

Appendix G

Nonaviation Chapter Supplemental Material

Appendix G1

Wye Mullan West Plan Area Map Excerpts

Contained herein are a series of maps taken from the Wye Mullan West Comprehensive Area Plan, adopted November 16, 2005.

EXHIBIT G1-1
Wye-Mullan Plan Area Location Map

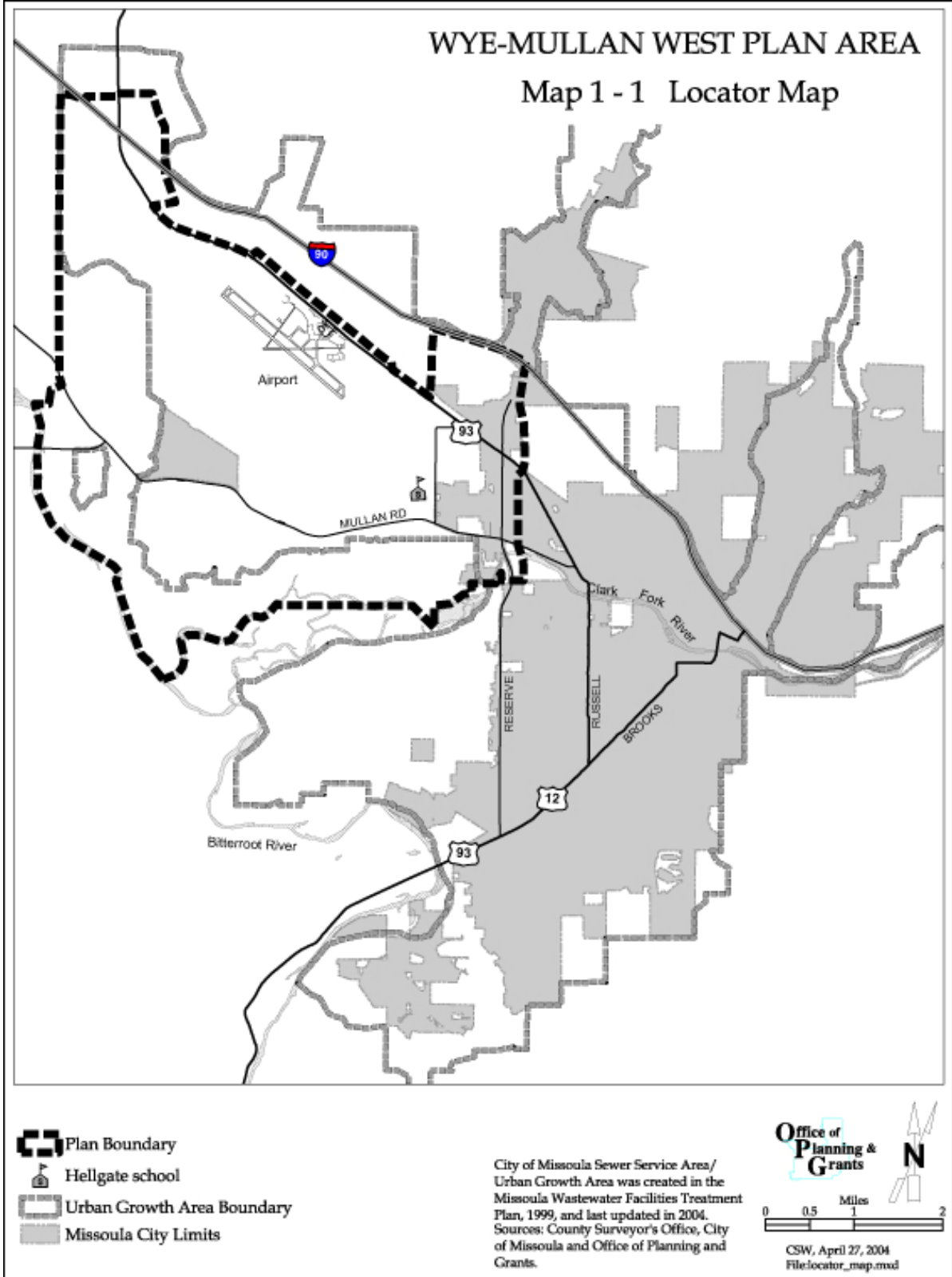


EXHIBIT G1-2
 Wye Mullan West Planning Area Boundaries

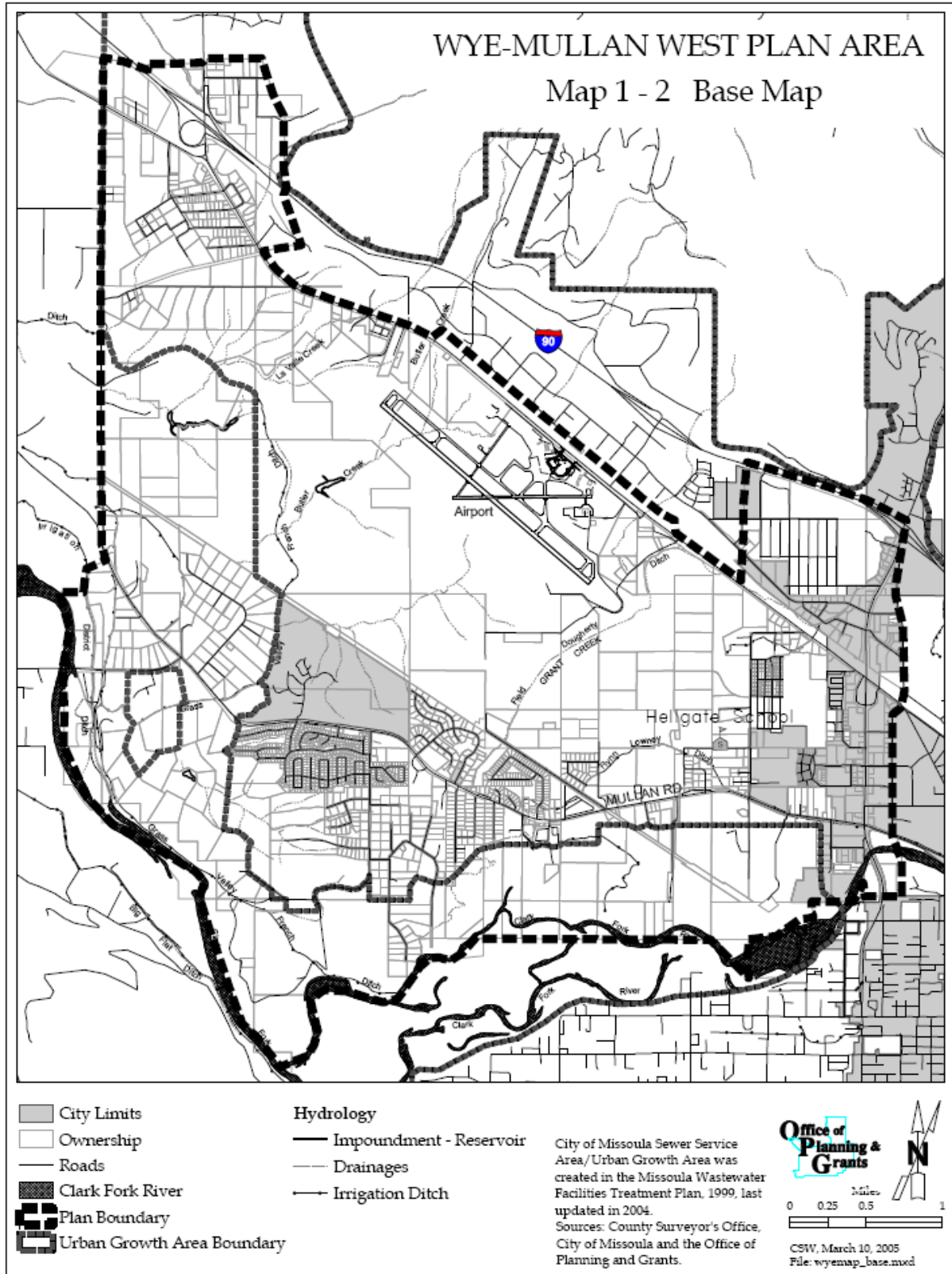
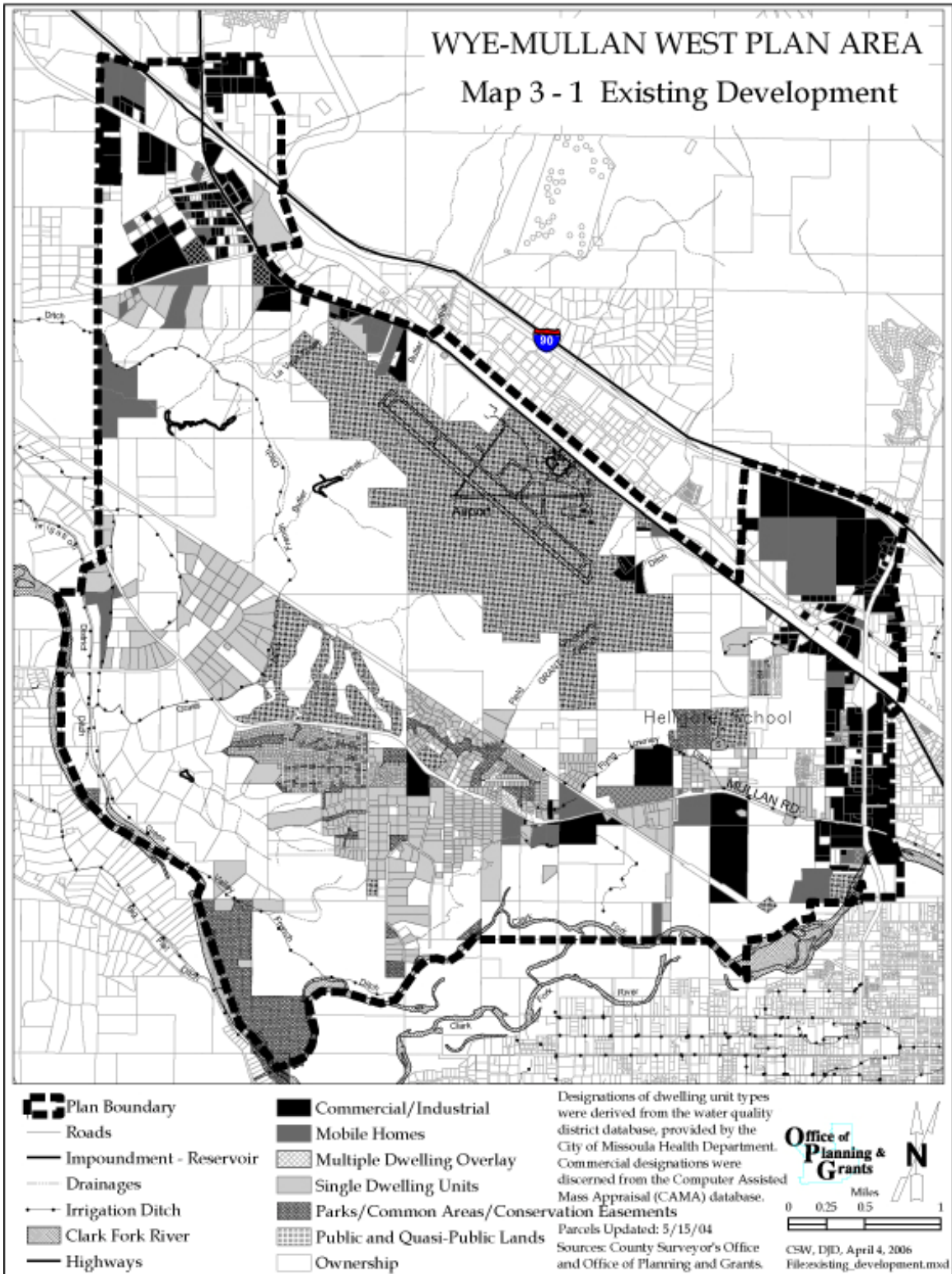


EXHIBIT G1-3
Existing Land Uses



Note: Airport property line does not include most recent land acquisition.

EXHIBIT G1-4
 Transportation System

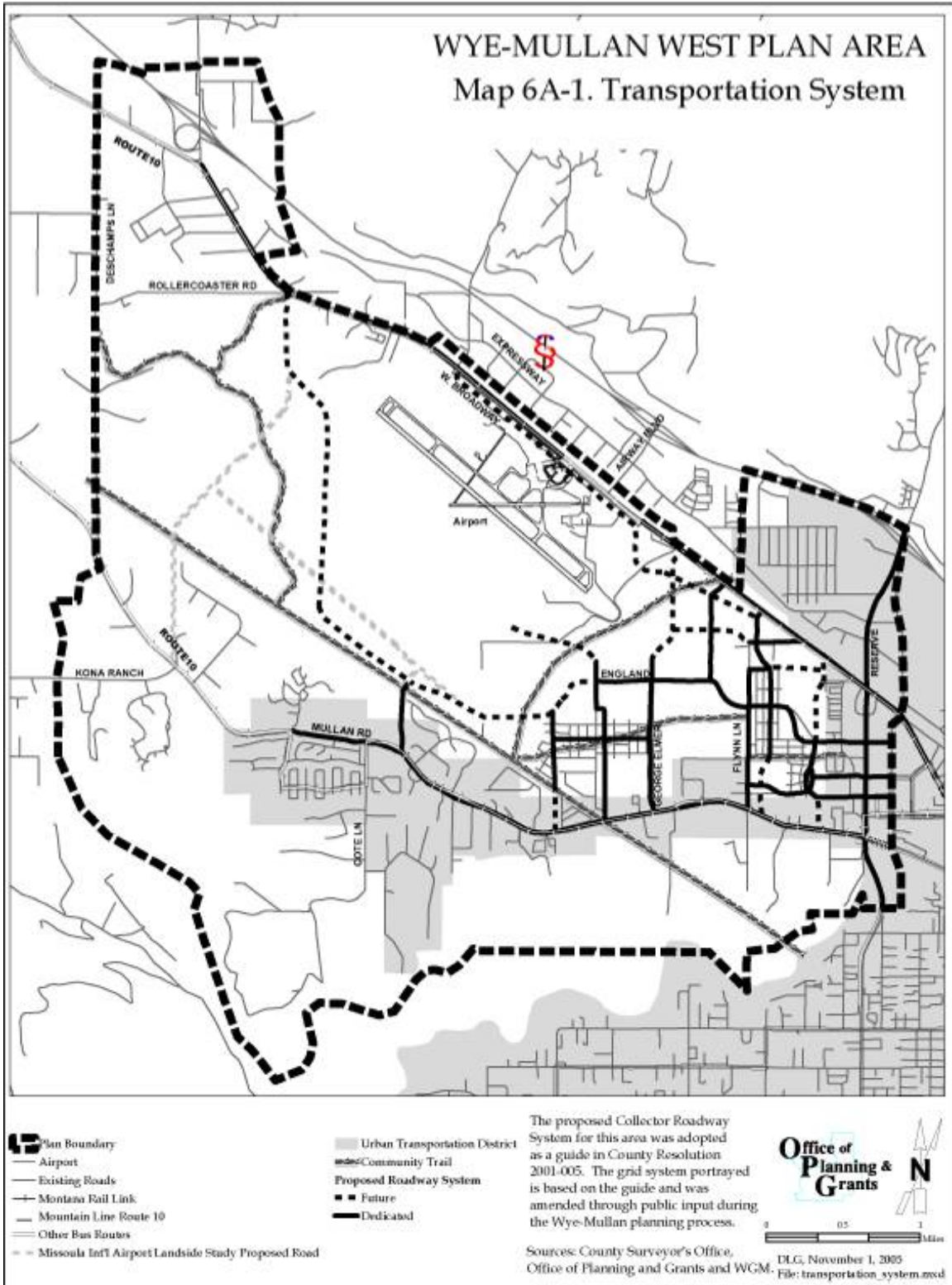


EXHIBIT G1-5
Sewer Service Area

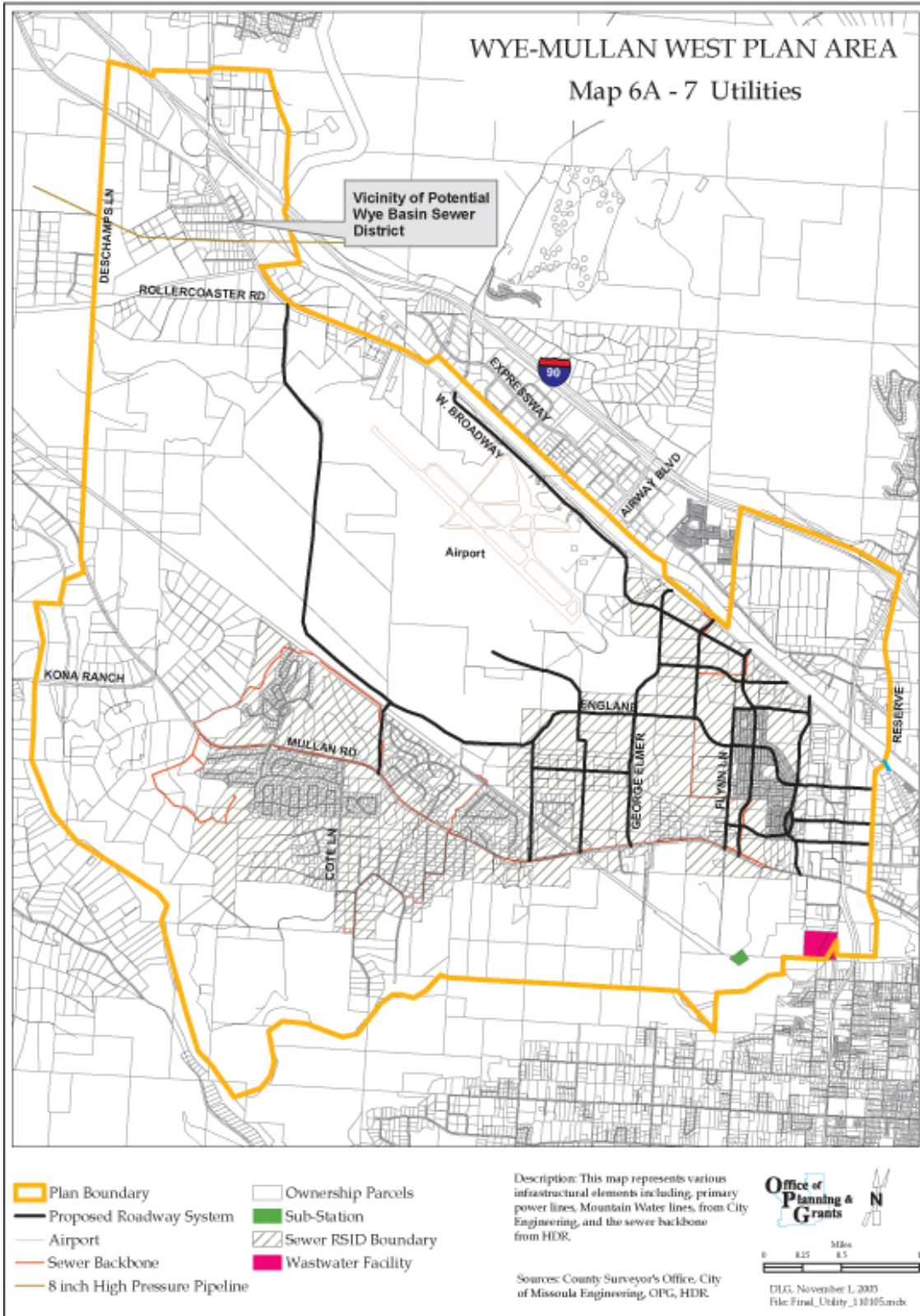


EXHIBIT G1-6
Riparian Areas

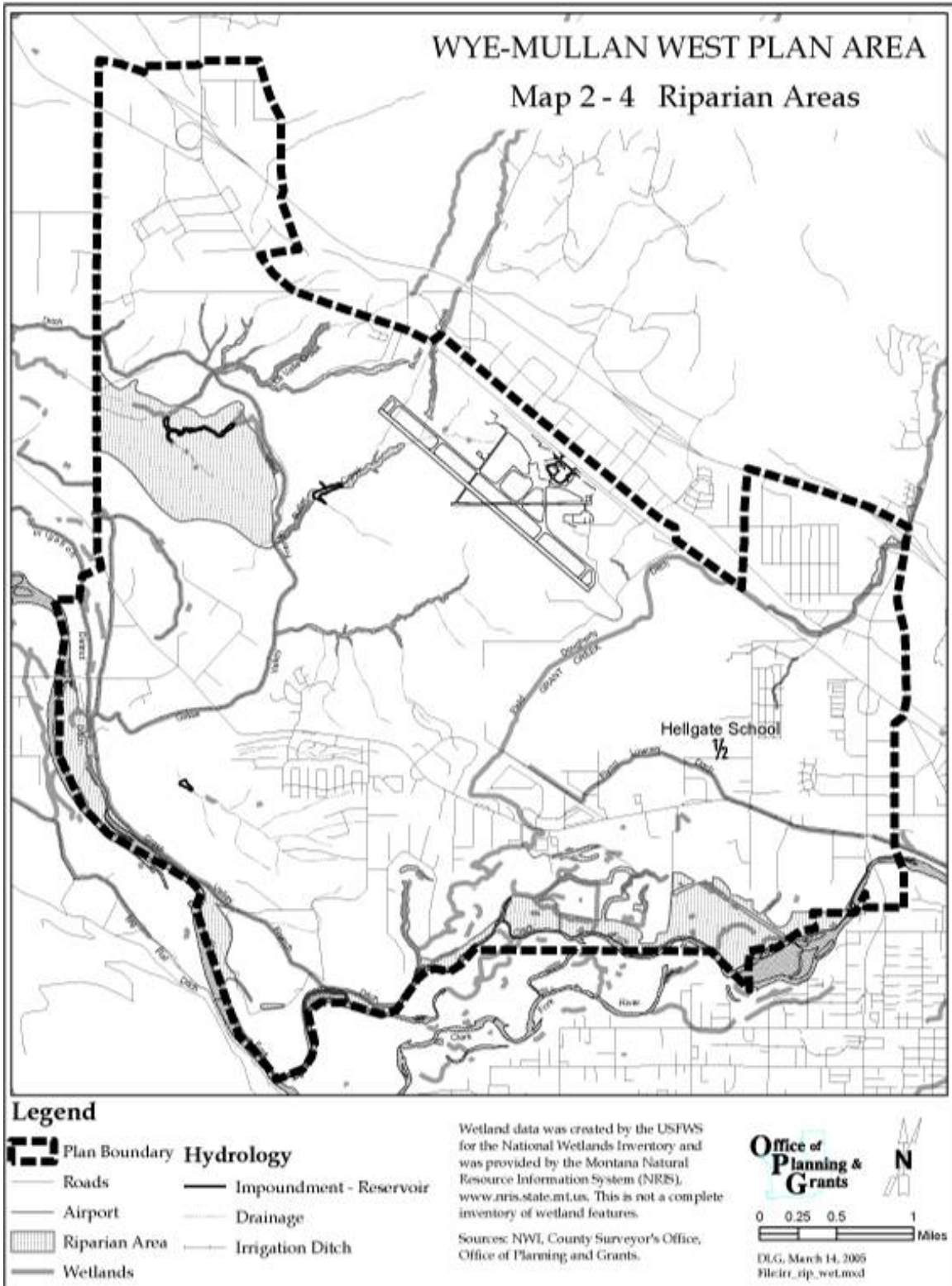
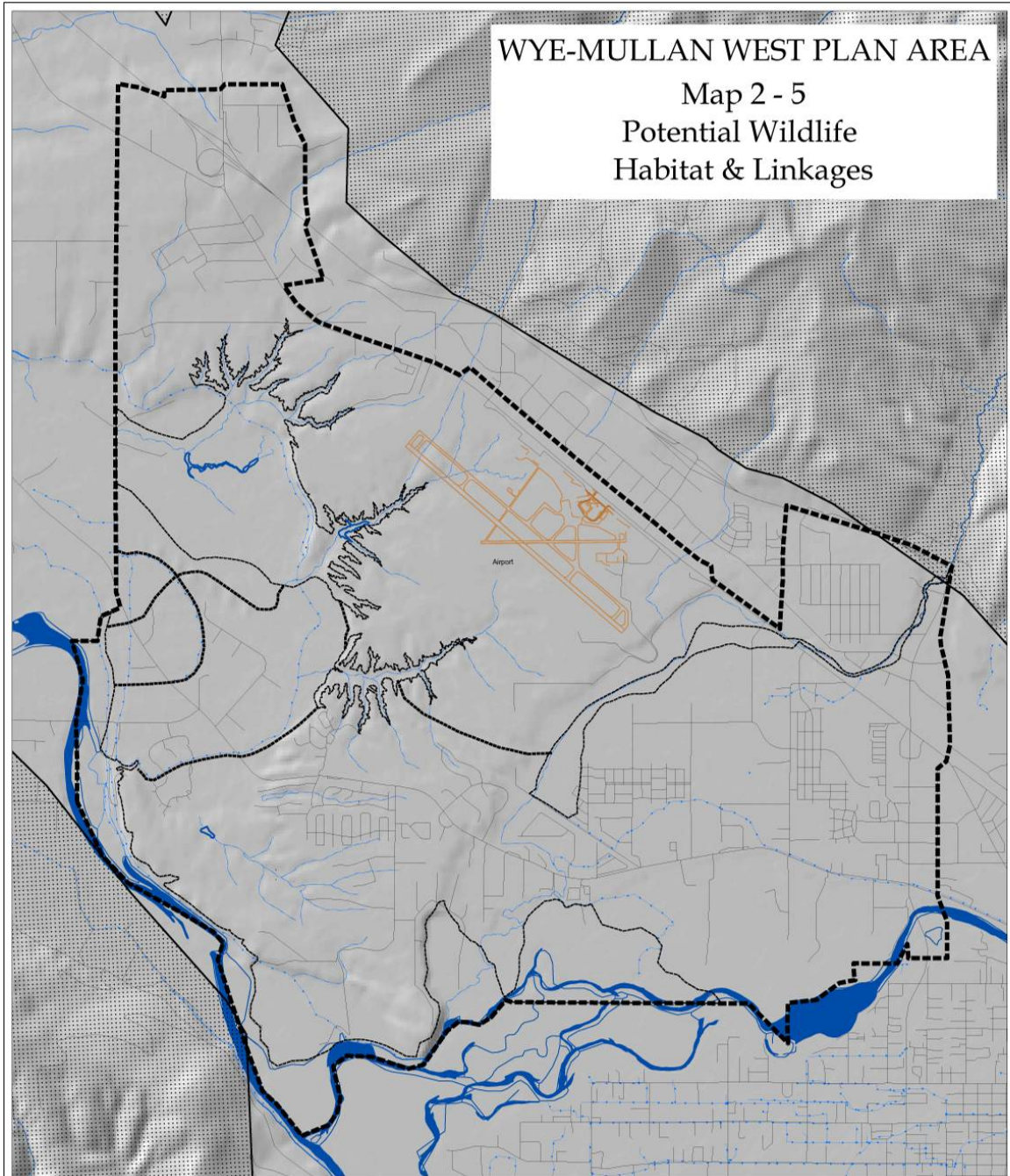


EXHIBIT G1-7
 Potential Wildlife Habitat and Linkages



WYE-MULLAN WEST PLAN AREA
 Map 2 - 5
 Potential Wildlife
 Habitat & Linkages

- Plan Boundary
- Airport
- Roads
- Habitat
- Linkage
- Big Game Winter Range

The natural resource constraints layer is a combination of the DNRC and FEMA Floodplain layers, slopes over 15 percent, riparian areas, and hydrological features. The Big Game Winter Range layer provided by MT FWP and was created at a scale of 1:250,000, so boundaries are generalized. Potential wildlife corridors were discerned at OPG by overlaying the natural resource constraints on a 1998 orthophoto.

Site-specific analysis of habitat areas and linkages may result in adjustments to ensure optimal placement on the property.

Sources: County Surveyor's Office, Office of Planning and Grants (OPG), and Montana Fish, Wildlife and Parks (FWP).

Office of
Planning & N
Grants

0 0.5 1 Miles
 DLG, DJD, April 4, 2006
 File: final_hab_link_102705.mxd

EXHIBIT G1-8
Grant Creek Flood Hazards

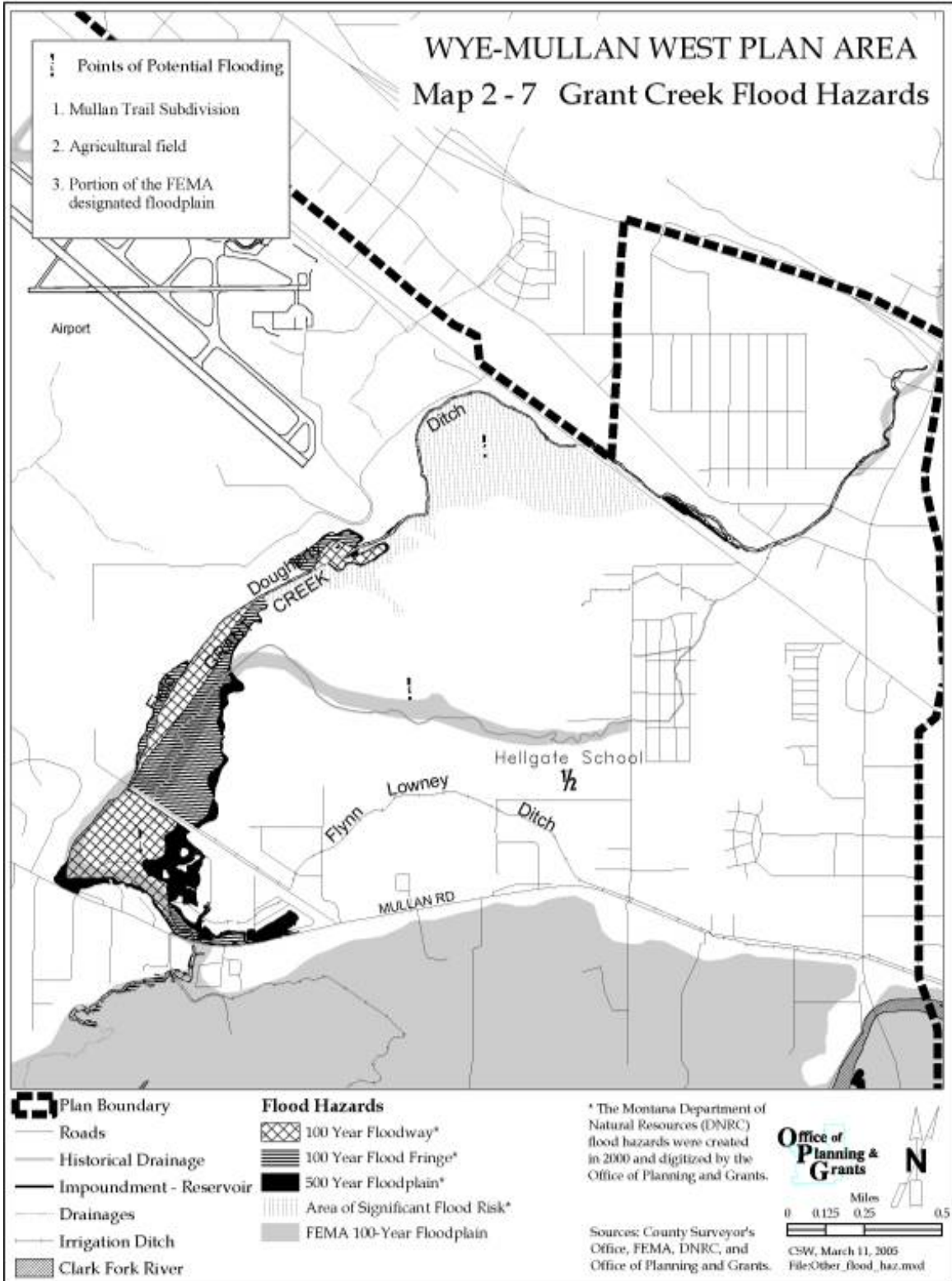
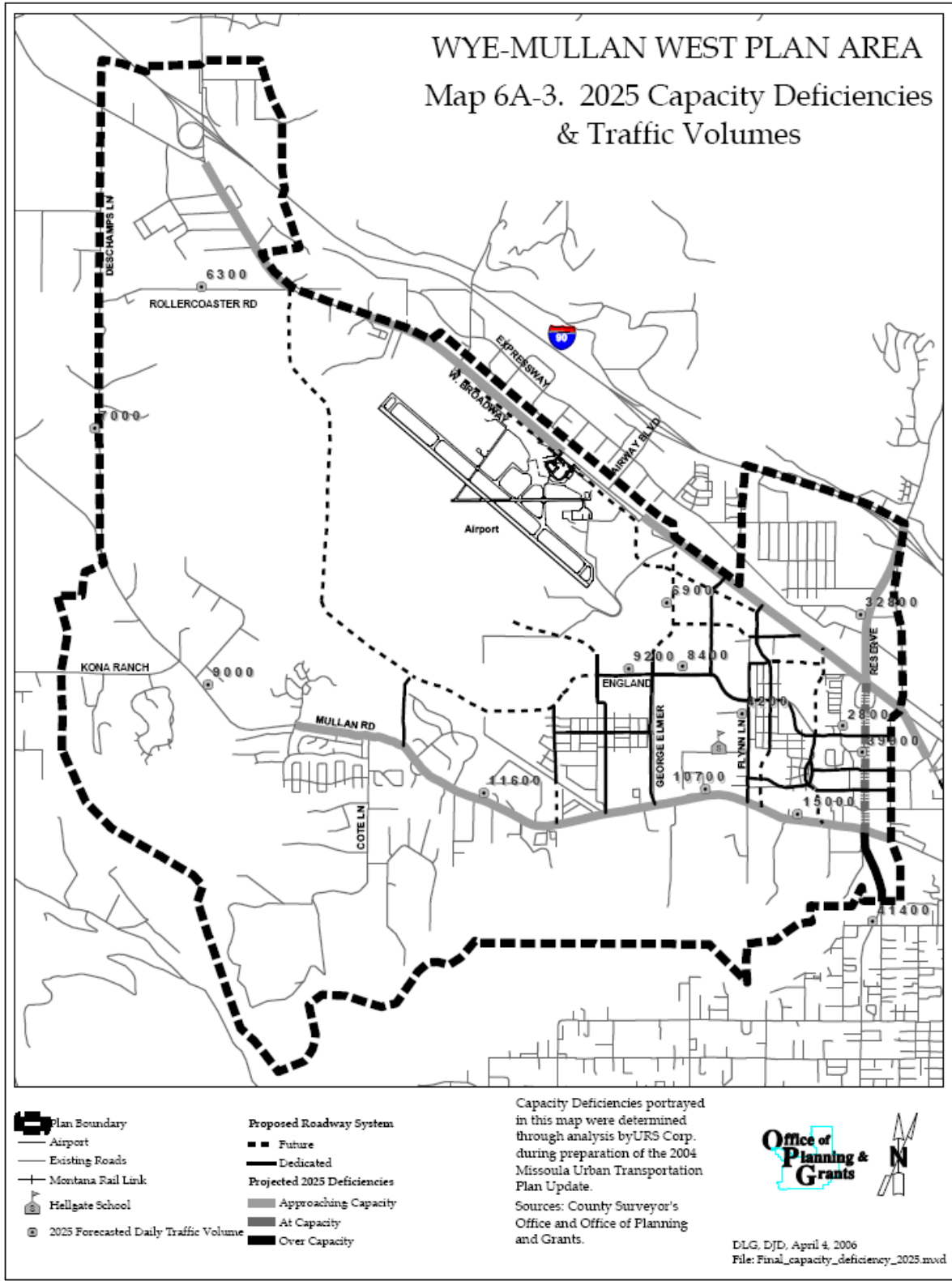


EXHIBIT G1-9
 2025 Road Capacity Deficiencies & Traffic Volumes



Appendix G2

Urban Fringe Development Area Project Update

Below are a series of maps taken from the Urban Fringe Development Area Project Update, a residential land use development suitability study completed in 2008. Exhibits G2-1 and G2-2 show water and sewer utilities respectively while G2-3 and G2-4 display transportation and bike access. Exhibit G2-5 shows fire service while Exhibits G2-6, G2-7, and G2-8 show environmental attributes. The final two exhibits show land use suitability for residential homes.

EXHIBIT G2-1
UFDA Project Mountain Water Access

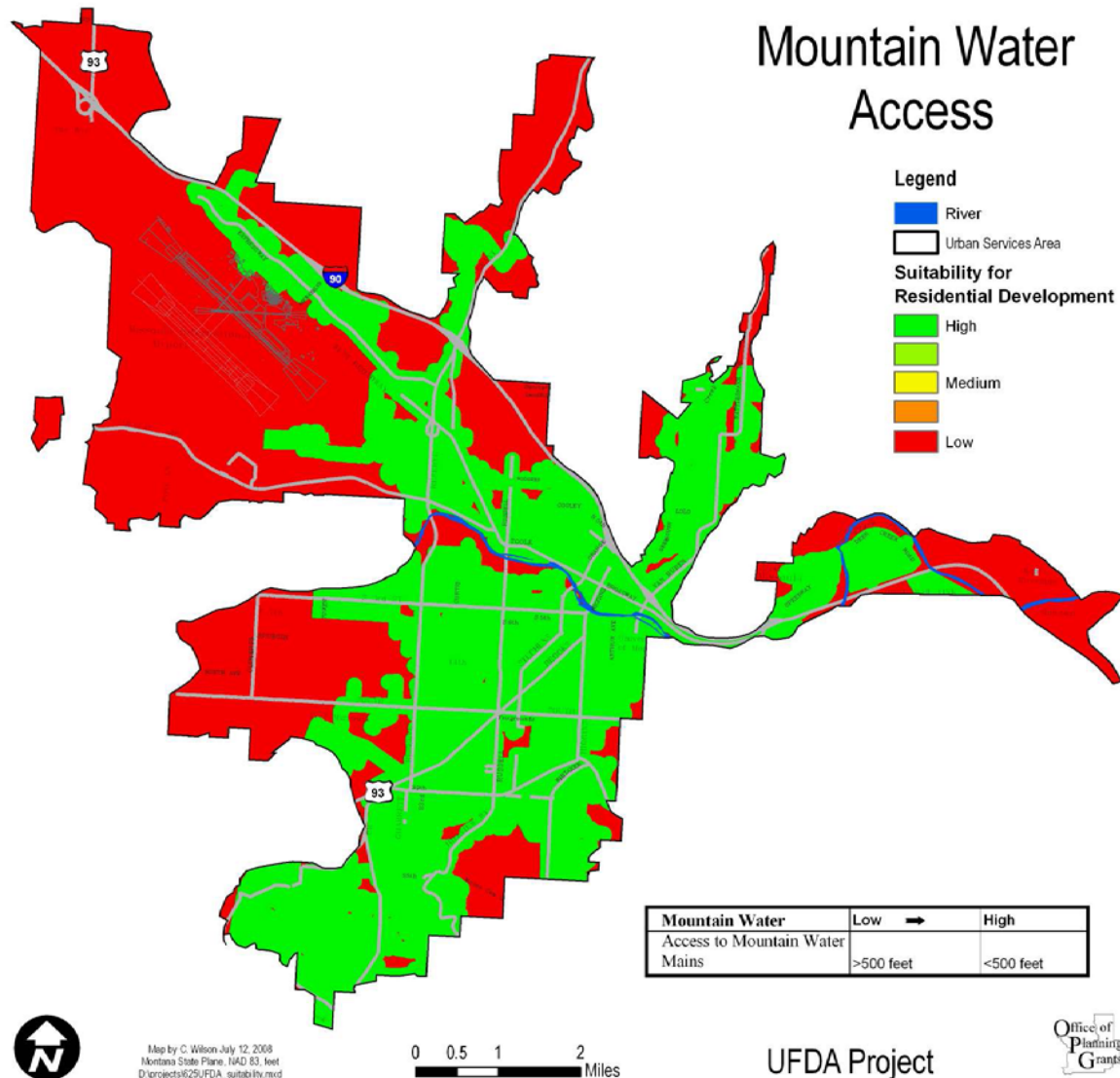
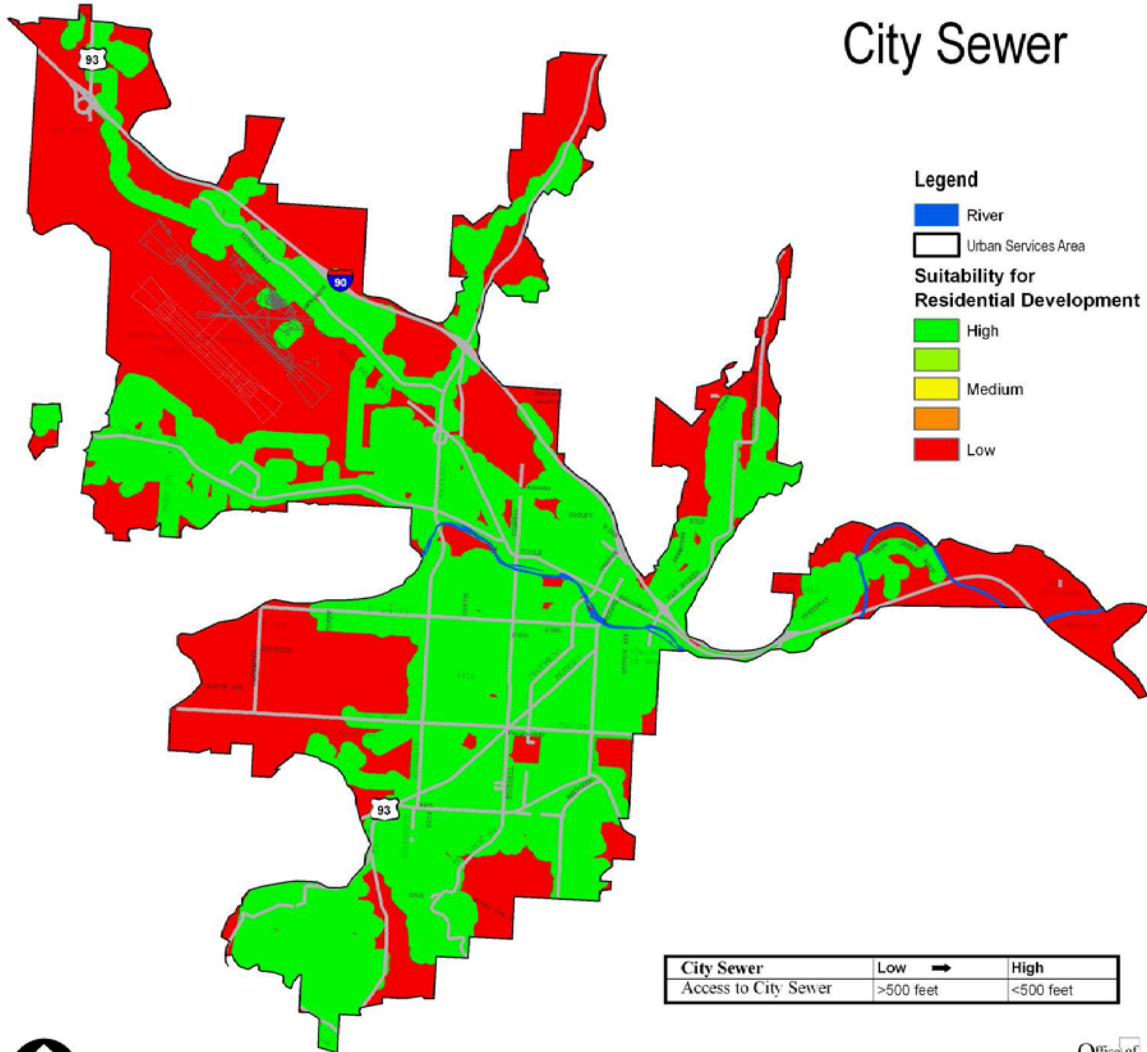


EXHIBIT G2-2
UFDA Project City Sewer

City Sewer



Map by C. Wilson July 12, 2008
Montana State Plane, NAD 83, feet
D:\projects\625UFDA_suitability.mxd

0 0.5 1 2 Miles

UFDA Project



EXHIBIT G2-3
 UFDA Project Transportation Access

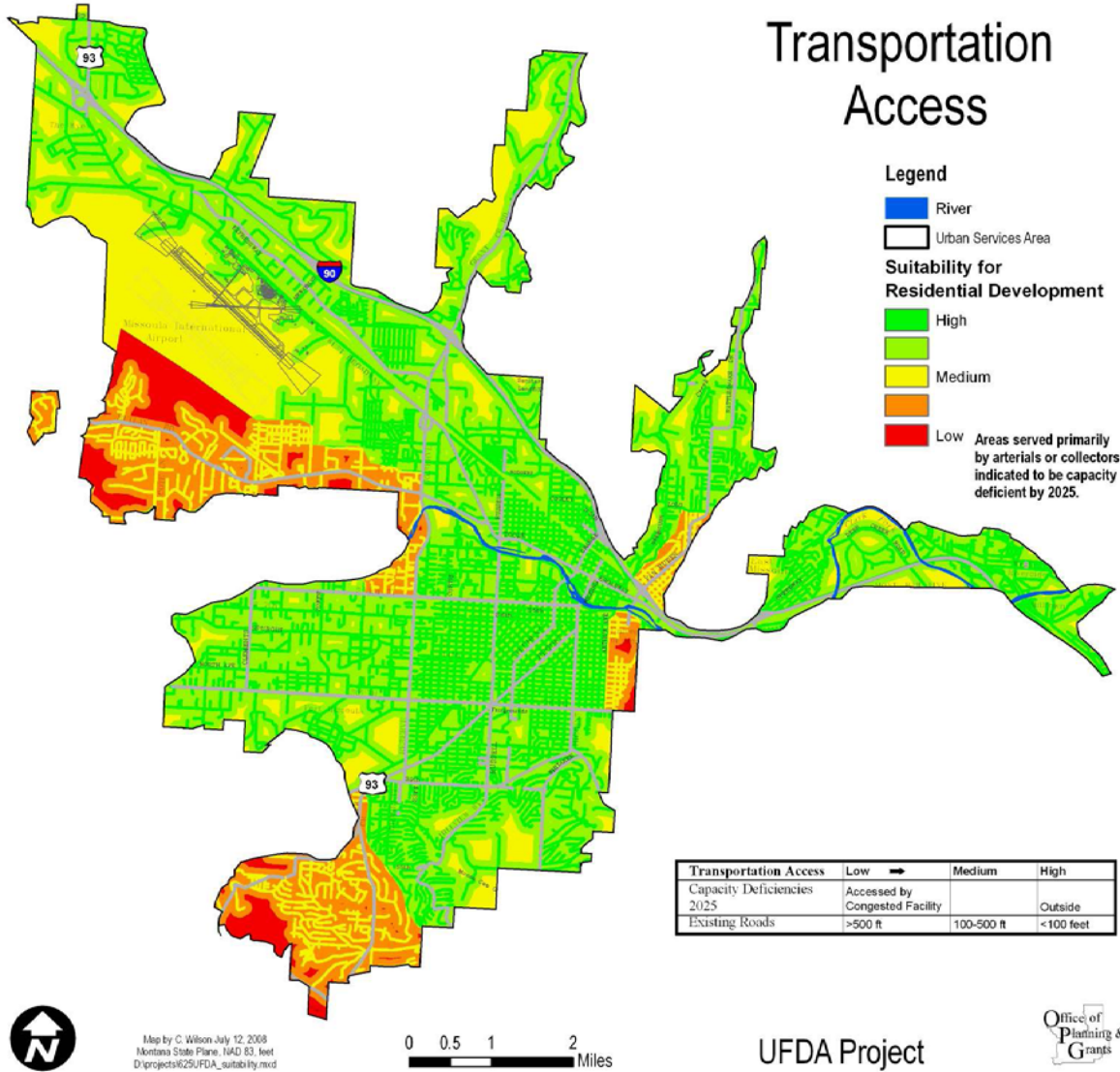
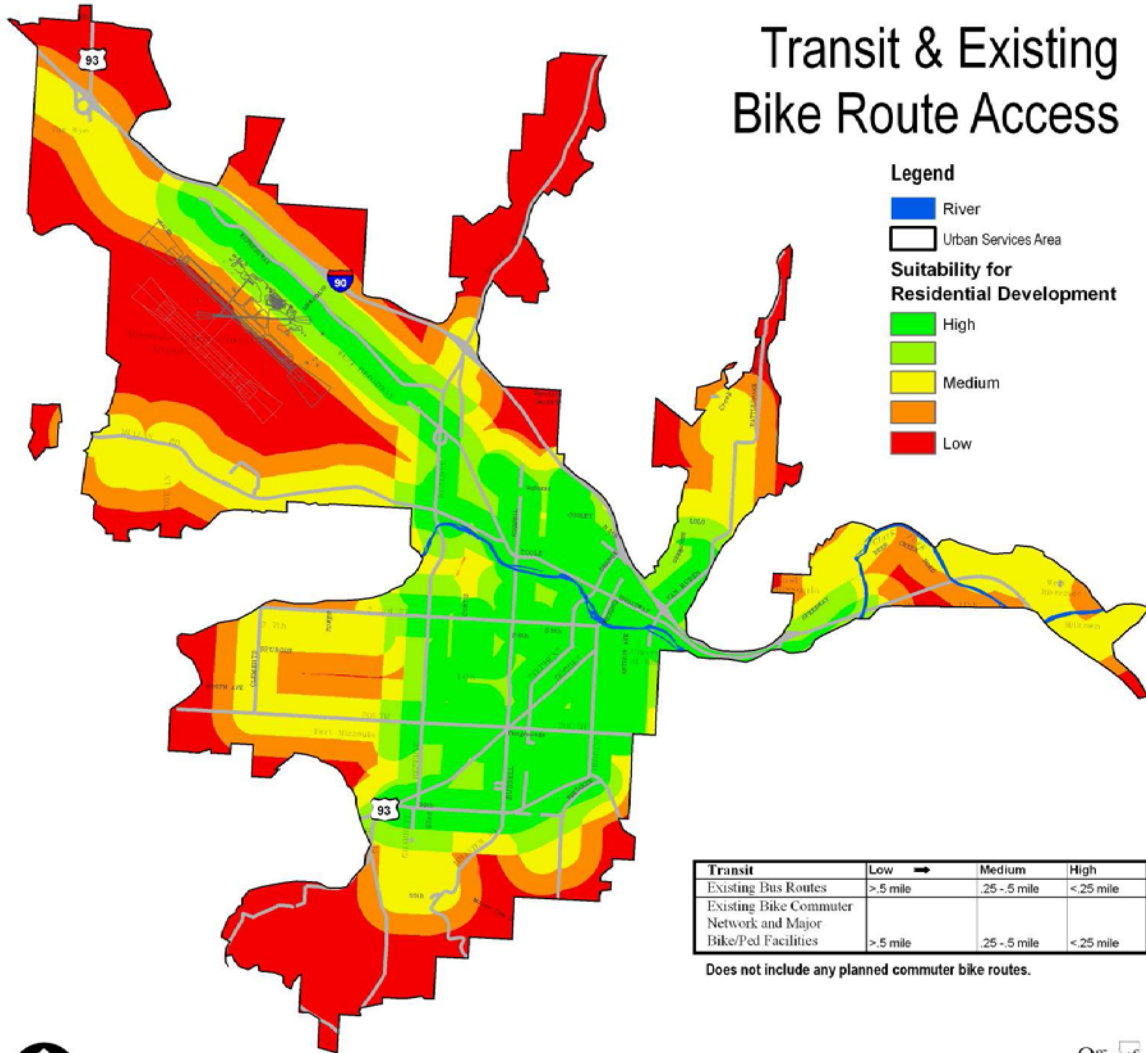


EXHIBIT G2-4
 UFDA Project Transit & Existing Bike Route Access

Transit & Existing Bike Route Access



Map by C. Wilson July 12, 2008
 Montana State Plane, NAD 83, feet
 D:\projects\625UFDA_suitability.mxd

0 0.5 1 2 Miles

UFDA Project



EXHIBIT G2-5
 UFDA Project City Fire Travel Response Time

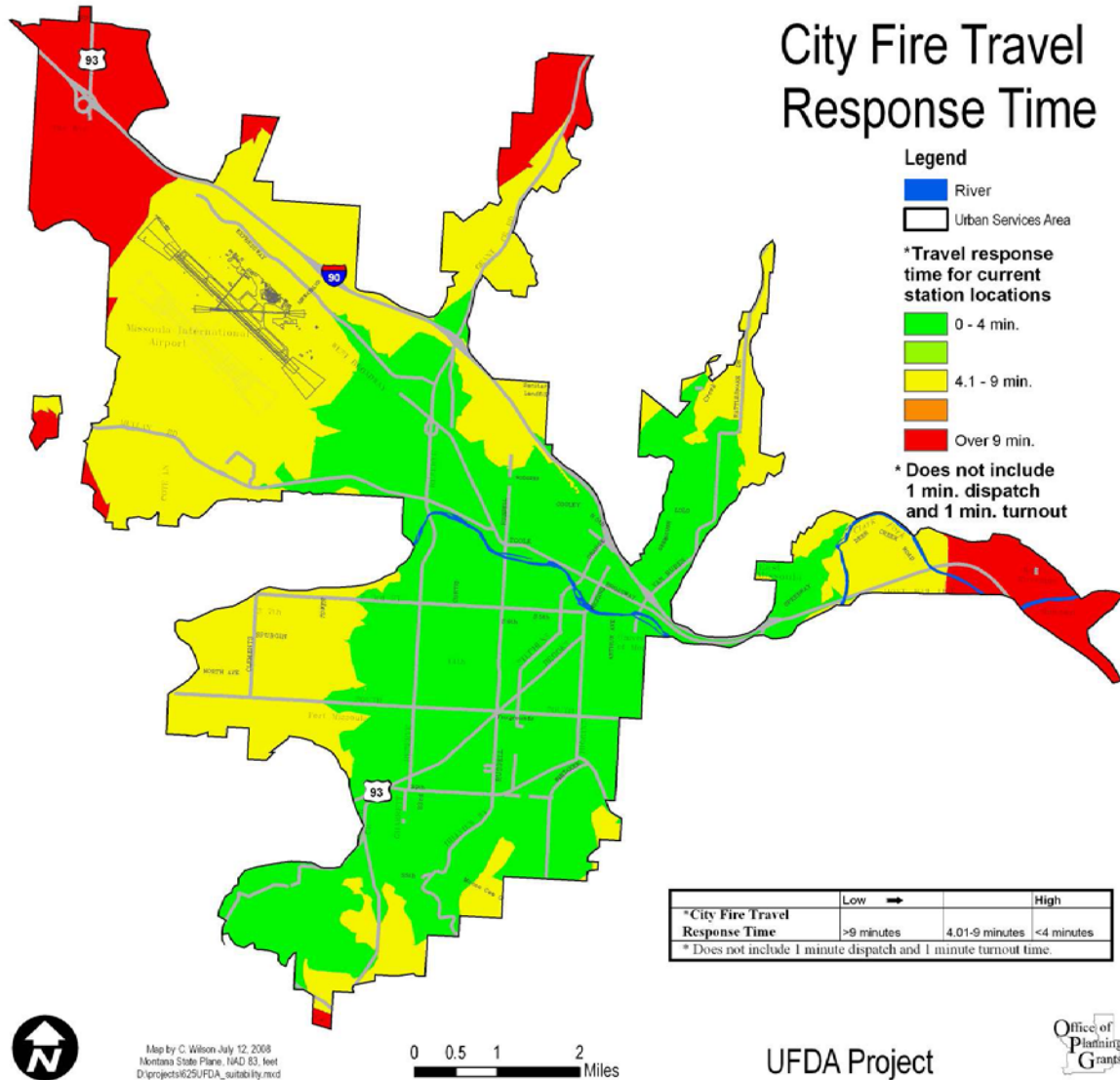
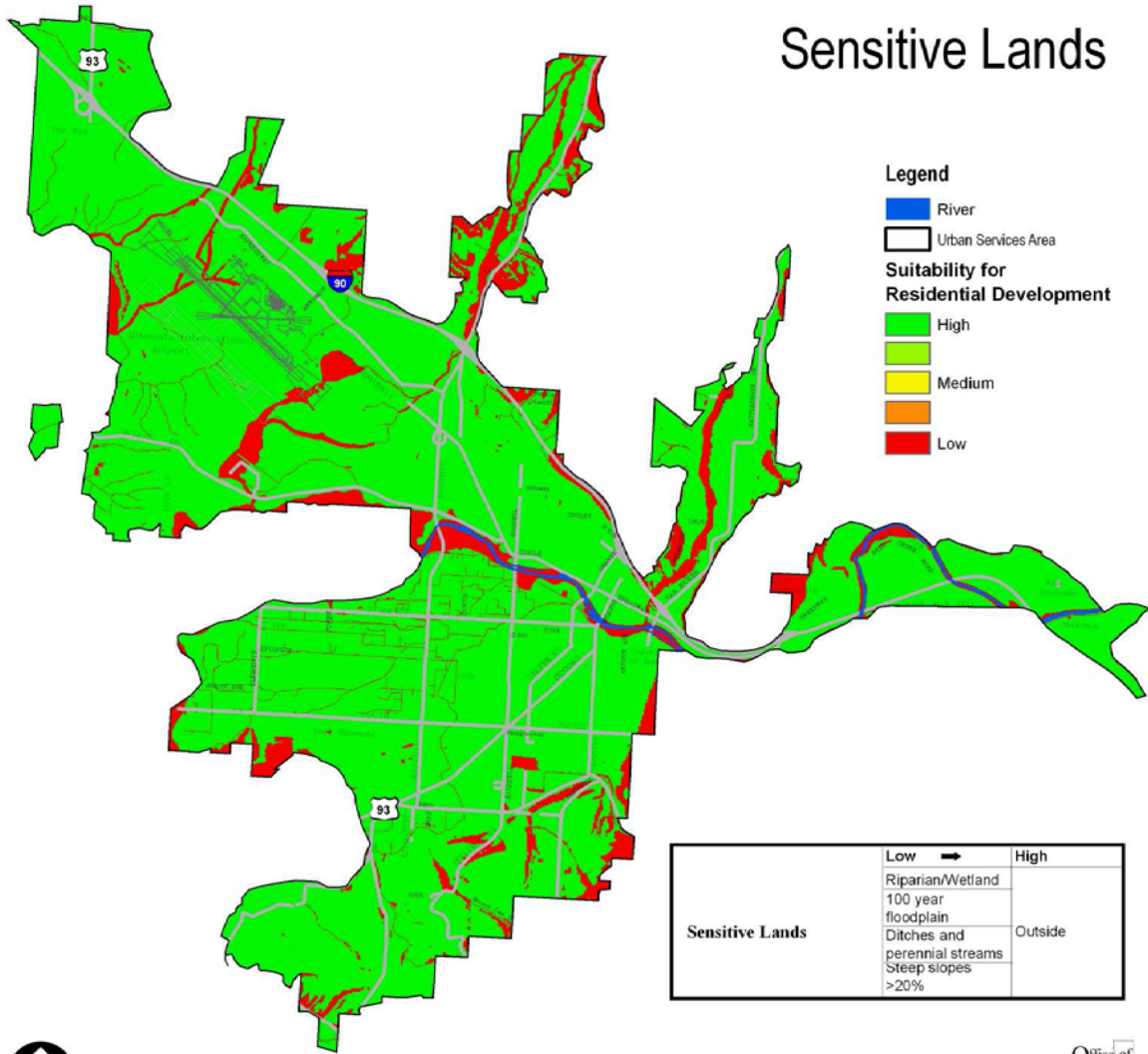
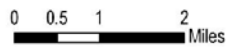


EXHIBIT G2-6
 UFDA Project Sensitive Lands

Sensitive Lands



Map by C. Wilson July 12, 2006
 Montana State Plane, IAD 83, feet
 D:\projects\625UFDA_suitability.mxd

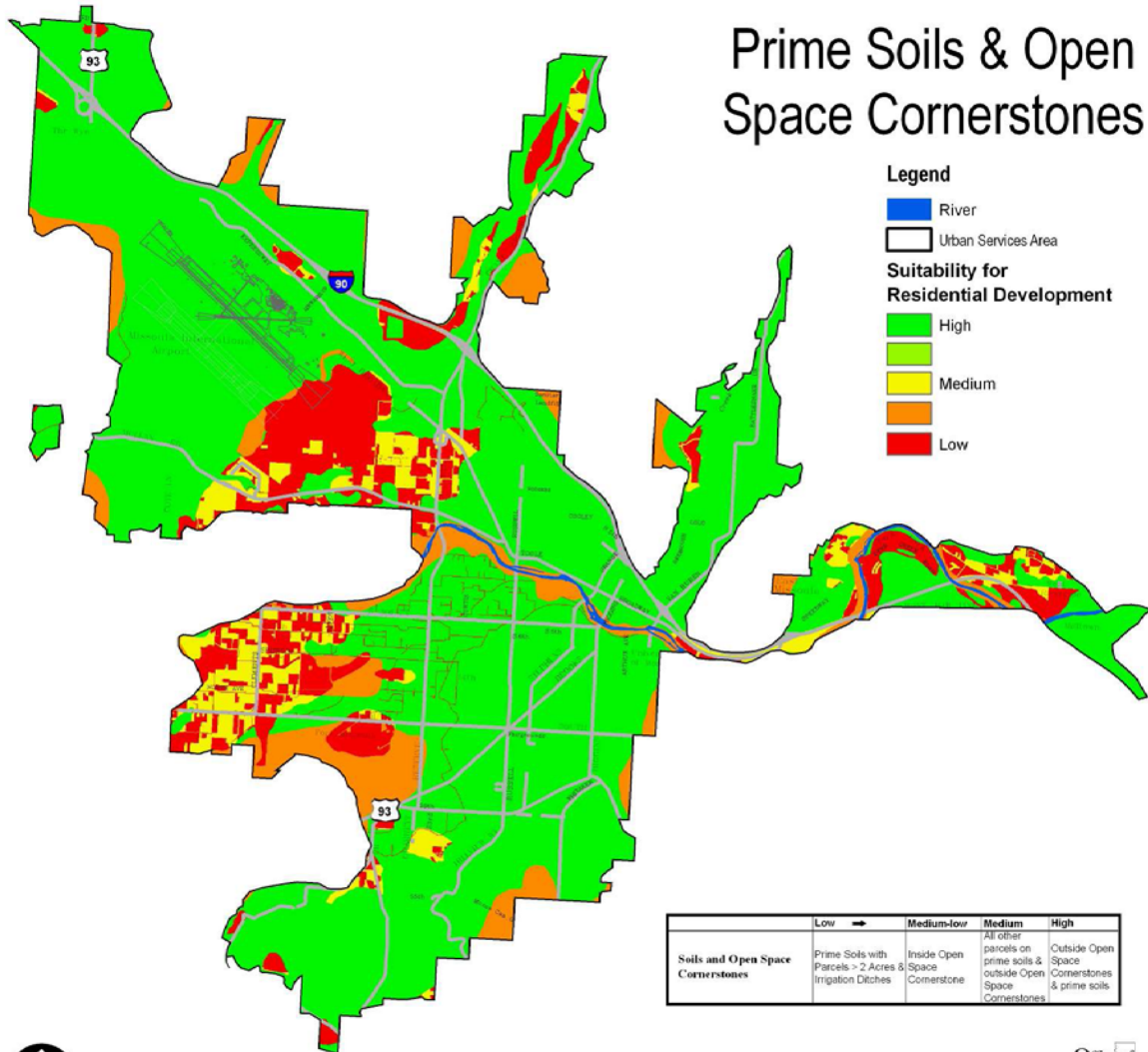


UFDA Project



EXHIBIT G2-7
 UFDA Project Prime Soils & Open Space Cornerstones

Prime Soils & Open Space Cornerstones



Map by C. Wilson July 12, 2008
 Montana State Plane, NAD 83, feet
 D:\project\G2\UFDA_suitability.mxd

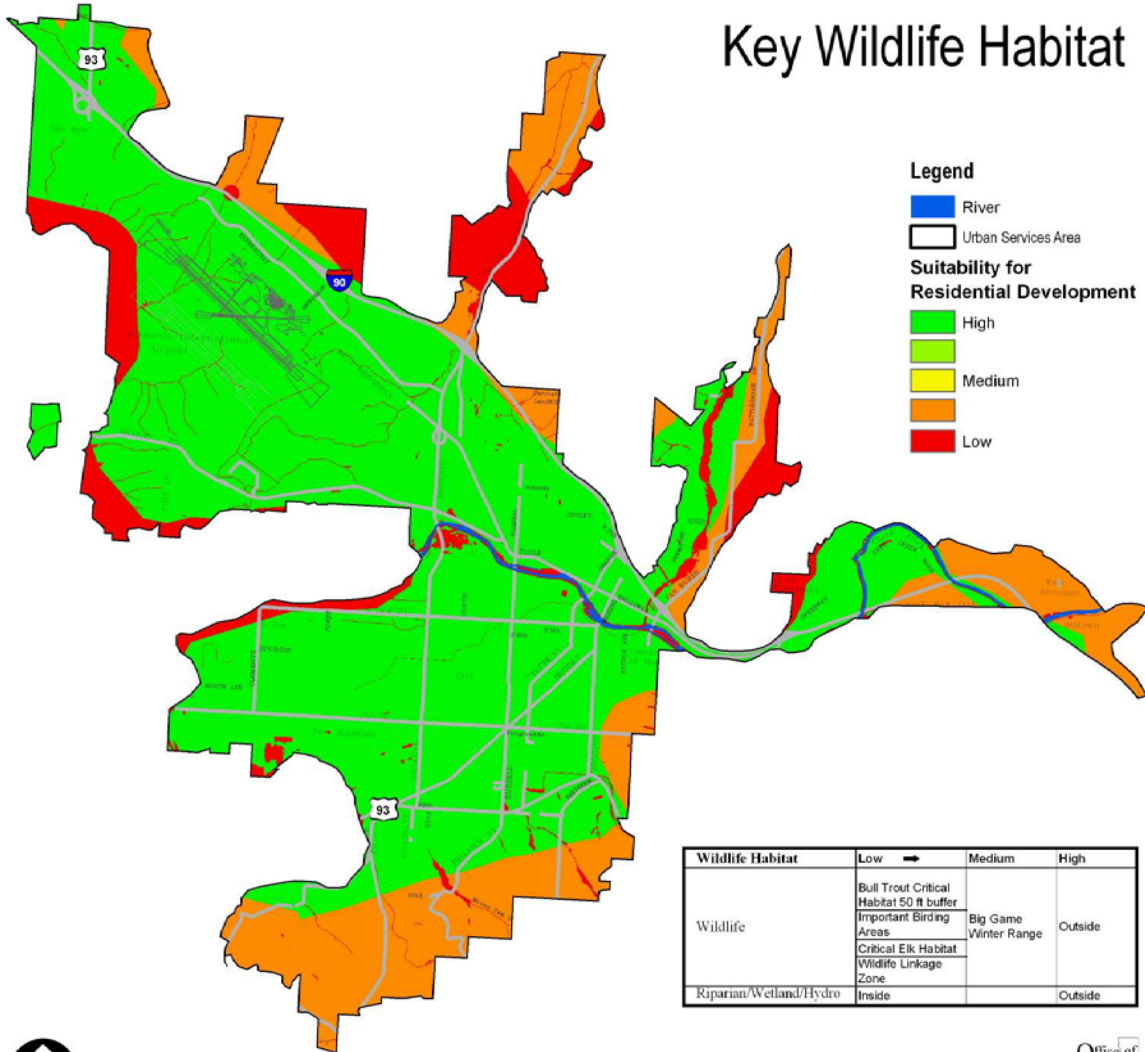
0 0.5 1 2 Miles

UFDA Project



EXHIBIT G2-8
UFDA Project Key Wildlife Habitat

Key Wildlife Habitat



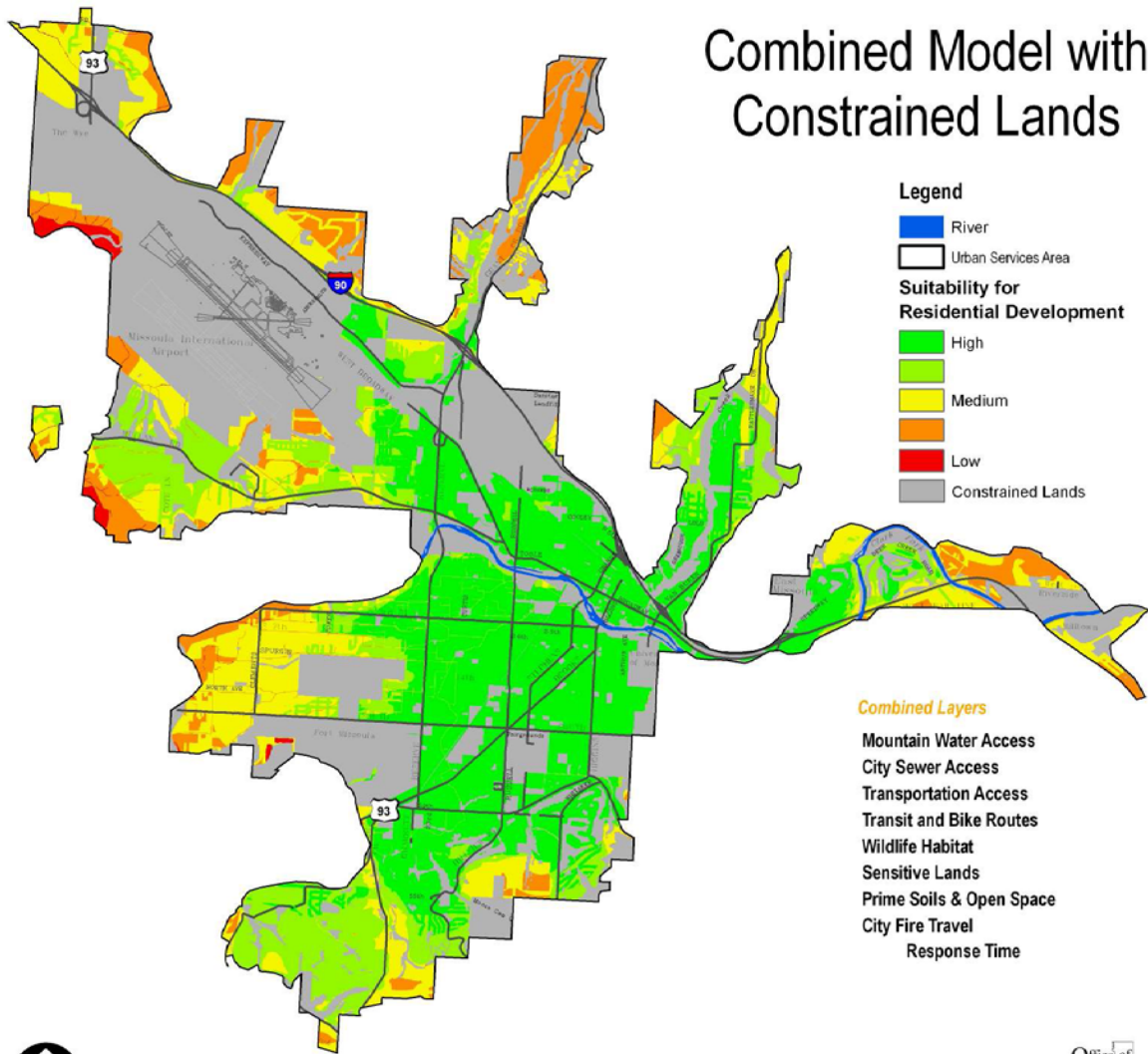
Map by C. Wilson July 12, 2008
Northwest State Plane, 10AD 83, feet
D:\projects\625UFDA_suitability.mxd

0 0.5 1 2 Miles

UFDA Project



EXHIBIT G2-9
 UFDA Project Combined Model with Constrained Lands



Combined Model with Constrained Lands

- Legend**
- River
 - Urban Services Area
- Suitability for Residential Development**
- High
 - Medium
 - Low
 - Constrained Lands

- Combined Layers*
- Mountain Water Access
 - City Sewer Access
 - Transportation Access
 - Transit and Bike Routes
 - Wildlife Habitat
 - Sensitive Lands
 - Prime Soils & Open Space
 - City Fire Travel
 - Response Time



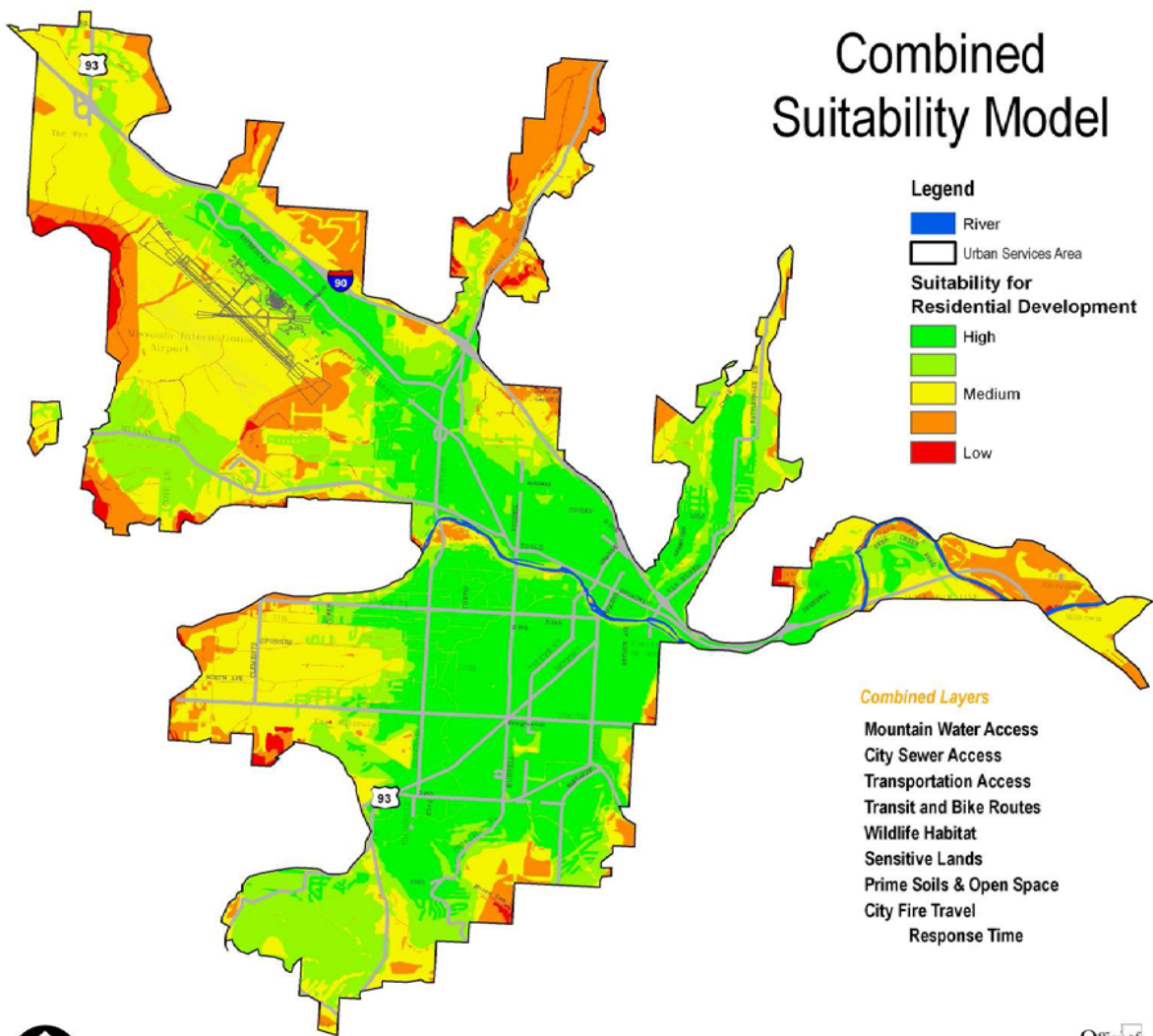
Map by C. Wilson July 12, 2008
 Montana State Plane, NAD 83, feet
 D:\projects\625UFDA_suitability.mxd



UFDA Project



EXHIBIT G2-10
 UFDA Project Combined Suitability Model



Map by C. Wilson July 12, 2008
 Montana State Plane, NAD 83, feet
 D:\projects\625UFDA_suitability.mxd

0 0.5 1 2 Miles

UFDA Project



Appendix G3

NAICS Target Industry Analysis Methodology

Below is a list of the factors which served as the basis of the target industry model prepared specifically for the five-county region of Missoula Region, listed separately for manufacturing and non-manufacturing. Each industry is rank-ordered for each factor, and receives a score based on the percentile it places in for the particular factor: for example, the industry that comes up top in a factor ranking receives a score of one, the median industry scores 0.5 and the lowest scores zero. The overall score of the industry is a weighted sum of the scores associated with each factor: some factors are more heavily weighted than others.

G3.1 Manufacturing

G3.1.1 Growth Factors

- Projected Industry Output Growth, U.S., 2007-12
Weight=2
- Projected Industry Employment Growth, U.S., 2007-12
Weight=2
- Projected Industry Employment Growth, MONTANA State, 2007-12
Weight=4

These factors are meant to ensure that growing industries are included and declining industries are discarded. The first one identifies industries that are expected to grow in importance nationally in terms of output. The other two look at employment. Industries where output is projected to grow faster than productivity, resulting in more projected jobs nationally and regionally, are favored by these two factors. State-level projections were utilized rather than projections specific to the region because state-level growth is a more appropriate measure of opportunities.

G3.1.2 Wage Factors

- Industry Wage Index, U.S., 2007
Weight=3
- Industry Wage Index, Missoula Region, 2007
Weight=2

These factors are meant to identify industries that pay better than average wages, compared to the national and regional manufacturing average. These are industries that are more desirable for recruitment, because they generate higher incomes, taxes and wealth.

G3.1.3 Location Quotients

- Industry Location Quotient, Missoula Region, 2007
Weight=3
- Industry Location Quotient, MONTANA State, 2007
Weight=1

Location Quotients have already been defined as an industry's share of total employment in the region, divided by the corresponding share nationally. They describe how concentrated

an industry is in the region of study. Included in the analysis were industries in both Missoula Region and Montana State (the latter with a much smaller weight). Industries with a high existing concentration have the advantage of a base of skills and supply chain networks. However, relatively lower weights are assigned to such industries as they often tend to overpower new and emerging businesses of the same nature.

G3.1.4 Productivity and Profitability

- Industry Productivity Index, Missoula Region, 2007
Weight=3
- Projected Change in Industry Profitability, Missoula Region, 2007-12
Weight=2

The industry productivity index is output per worker in Missoula Region divided by the corresponding number in the U.S. An index of over 1 means that labor productivity in the region is higher than the national average. Industries with high productivity indices have an advantage and would be hood targets for recruitment, retention and expansion, and are less likely to leave. The Input-Output model utilized also calculates industry profitability in the region, and projects changes in profitability, based on labor and other costs, productivity and output growth. Industries with strong projected growth in profitability are also good target industries.

G3.2 Nonmanufacturing

Because of their weaker connection to technology and supply chains and the higher mobility of their workers, service industries are harder to analyze. Still, a similar analysis was conducted for nonmanufacturing industries, with slightly different weights. One important lesson was that Lewis and Clark County, with its very large inventory of media and financial services industries, would significantly skew the results of the target industry analysis for the entire Montana region. Therefore, weights were kept low for state-level factors. As the explanations and justifications are the same as in manufacturing, they will not be repeated.

G3.2.1 Growth Factors

- Projected Industry Output Growth, U.S., 2007-12
Weight=1
- Projected Industry Employment Growth, U.S., 2007-12
Weight=2
- Projected Industry Employment Growth for Montana State, 2007-12
Weight=2

G3.2.2 Wage Factors

- Industry Wage Index, U.S., 2007
Weight=3
- Industry Wage Index, Missoula Region, 2007
Weight=2

G3.2.3 Location Quotients

- Industry Location Quotient, Missoula Region, 2007
Weight=4
- Industry Location Quotient, Montana State, 2007
- Weight=1

G3.2.4 Productivity and Profitability

- Projected Change in Industry Profitability, Missoula Region, 2007-12
Weight=2

Productivity factors were not included because they distort the analysis. In many service industries labor productivity (output per worker) has more to do with the value and price of the product than with the physical productivity of the workers.

Appendix G4

NAICS Target Industry Analysis Raw Results

Applying the methodology to the data gave the raw results in the following tables.

TABLE G4-1
Top 20 Manufacturing Industries

5-Digit NAICS Industry	Industry	Rank	Cluster
32541	Pharmaceutical and Medicine Manufacturing	1.00	Pharma/Bio
33911	Medical Equipment and Supplies Manufacturing	2.00	Pharma/Bio
33392	Material Handling Equipment Manufacturing	3.00	General Machinery, Equipment and Components
32732	Ready-Mix Concrete Manufacturing	4.00	Non-Metallic Minerals
33231	Plate Work and Fabricated Structural Product Manufacturing	5.00	Metals forming and fabrication
32621	Tire Manufacturing	6.00	Plastics & Rubber Manufacturing
33331	Commercial and Service Industry Machinery Manufacturing	7.00	General Machinery, Equipment and Components
32739	Other Concrete Product Manufacturing	8.00	Non-Metallic Minerals
33232	Ornamental and Architectural Metal Products Manufacturing	9.00	Metals forming and fabrication
32121	Veneer, Plywood, and Engineered Wood Product Manufacturing	10.00	Agricultural and Resource
32562	Toilet Preparation Manufacturing	11.00	Chemicals Manufacturing
33312	Construction Machinery Manufacturing	12.00	General Machinery, Equipment and Components
32191	Millwork	13.00	Agricultural and Resource
32619	Other Plastics Product Manufacturing	14.00	Plastics & Rubber Manufacturing
33531	Electrical Equipment Manufacturing	15.00	Electronic Components
33151	Ferrous Metal Foundries	16.00	Metals forming and fabrication
33152	Nonferrous Metal Foundries	17.00	Metals forming and fabrication
33271	Machine Shops	18.00	Metals forming and fabrication
33221	Cutlery and Hand tool Manufacturing	19.00	Metals forming and fabrication
31192	Coffee and Tea Manufacturing	20.00	Food and Beverage

TABLE G4-2
Top 20 Services Industries

5-Digit NAICS Industry	Industry	Rank
54162	Environmental Consulting Services	1
51419	Other Information Services	2
62133	Offices of Mental Health Practitioners (except Physicians)	3
54172	Research and Development in the Social Sciences and Humanities	4
54169	Other Scientific and Technical Consulting Services	5
54151	Computer Systems Design and Related Services	6
62134	Offices of Physical, Occupational and Speech Therapists, and Audiologists	7
54149	Other Specialized Design Services	8
62121	Offices of Dentists	9
56121	Facilities Support Services	10
51412	Libraries and Archives	11
53249	Other Commercial and Industrial Machinery and Equipment Rental and Leasing	12
62139	Offices of All Other Health Practitioners	13
51213	Motion Picture and Video Exhibition	14
56145	Credit Bureaus	15
62161	Home Health Care Services	16
62141	Family Planning Centers	17
62131	Offices of Chiropractors	18
56111	Office Administrative Services	19
51421	Data Processing Services	20