5	10	15	20		역외
경제	경제지표	경제	5	4	3	2		역외

General Housing Site Analysis Model

Applied

- General Housing Site
- Industrial Complex
- Public Housing Site
- Private Rental Housing

분석모델 관리

개발상세면 분석지표

개발상세면명	필수지표명	필수지표 설명	단위	기준치	중요도	비율
노스역	노스역	노스역	2017.04.20.01:54.17	비율		40%
공공주택	공공주택	공공주택	2017.03.23.16:34.34	비율		40%
일반역	일반역	일반역	2017.03.14.10:55.44	비율		40%

개발상세면 분석지표

지표명	필수지표	필수지표 설명	지표단위 (단위: %)	중요도 기준				
				5	4	3	2	1
차기	차기지표	차기	0.2	0.25	0.33	0.5		역외
입지	입지지표	입지	5	10	15	20		역외
주요	주요지표	주요	5	10	15	20		역외
주요	주요지표	주요	100	65	40	20		역외
경제	경제지표	경제	5	4	3	2		역외
주요	주요지표	주요	100	65	45	30		역외

Public Housing Site Analysis Model

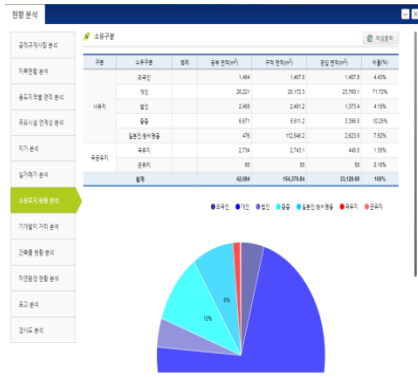
Applied

Apply different analysis models to one area and provide analysis results by project type

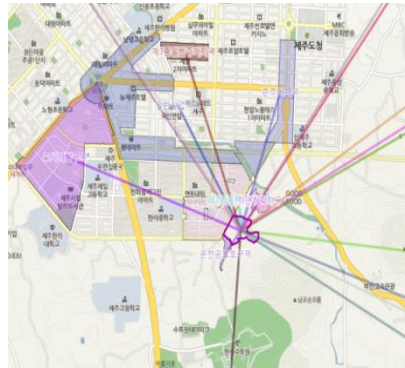
3. Site Analysis

1. Development Candidate Site Analysis

Status Analysis



Visualization



What is Development Candidate Site Analysis?

- Calculate land price based on parcel information and official appraisal price
- Analysis of land use status, distance from existing facilities for status identification, and view reports and cost estimation to verify feasibility

Project Cost Analysis

구분	시군구	읍면동	지번	면적	건축면적	공시지가	실거래가(㎡)	평균공시지가	실거래가	지가 상승률	비용	비용 상승률	비용 대비 수익률	비용 대비 수익률 상승률
국유지	서울시	강남구	강남1가	1,404	1,407.3	1,407.3	1,407.3	1,407.3	1,407.3	0%	1,407.3	0%	0%	0%
사유지	서울시	강남구	강남2가	20,221	20,172.3	20,172.3	20,172.3	20,172.3	20,172.3	0%	20,172.3	0%	0%	0%
합계	서울시	강남구	강남	40,884	40,884.8	40,884.8	40,884.8	40,884.8	40,884.8	0%	40,884.8	0%	0%	0%

Report



Item for Analysis

Land record

Regulations

Building

Facilities

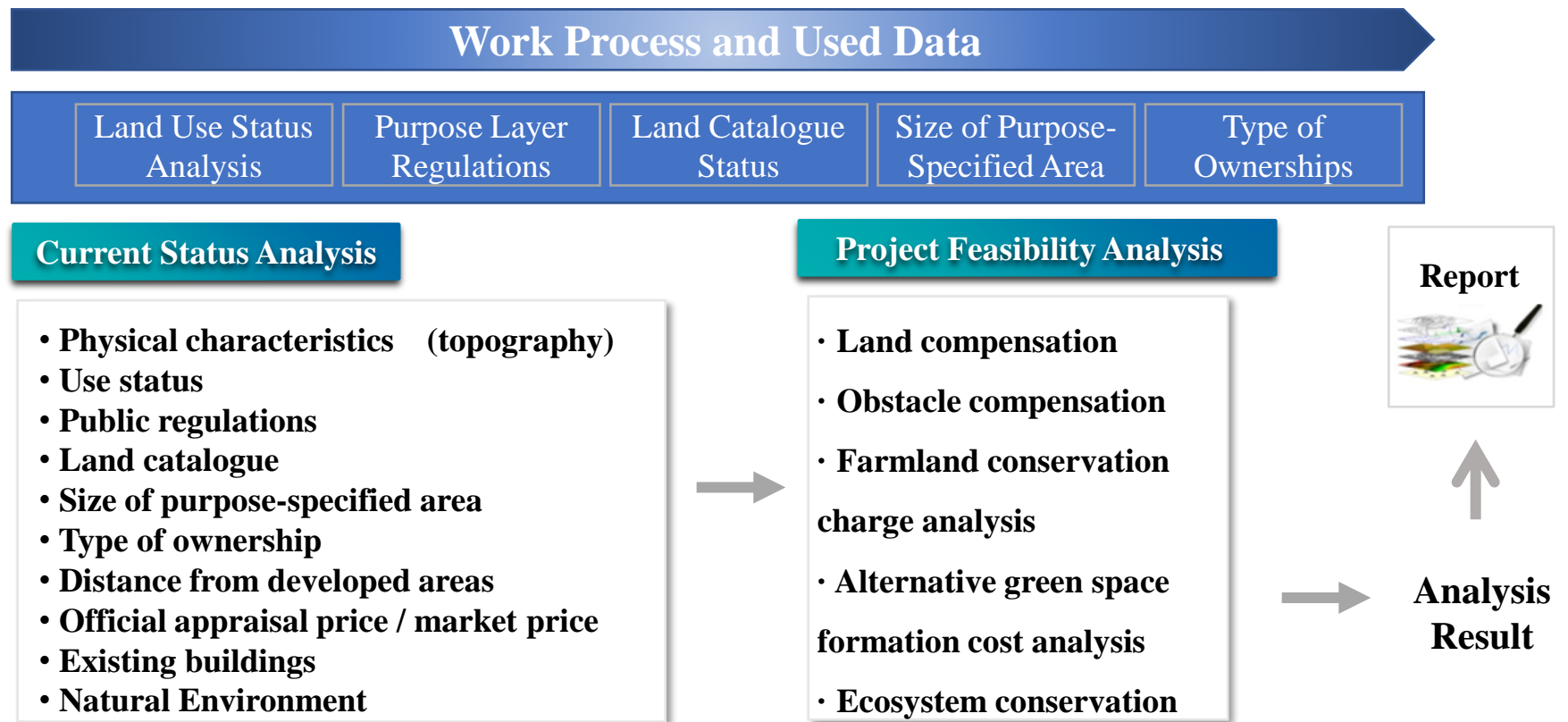
Natural environment

Project cost

3. Site Analysis

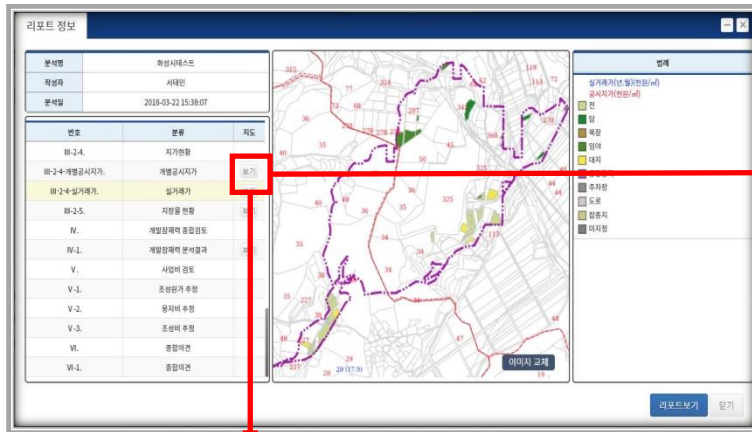
2. Candidate Site Analysis Process

Process of Development Site Analysis

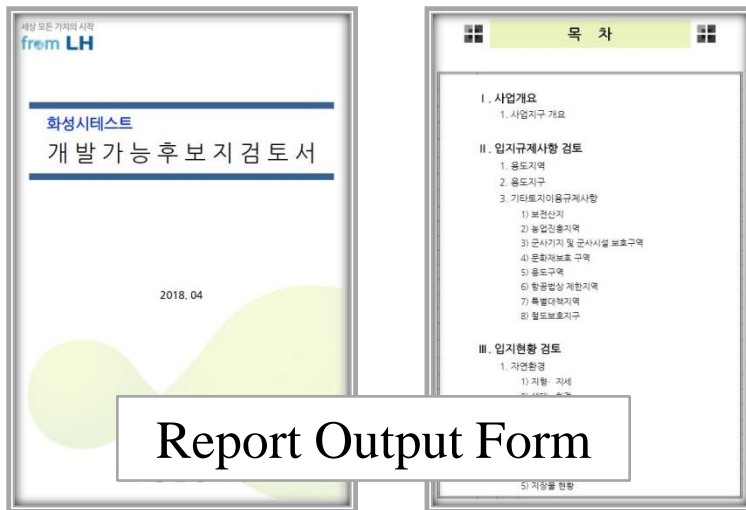
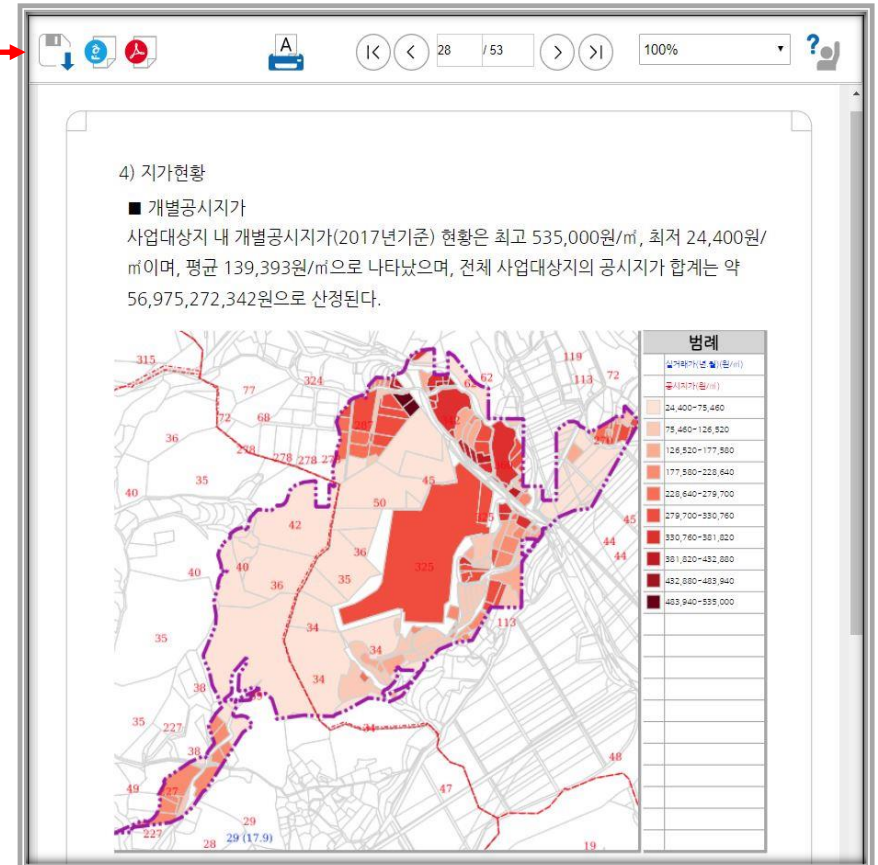


3. Site Analysis

3. Final Report



Official Appraised Price of Individual Parcels



Q & A

Thank You !

