Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Creation of A Low Power Radio Service	)	MM Docket No. 99-25
	)	
Amendment of Service and Eligibility Rules for	)	MB Docket No. 07-172
FM Broadcast Translator Stations	)	RM-11338

COMMENTS OF
PROMETHEUS RADIO PROJECT
REC NETWORKS
COMMON FREQUENCY

Brandy Doyle
Policy Director
Prometheus Radio Project
P.O. Box 42158
Philadelphia, PA
(215) 727-9620 x518

Michelle (Michi) Eyre
Founder
REC Networks
3841 N Dowling Ct.
Prescott Valley, AZ 86314
(202) 621-2355

Todd Urick
Technical Director
Common Frequency
PO Box 4301
Davis, CA 95617
(530) 792-0763

Cheryl A. Leanza
Consultant
A Learned Hand, LLC
www.alearnedhand.com

Andrew Jay Schwartzman
Chrystiane Pereira
Media Access Project
1625 K Street, NW
Suite 1000
Washington, DC 20006
(202) 232-4300
Counsel for Prometheus Radio Project

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JOINT PROPOSAL OF PROMETHEUS RADIO PROJECT, REC NETWORKS, AND COMMON FREQUENCY ON THE ASSESSMENT OF LPFM AVAILABILITY

In these comments, the Prometheus Radio Project, REC Networks, and Common Frequency ("LPFM Advocates") support the general direction of the Third Further Notice of Proposed Rulemaking[1] and propose modifications to the Commission's methodology and criteria for assessing LPFM channel availability. The Commission has done an excellent job developing a reasonable approach to a difficult issue – the relative access to spectrum for existing translator applicants and future LPFM applicants, a balancing act required by the Local Community Radio Act ("LCRA"). The Commission has made substantial strides in identifying a mechanism that will be as fair as possible to all parties. Nevertheless, we argue below that the Commission should further refine its proposal to more completely comply with the directive of the LCRA to ensure spectrum for future LPFM licensing based on the needs of local communities.

I. The Commission's Market-Specific Spectrum Analysis is the Best Approach, But the Methodology Must be Modified to Better Ensure LPFM Station Availability in Locations that Could Serve Signification Populations.

LPFM Advocates support a market-specific approach to ensuring spectrum for future LPFM stations, and we commend Commission staff for the exhaustive analysis of spectrum availability supporting the proposals put forward in the Third Further Notice of Proposed Rulemaking. As outlined in detail in accompanying comments, we concur with the Commission's tentative conclusion that effectuating Section 5(1) of the LCRA must ensure

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[1] *Third Further Notice of Proposed Rulemaking*, MM Docket 99-25, FCC 11-105 (rel. July 12, 2011).

translator licensing procedures do not foreclose or unduly limit future LPFM licensing.[2] In addition, we concur with the Commission's proposal to adopt a "floor," i.e., a minimum number of LPFM channels in each of the top 150 Arbitron markets.[3] This will ensure available spectrum for LPFM stations as required by the LCRA.

We also wish to thank the Commission for its careful review of the Common Frequency studies on the potential impact of the ten-application translator processing cap on pending Auction 83 translator applications. As the Commission has acknowledged, the ten-cap would not have been a certain and effective policy to preserve LPFM availability in many markets. The ten-cap therefore would not have complied with the LCRA directives. We applaud the Commission's move away from this well-intentioned but potentially disastrous policy.

Despite this tremendous and detailed effort by the Commission, we nonetheless feel compelled to point out several shortcomings that could have severe unintended consequences to the availability of low power radio stations, and thus result in a potential violation of the statute. We take these steps because of the severe shortage of space for future low power radio licensing and the dramatic consequences that could result from overestimating availability. Specifically, the Commission has proposed floors in each market that would preserve a minimum of only 5 to 8 stations in the central area of any given market, depending on the market's size.[4] Thus, overestimating by even two LPFM stations in a market would result in between 25% to 40% fewer stations in that market than the Commission is attempting to ensure. For this reason, it is

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[2] *See* Joint Comments of Prometheus Radio Project, Future of Music Coalition, and United Church of Christ in this proceeding.

[3] For our recommendations to changes to this floor, see section II, infra.

[4] Third Further Notice of Proposed Rulemaking, MM Docket 99-25, FCC 11-105 at ¶26.

appropriate for the Commission to proceed with more conservative estimation techniques and be as sure as possible that these techniques are not inadvertently assuming LPFM stations could occur where they cannot.

A. The Commission Should Utilize a 21x21 Grid Instead of a 31x31 Grid.

In creating the market-by-market plan, Commission staff overlaid a 31x31 minute grid over the center point of each of the 150 top Arbitron markets. The Commission then evaluated whether a low power radio station would be available on each of the 100 FM channels on each of the 961 points in such a grid. Channels were deemed available if they satisfied minimum spacing requirements with respect to all co-, first-, and second-adjacent channel authorizations and applications. After eliminating any "available" channels that would be mutually exclusive with other available channels, the Commission counted the total number of channels available for a new low power station in each market.

We believe the Commission's methodology requires further refinement. Specifically, the 31x31 minute grid represents a study area far too large to adequately evaluate spectrum availability in most urban areas. By using such a large area to measure LPFM availability, the Commission inflates the number of apparently available LPFM channels, even though many of these channels are not in areas with meaningful (or in some cases any) population.

REC Networks has studied LPFM availability in the top 150 markets using the 31x31 grid proposed by the FCC. These studies found that in a number of markets, some of the channels marked "available" according to the FCC's spectrum analysis software have no reported census block group population within the 5.6km service contour of a potential station at that grid location. (See Appendix A.) While we recognize that the Commission's model did not

propose to evaluate the suitability of every channel found through its search, the number of supposedly available channels that would cover a population of zero listeners is an indicator that the underlying methodology contains some flaws: the study area is too large to serve the Commission's goal "to identify 'core' market locations that could serve significant populations."[5]

We therefore propose that the FCC set a smaller grid size of 21x21 minutes. This would focus the Commission's analysis on the most populous portions of each Arbitron market, increasing the likelihood that the Commission's analysis identifies those locations with populations that would apply for, and listen to, low power radio stations. This adjustment to the Commission's proposal would comply with LCRA directives to ensure LPFM licensing without the added complexity of more granular approaches.

Using this smaller grid is an effective means to address the problem of seemingly available LPFM channels that in fact cover zero population. The REC Networks study (see Appendix A) demonstrates that 75% of such channels across all markets are located within the 31x31 grids but not within the 21x21 grids. Although even the smaller grids contain some such channels, we believe that this smaller study area can offer a reasonable approximation of channel availability if coupled with the other proposals addressed here.

More generally, the smaller grid better addresses the Commission's goal to locate channels that could serve significant populations. In nearly every market, the area outside the 21x21 grid represents more sparsely populated suburbs and in some cases largely unpopulated areas, rather than core market locations. Averaged across all markets (except those contained within other markets), 73% of the population in the 31 x31 grid is contained within the 21x21

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[5] *Third Further Notice of Proposed Rulemaking*, MM Docket 99-25, FCC 11-105, Appendix A.

grid.[6] Channels within the smaller grid are thus much more likely to be usable, and the stations on these channels are more likely to be viable in the long term. Appendix B of this filing includes maps of every tenth market, showing the outlines of both the grids, along with urban areas and urban clusters. In most markets, one can see that the urban area is entirely contained within the smaller grid.

In several markets, the population of the 21x21 grid represents more than 90% of the population of the larger grid, demonstrating the extremely sparse population of the larger area. Channels identified as available for LPFM outside the 21x21 grid thus are extremely unlikely to be usable. In such markets, areas outside the 21x21 grid represent desert areas, such as are found in the Flagstaff, Reno, Albuquerque and Tucson markets, or agricultural land, such as is found in the Wichita market. In the Flagstaff market, 100% of the population in the 31x31 grid is within the smaller 21x21 grid. Maps of these markets are included in Appendix B as well. Yet even in most densely populated areas, such as the Trenton, New Jersey market, between the large New York and Philadelphia markets, the majority of the population of the larger grid is contained within the smaller grid. This is true in all but one of the Top 150 markets.

Because the FCC spectrum analysis software used to generate the current proposal already includes an option for a 21x21 grid, this also appears to be the simplest LCRA-compliant option for Commission staff to implement.

B. The Commission Should Exclude Channels over Foreign Soil or Bodies of Water in its Count of Available Frequencies.

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[6] We have eliminated smaller markets contained within the New York and San Francisco markets in calculating this figure, because the more dispersed population in these markets is due to the overlap with the larger market. Even within these markets-within-markets, however, the smaller grids do represent areas of greater population density than do the larger grids.

In addition to improving its assessment of LPFM availability in areas of significant population, the Commission's methodology should exclude channels over foreign soil or bodies of water. The Commission's LPFM6 program does so in some markets using a "water file" to denote the locations of bodies of water, and in some cases foreign locations, so they are not counted as as available locations for LPFM. However, we believe that the Commission has missed some locations where water files are needed. We share two examples here.

El Paso, Texas. The Commission's report found a large number of available channels and locations in El Paso, despite its proximity to the urban areas across the Mexican border. The Commission used a water file for McAllen, Texas, to denote areas inside Mexico which are outside of the Commission's jurisdiction. However, the Commission appears to have not used a water file when calculating El Paso, despite a considerable part of the study area being in Mexico. This has resulted in channels and locations in Mexico identified as available and counted towards the channel floor. We have also found that some vacant allotments that are in CDBS that are also in the international agreement[7] between the United States and Mexico were not protected in the FCC search. For example, the Commission's report shows extensive availability of channel 298C in Ciudad Juarez, Chihuahua (on both the American and Mexican side of the border).

Santa Barbara, California. The water file used in the Commission's distribution was for a 21x21 grid and not a 31x31 grid. Therefore, it seems that the identified LPFM channels for this market may include many areas under water.

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[7] See "Agreement Between The Government of The United States of America and The Government of The United Mexican States Relating To The FM Broadcasting Service In The Band 88-108 MHz," table of allotments.

We urge the Commission to correct for these apparent omissions and extend the use of "water files" to all markets where needed.

II. The Commission Should Address the Overestimation of LPFM Channel Availability by Increasing the Channel Floors.

LPFM Advocates support the Commission's adoption of LPFM channel floors, but we propose that these floors be set higher. Given the consistent overstatement of LPFM availability in the Commission's methodology, the proposed floors are too low to achieve the envisioned LPFM license availability.

The Commission acknowledges that availability determinations "likely overstate, and in some cases may substantially overstate the number of potential bona fide licenses that will be available to future LPFM applicants in each market."[8] The unknown factors in determining availability, as stated by the Commission, include "[s]ite suitability and availability, population levels near studied locations, and demand for LPFM licenses at these locations,"[9] as well as reduced availability due to future full-power licensing and modifications. Our proposal to reduce the study area in each market partially addresses the question of population levels.[10] However, even if the Commission were to adopt that proposal, the other factors listed here will prompt the overstatement of LPFM availability in nearly every market. Thus, for example, even if the Commission adopts a methodology more likely to omit channels in areas with no population, the

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[8] *Third Further Notice of Proposed Rulemaking,* MM Docket 99-25, FCC 11-105 at ¶10.

[9] *Id.*

[10] We believe that a smaller, 21x21 grid is an effective way to better ensure that identified LPFM channels will serve populated areas. However, we note that even in the 21x21 grid some available channels serve a population of zero within the 5.6km contour of the proposed station (see Appendix A). This reinforces the need for a higher floor to offset identified LPFM channels that are in fact not usable.

Commission still may rely on some locations with no suitable tower location or no demand or capacity to produce a LPFM station at that spot--despite the fact that the overall Arbitron market does contain a large number of potential applicants and listeners for LPFM. Addressing each of these factors would create an onerous processing burden on Commission staff, and in some cases, would be logistically impossible.

To account for the consistent and in some cases substantial overstatement of LPFM availability, the Commission must set higher floors. We therefore advocate that the Commission raise each of the floors by a minimum of 25% to account for this overstatement. Rounding to the nearest whole numbers, the floors then would be:

Markets 1-20:	10 LPFM channels
Markets 21-50:	9 LPFM channels
Markets 51-100:	8 LPFM channels
Markets 101-150:	6 LPFM channels

Although LPFM availability in certain markets does not reach even the currently proposed, lower floors, in other markets setting higher floors will enable the desired outcome of a "robust, dynamic and permanent LPFM service in larger markets."[11]

III. The Commission Should Count Only Future Licensing Opportunities Towards the LPFM Channel Floors and Resolve the Present Disparity Between the Two Services By Ensuring as Many LPFM Licensing Opportunities As Possible.

The Commission seeks comment on whether to take into account existing translator and LPFM licenses in making a "licenses are available" finding.[12] Section 5 of the LCRA states: "The Federal Communications Commission, when licensing new FM translator stations, FM

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[11] *Third Further Notice of Proposed Rulemaking,* MM Docket 99-25, FCC 11-105 at ¶25.

[12] *Third Further Notice* at ¶11.

booster stations, and low-power FM stations, shall ensure that (1) licenses are available to FM translator stations, FM booster stations, and low-power FM stations." The Commission correctly concludes that in this passage Congress intends for the FCC to take existing licenses into consideration in the creation of future licensing opportunities. A "going-forward standard" is neither stated nor implied, nor is such a standard consistent with the FCC's Congressionally mandated objective of fair, efficient, and equitable radio service. Nothing in Section 5 suggests that the Commission relinquish its statutory obligation to set a fair distribution of radio service by ignoring the current state of radio service when setting future policy.[13]

In its consideration of existing licenses, the Commission appropriately highlights the present disparity between the LPFM and translator services, noting that the relative lack of LPFM stations would "militate" the dismissal of translator applications.[14] The Commission further states that it will be significantly easier to ensure that licenses will be available for future translator stations than for future LPFM stations. On the basis of these observations, the Commission establishes that the Commission's primary focus in effectuating Section 5(1) must be to ensure that its translator licensing procedures do not foreclose or unduly limit future LPFM licensing.

Yet the Commission's method of accounting for existing licenses in its processing plan has the effect of increasing the asymmetry between the two services. This method allows any

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[13] *See* 47 U.S.C. § 307(b) ("Section 307(b)").

[14] See *Third Further Notice* at ¶ 11-12 ("The issue whether to take existing licenses into account may be particularly significant in light of the present disparity between the two services...Thus, taking into account existing translators and LPFM stations...would militate in favor of the dismissal of translator applications, at least in markets where there is little or no remaining spectrum for future LPFM stations or where substantially fewer licensing opportunities remain.")

existing LPFM licenses to reduce the number of future LPFM licenses available in that market, regardless of how egregious the present disparity between the two services. The Commission does not tie its policy to the overall balance between the two services, instead accounting for existing licenses in a manner that actually militates fewer LPFM stations.

Given that this method exacerbates rather than ameliorates the asymmetry between the two services, we do not think this is an appropriate manner of "taking into account" the state of existing licenses today. We therefore urge the Commission to count only new licensing opportunities when assessing LPFM channel availability, and to account for the disparity between existing licenses in the two services simply by ensuring as many LPFM license opportunities as possible.

V. Conclusion

In sum, LPFM Advocates encourage the Commission to use its market-by-market analysis, but to revise its methodology for estimating future available LPFM stations by using a 21x21 minute grid. In addition, we urge an increase of 25% to the LPFM channel floors and ask the Commission to better account for channels over water and foreign soil. We ask that the Commission not count existing LPFM licenses against the channel floors, as this does not address the present disparity between LPFM stations and translators.

Respectfully submitted,

/s/

Brandy Doyle Policy Director Prometheus Radio Project P.O. Box 42158 Philadelphia, PA (215) 727-9620 x518 Michelle (Michi) Eyre Founder REC Networks 3841 N Dowling Ct. Prescott Valley, AZ 86314 (202) 621-2355 Todd Urick Technical Director Common Frequency PO Box 4301 Davis, CA 95617 (530) 792-0763	Cheryl A. Leanza Consultant A Learned Hand, LLC www.alearnedhand.com Andrew Jay Schwartzman Chrystiane Pereira Media Access Project 1625 K Street, NW Suite 1000 Washington, DC 20006 (202) 232-4300 Counsel for Prometheus Radio Project

APPENDIX A

LPFM Spectrum Availability and Population Data for 31x31 and 21x21 grids

This following spreadsheet uses the Commission's search methodology and census block group population data to compare the Commission's proposed 31x31 study area with the LPFM Advocates' proposed 21x21 study area. The data shows significant unpopulated areas within the 31x31 study area that are not in the 21x21 study area in many markets, supporting the use of a smaller study area.

Detailed Column Information

Population: The population in the study area
Available Channels: The number of available channels as found by REC Networks in the study area using the FCC's spectrum analysis software
Avail Chan Serving 0 Pop: Of the available channels in the previous column, the number of channels for which at each grid location where a given channel is available, there is no population within 5.6km (the service contour of an LPFM) of the reference point. A station at this location therefore would serve no listeners.
Pop as % of 31x31 Pop: The percentage of the population of the 31x31 grid contained within the 21x21 grid.
FCC Floor: The Commission's proposed LPFM channel floor for that market.
Proposed Floor: The LPFM channel floor proposed by LPFM Advocates.
FCC Disposition: The disposition of the pending translator applications in the market under the Commission's proposal
Proposed Disposition: The disposition of the pending translator applications in the market under the LPFM Advocates' proposal,

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
MARKETS 1 through 20												
1	New York	10585769	0	0	7638722	72.2%	0	0	8	10	Dismiss FX	Dismiss FX
2	Los Angeles	6966281	0	0	4390408	63.0%	0	0	8	10	Dismiss FX	Dismiss FX
3	Chicago	4410300	0	0	3421345	77.6%	0	0	8	10	Dismiss FX	Dismiss FX
4	San Francisco	2242210	0	0	1435603	64.0%	0	0	8	10	Dismiss FX	Dismiss FX
5	Dallas-Ft. Worth	2479408	2	0	1468329	59.2%	1	0	8	10	Dismiss FX	Dismiss FX
6	Houston-Galveston	2857161	1	0	1663956	58.2%	1	0	8	10	Dismiss FX	Dismiss FX
7	Atlanta	2040695	2	0	1137285	55.7%	0	0	8	10	Dismiss FX	Dismiss FX
8	Philadelphia	3389723	0	0	2374741	70.1%	0	0	8	10	Dismiss FX	Dismiss FX
9	Washington, DC	2964990	0	0	2072036	69.9%	0	0	8	10	Dismiss FX	Dismiss FX
10	Boston	2518497	0	0	1854109	73.6%	0	0	8	10	Dismiss FX	Dismiss FX
11	Detroit	2445719	0	0	1519883	62.1%	0	0	8	10	Dismiss FX	Dismiss FX
12	Miami-Ft. Lauderdale-Hollywood	2453892	0	0	1450580	59.1%	0	0	8	10	Dismiss FX	Dismiss FX
13	Seattle-Tacoma	1606933	0	0	977054	60.8%	0	0	8	10	Dismiss FX	Dismiss FX
14	Puerto Rico	1623620	12	9	1196617	73.7%	0	0	8	10	Dismiss FX	Dismiss FX
15	Phoenix	2354641	3	0	1396281	59.3%	2	0	8	10	Dismiss FX	Dismiss FX
16	Minneapolis-St. Paul	1997595	7	0	1245548	62.4%	4	0	8	10	Dismiss FX	Dismiss FX
17	San Diego	1860399	1	0	1398199	75.2%	1	0	8	10	Dismiss FX	Dismiss FX
18	Nassau-Suffolk (Long Island)	1293127	7	4	822133	63.6%	3	0	8	10	Dismiss FX	Dismiss FX
19	Denver-Boulder	2031320	3	0	1485832	73.1%	3	0	8	10	Dismiss FX	Dismiss FX
20	Tampa-St. Petersburg-Clearwater	1273906	5	0	734439	57.7%	3	0	8	10	Dismiss FX	Dismiss FX
MARKETS 21 through 50												
21	St. Louis	1477966	6	0	954968	64.6%	5	0	7	9	Dismiss FX	Dismiss FX
22	Baltimore	1914085	0	0	1387464	72.5%	0	0	7	9	Dismiss FX	Dismiss FX
23	Portland, OR	1492874	2	0	1092389	73.2%	0	0	7	9	Dismiss FX	Dismiss FX
24	Charlotte-Gastonia-Rock Hill	901771	13	0	632181	70.1%	7	0	7	9	Process FX	Dismiss FX
25	Pittsburgh, PA	1398271	3	0	1021353	73.0%	2	0	7	9	Dismiss FX	Dismiss FX
26	Riverside-San Bernardino	1700419	4	0	943492	55.5%	0	0	7	9	Dismiss FX	Dismiss FX

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
27	Sacramento	1260758	13	1	882328	70.0%	6	1	7	9	Process FX	Dismiss FX
28	Cincinnati	1459500	6	0	1008576	69.1%	2	0	7	9	Dismiss FX	Dismiss FX
29	Cleveland	1454306	1	0	1007122	69.3%	0	0	7	9	Dismiss FX	Dismiss FX
30	Salt Lake City-Ogden-Provo	962308	0	0	748041	77.7%	0	0	7	9	Dismiss FX	Dismiss FX
31	San Antonio	1380563	6	0	1174271	85.1%	4	0	7	9	Process FX	Dismiss FX
32	Kansas City	1298552	4	0	856536	66.0%	3	0	7	9	Dismiss FX	Dismiss FX
33	Las Vegas	1324026	3	0	1216806	91.9%	2	0	7	9	Dismiss FX	Dismiss FX
34	San Jose	1883988	3	0	1407524	74.7%	0	0	7	9	Dismiss FX	Dismiss FX
35	Orlando	1305102	8	1	986709	75.6%	5	0	7	9	Process FX	Dismiss FX
36	Columbus, OH	1192285	5	0	952418	79.9%	2	0	7	9	Dismiss FX	Dismiss FX
37	Austin	933892	6	0	706818	75.7%	3	0	7	9	Dismiss FX	Dismiss FX
38	Milwaukee-Racine	1136418	2	0	938497	82.6%	0	0	7	9	Dismiss FX	Dismiss FX
39	Indianapolis	1180368	4	0	852089	72.2%	1	0	7	9	Dismiss FX	Dismiss FX
40	Middlesex-Somerset-Union	1729074	1	0	842017	48.7%	0	0	7	9	Dismiss FX	Dismiss FX
41	Providence-Warwick-Pawtucket	1083757	4	0	811043	74.8%	1	0	7	9	N/A	N/A
42	Raleigh-Durham	690328	12	0	471199	68.3%	10	0	7	9	Process FX	Process FX
43	Norfolk-Virginia Beach-Newport News	1118825	3	0	756398	67.6%	2	0	7	9	Dismiss FX	Dismiss FX
44	Nashville	774207	10	0	538527	69.6%	3	0	7	9	Process FX	Dismiss FX
45	Greensboro-Winston-Salem-High Point	483147	12	0	318873	66.0%	4	0	7	9	Process FX	Dismiss FX
46	Jacksonville	864970	5	0	638080	73.8%	3	0	7	9	Dismiss FX	Dismiss FX
47	Oklahoma City	836414	11	1	631496	75.5%	4	0	7	9	Process FX	Dismiss FX
48	West Palm Beach-Boca Raton	806415	4	1	529786	65.7%	1	0	7	9	Dismiss FX	Dismiss FX
49	Memphis	895668	10	0	590857	66.0%	5	0	7	9	Process FX	Dismiss FX
50	Hartford-New Britain-Middletown	1007840	7	0	595131	59.1%	4	0	7	9	Dismiss FX	Dismiss FX
MARKETS 51 through 100												
51	Monmouth-Ocean	861145	6	1	499909	58.1%	2	0	6	7	Dismiss FX	Dismiss FX

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
52	New Orleans	1022559	8	2	937855	91.7%	5	2	6	7	Dismiss FX	Dismiss FX
53	Buffalo-Niagara Falls	981457	4	0	748747	76.3%	1	0	6	7	Dismiss FX	Dismiss FX
54	Louisville	894549	10	0	698198	78.1%	4	0	6	7	Process FX	Dismiss FX
55	Richmond	778973	21	0	620641	79.7%	13	0	6	7	Process FX	Process FX
56	Rochester, NY	727363	6	0	612322	84.2%	5	0	6	7	Process FX	Dismiss FX
57	Birmingham	722552	9	0	554490	76.7%	7	1	6	7	Process FX	Process FX
58	Greenville-Spartanburg	487104	16	0	365242	75.0%	7	0	6	7	Process FX	Process FX
59	McAllen-Brownsville-Harlingen	505158	9	4	409420	81.0%	1	0	6	7	Process FX	Dismiss FX
60	Tucson	766999	11	1	700197	91.3%	6	0	6	7	Process FX	Dismiss FX
61	Dayton	798715	2	0	613590	76.8%	1	0	6	7	Dismiss FX	Dismiss FX
62	Ft. Myers-Naples-Marco Island	398480	6	2	327725	82.2%	3	0	6	7	Process FX	Dismiss FX
63	Albany-Schenectady-Troy	615819	15	0	425668	69.1%	10	0	6	7	Process FX	Process FX
64	Honolulu	804002	11	5	673266	83.7%	3	3	6	7	Dismiss FX	Dismiss FX
65	Tulsa	644092	8	0	485778	75.4%	4	1	6	7	Process FX	Dismiss FX
66	Fresno	684236	7	0	590594	86.3%	1	0	6	7	Process FX	Dismiss FX
67	Grand Rapids	618017	8	0	508705	82.3%	2	0	6	7	Process FX	Dismiss FX
68	Albuquerque	614010	4	1	561616	91.5%	1	0	6	7	Dismiss FX	Dismiss FX
69	Allentown-Bethlehem	638507	4	0	454970	71.3%	0	0	6	7	Dismiss FX	Dismiss FX
70	Knoxville	508211	20	0	343072	67.5%	11	0	6	7	Process FX	Process FX
71	Wilkes Barre-Scranton	386145	6	1	242931	62.9%	1	0	6	7	Process FX	Dismiss FX
72	Omaha-Council Bluffs	654066	10	1	507828	77.6%	4	0	6	7	Process FX	Dismiss FX
73	Sarasota-Bradenton	505410	10	0	403593	79.9%	6	0	6	7	Process FX	Dismiss FX
74	El Paso	652265	6	2	464657	71.2%	2	1	6	7	Process FX	Dismiss FX
75	Bakersfield	425205	14	2	408370	96.0%	8	1	6	7	Process FX	Process FX
76	Akron	831064	0	0	525744	63.3%	0	0	6	7	Dismiss FX	Dismiss FX
77	Wilmington, DE	1028091	1	0	542437	52.8%	0	0	6	7	Dismiss FX	Dismiss FX
78	Harrisburg-Lebanon-Carlisle	446993	9	0	348876	78.0%	5	0	6	7	Process FX	Dismiss FX
79	Baton Rouge	540774	16	0	410913	76.0%	13	0	6	7	Process FX	Process FX

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
80	Monterey-Salinas-Santa Cruz	247558	5	2	136899	55.3%	3	0	6	7	Process FX	Dismiss FX
81	Charleston, SC	393359	4	0	270550	68.8%	3	0	6	7	Dismiss FX	Dismiss FX
82	Gainesville-Ocala	219637	29	0	187598	85.4%	16	0	6	7	Process FX	Process FX
83	Stockton	547532	20	0	398417	72.8%	12	0	6	7	Process FX	Process FX
84	Little Rock	407666	7	2	324081	79.5%	3	0	6	7	Dismiss FX	Dismiss FX
85	Syracuse	466394	8	0	397455	85.2%	3	0	6	7	Process FX	Dismiss FX
86	Greenville-New Bern-Jacksonville	152406	30	0	115265	75.6%	24	0	6	7	Process FX	Process FX
87	Springfield, MA	697651	9	0	506660	72.6%	6	0	6	7	Process FX	Dismiss FX
88	Columbia, SC	490329	25	0	389917	79.5%	14	0	6	7	Process FX	Process FX
89	Toledo	589278	8	0	501940	85.2%	4	0	6	7	Process FX	Dismiss FX
90	Daytona Beach	269338	22	8	219073	81.3%	11	1	6	7	Process FX	Process FX
91	Des Moines	418883	16	2	365371	87.2%	6	0	6	7	Process FX	Dismiss FX
92	Spokane	375933	3	0	291282	77.5%	1	0	6	7	Dismiss FX	Dismiss FX
93	Colorado Springs	498228	3	0	457574	91.8%	1	0	6	7	Dismiss FX	Dismiss FX
94	Mobile	404619	7	0	300811	74.3%	5	0	6	7	Process FX	Dismiss FX
95	Lakeland-Winter Haven	453751	9	0	275138	60.6%	6	0	6	7	Process FX	Dismiss FX
96	Wichita	463495	6	1	420755	90.8%	2	0	6	7	Dismiss FX	Dismiss FX
97	Ft. Pierce-Stuart-Vero Beach	294092	10	0	174513	59.3%	6	0	6	7	Process FX	Dismiss FX
98	Madison	398392	24	0	334830	84.0%	18	0	6	7	Process FX	Process FX
99	Melbourne-Titusville-Cocoa	292355	4	3	252754	86.5%	1	0	6	7	Process FX	Dismiss FX
100	Lexington, KY-Fayette	364139	11	0	294759	80.9%	6	0	6	7	Process FX	Dismiss FX
MARKETS 101 and smaller												
101	Boise	298349	1	0	242806	81.4%	0	0	5	6	Dismiss FX	Dismiss FX
102	Visalia-Tulare-Hanford	275029	12	1	188666	68.6%	4	0	5	6	Process FX	Dismiss FX
103	Johnson City-Kingsport-Bristol	272211	27	0	155404	57.1%	18	0	5	6	Process FX	Process FX
104	York	423352	2	0	245848	58.1%	0	0	5	6	Dismiss FX	Dismiss FX
105	Lafayette, LA	331546	10	0	216141	65.2%	6	0	5	6	Process FX	Process FX
106	Huntsville	297406	23	0	219327	73.7%	16	0	5	6	N/A	N/A

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
107	Chattanooga	395014	17	1	288052	72.9%	8	0	5	6	Process FX	Process FX
108	Ft. Wayne	368057	10	0	307479	83.5%	3	0	5	6	Process FX	Dismiss FX
109	Augusta, GA	356628	26	0	314632	88.2%	16	0	5	6	Process FX	Process FX
110	Worcester, MA	550222	5	0	364228	66.2%	2	0	5	6	Process FX	Dismiss FX
111	Lancaster	438426	1	0	304256	69.4%	1	0	5	6	N/A	N/A
112	Roanoke-Lynchburg	264641	25	0	226127	85.4%	13	0	5	6	Process FX	Process FX
113	Modesto	529259	27	1	419626	79.3%	11	0	5	6	N/A	N/A
114	Portsmouth-Dover-Rochester	255776	23	8	128572	50.3%	11	2	5	6	N/A	N/A
115	Ft. Collins-Greeley, CO	246031	9	3	182478	74.2%	3	1	5	6	Process FX	Dismiss FX
116	Morristown, NJ	1591042	0	0	550291	34.6%	0	0	5	6	Dismiss FX	Dismiss FX
117	Victor Valley	232298	16	4	223500	96.2%	6	2	5	6	Process FX	Process FX
118	New Haven	850834	1	0	486310	57.2%	1	0	5	6	Dismiss FX	Dismiss FX
119	Oxnard-Ventura	462905	6	4	386718	83.5%	2	0	5	6	Process FX	Dismiss FX
120	Santa Rosa	440517	4	1	305247	69.3%	1	0	5	6	N/A	N/A
121	Reno	328397	1	0	315877	96.2%	0	0	5	6	Dismiss FX	Dismiss FX
122	Jackson, MS	382833	9	0	321519	84.0%	8	0	5	6	N/A	N/A
123	Bridgeport	791339	1	0	411732	52.0%	0	0	5	6	Dismiss FX	Dismiss FX
124	Pensacola	361817	12	0	284780	78.7%	10	0	5	6	N/A	N/A
125	Lansing-East Lansing	378641	19	0	316265	83.5%	11	0	5	6	Process FX	Process FX
126	Youngstown-Warren	532859	4	0	379602	71.2%	0	0	5	6	Dismiss FX	Dismiss FX
127	Fayetteville, NC	352778	20	0	276245	78.3%	13	0	5	6	Process FX	Process FX
128	Fayetteville (North West AR)	182222	21	0	137748	75.6%	15	0	5	6	Process FX	Process FX
129	Flint	480892	10	0	357256	74.3%	3	0	5	6	N/A	N/A
130	Canton	520201	6	0	315447	60.6%	3	0	5	6	Process FX	Dismiss FX
131	Reading, PA	416373	1	0	280167	67.3%	0	0	5	6	Dismiss FX	Dismiss FX
132	Palm Springs	206738	25	6	155856	75.4%	12	0	5	6	Process FX	Process FX
133	Shreveport	338787	19	2	296813	87.6%	9	2	5	6	Process FX	Process FX
134	Saginaw-Bay City-Midland	295589	25	0	195388	66.1%	15	0	5	6	Process FX	Process FX

		31x31 Full Study Area			21x21 Study Area ("Inner Zone")							
		Population	Available Channels	Avail Chan Serving 0 Population	Population	Population as % of 31x31 Population	Available Channels	Avail Chans Serving 0 Pop	FCC Proposed Floor	Proposed Floor	FCC Proposed Disposition	Proposed Disposition
135	Appleton-Oshkosh	298822	20	0	215476	72.1%	10	0	5	6	Process FX	Process FX
136	Springfield, MO	284871	18	0	234201	82.2%	11	0	5	6	Process FX	Process FX
137	Corpus Christi	331776	9	3	268006	80.8%	4	0	5	6	Process FX	Dismiss FX
138	Newburgh-Middletown, NY (Mid Hudson)	528739	4	0	254939	48.2%	1	0	5	6	Dismiss FX	Dismiss FX
139	Beaumont-Port Arthur, TX	308247	12	0	214545	69.6%	6	0	5	6	Process FX	Process FX
140	Burlington-Plattsburgh	174513	15	0	123869	71.0%	9	0	5	6	Process FX	Process FX
141	Salisbury-Ocean City	125310	15	0	92900	74.1%	7	1	5	6	Process FX	Process FX
142	Atlantic City-Cape May	247020	29	22	171148	69.3%	15	9	5	6	Process FX	Process FX
143	Trenton	1084448	0	0	588019	54.2%	0	0	5	6	Dismiss FX	Dismiss FX
144	Tyler-Longview	185345	29	1	146752	79.2%	13	0	5	6	Process FX	Process FX
145	Eugene-Springfield	272559	10	3	238197	87.4%	3	0	5	6	Process FX	Dismiss FX
146	Flagstaff-Prescott, AZ	67885	25	14	67885	100.0%	13	7	5	6	Process FX	Process FX
147	Stamford-Norwalk, CT	1033638	0	0	411745	39.8%	0	0	5	6	Dismiss FX	Dismiss FX
148	Quad Cities (Davenport-Rock Island-Moline)	311577	26	0	280117	89.9%	17	0	5	6	Process FX	Process FX
149	Fredericksburg	217796	26	0	162298	74.5%	17	0	5	6	Process FX	Process FX
150	Peoria	308380	12	0	265224	86.0%	6	0	5	6	Process FX	Process FX
159	Asheville, NC	251841	15	1	179780	71.4%	7	0	5	6	Process FX	Process FX
171	San Luis Obispo, CA	186530	16	5	98256	52.7%	9	0	5	6	Process FX	Process FX
203	Danbury, CT	547793	1	0	224395	41.0%	0	0	5	6	Dismiss FX	Dismiss FX
214	Santa Barbara, CA	201457	16	15	168689	83.7%	3	3	5	6	Process FX	Dismiss FX
273	Sheboygan, WI	96248	47	29	81198	84.4%	19	8	5	6	Process FX	Process FX

Appendix B

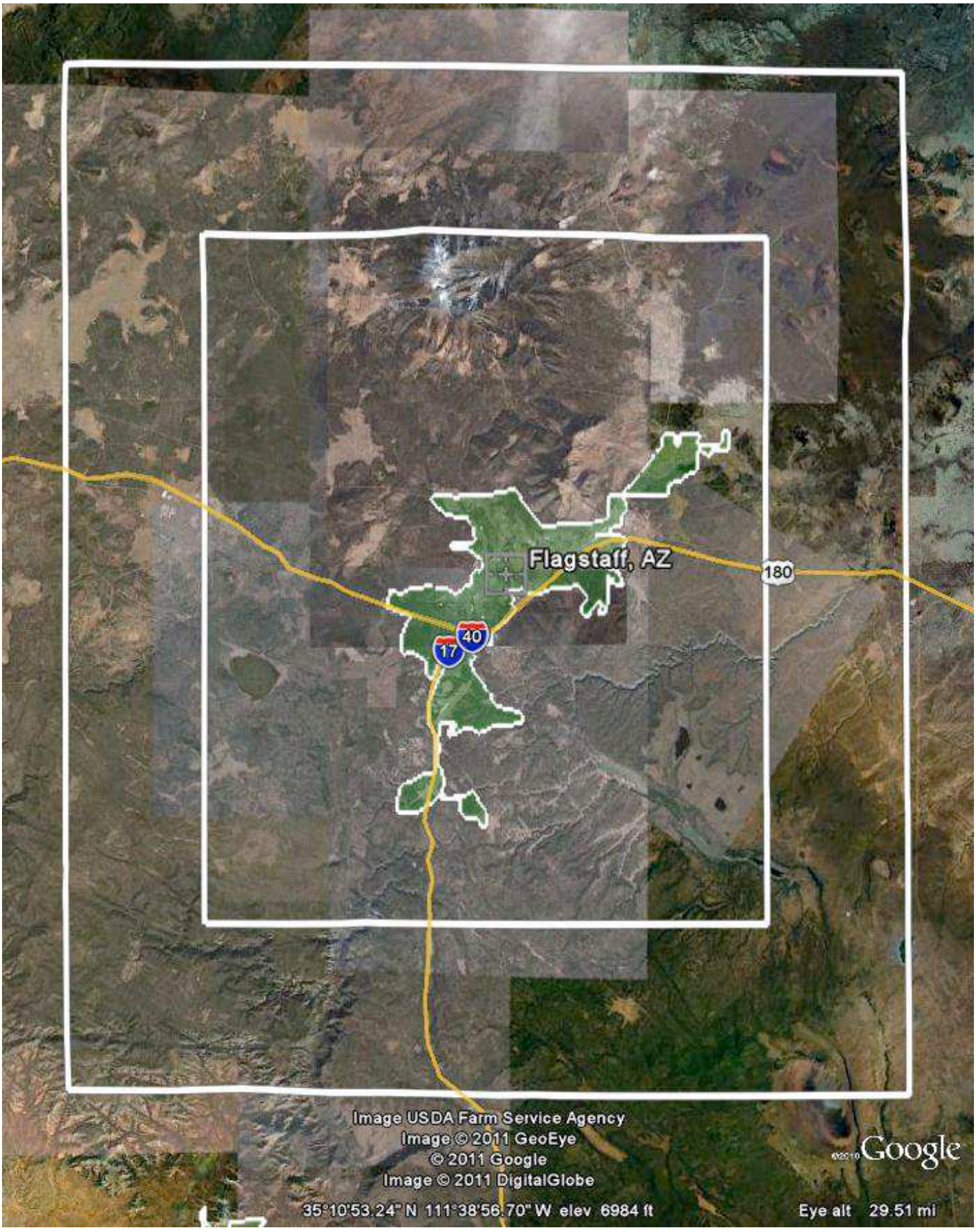
Maps of Sample Markets Depicting Population Density in 31x31 and 21x21 Grids

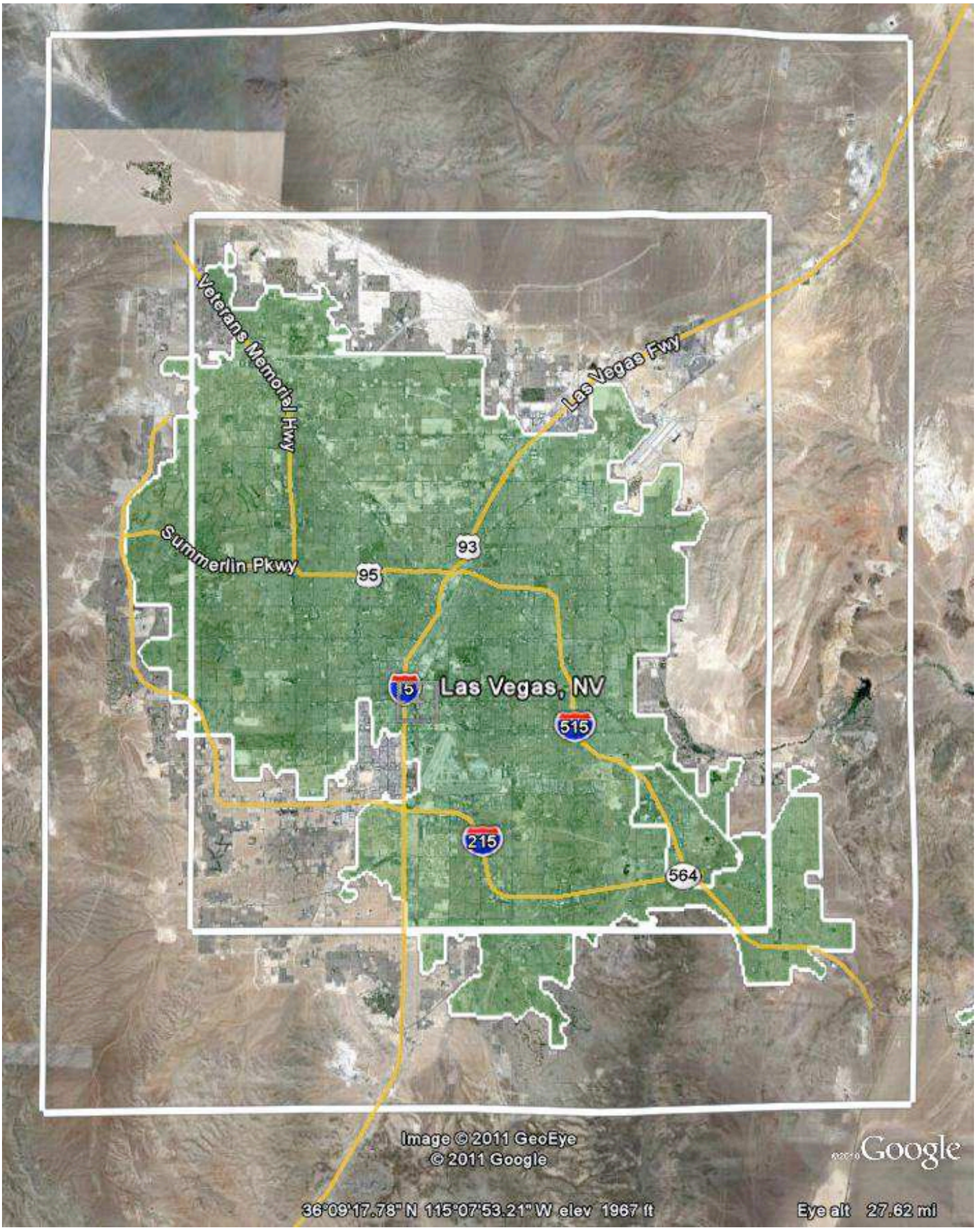
The maps below demonstrate that the majority of the population in the markets studied is located within the inner 21x21 grid, and that in nearly all markets, the 31x31 grid covers areas with low population density. The larger rectangle on the maps is the "outer zone" represented by the 31x31 grid, and the inner rectangle is the "inner zone" represented by the 21x21 grid. The shaded green areas are urban areas and urban clusters as defined by the 2000 US Census. Such areas include census blocks or groups with population densities of at least 1,000 people per square mile, and surrounding blocks with population densities of at least 500 people per square mile.

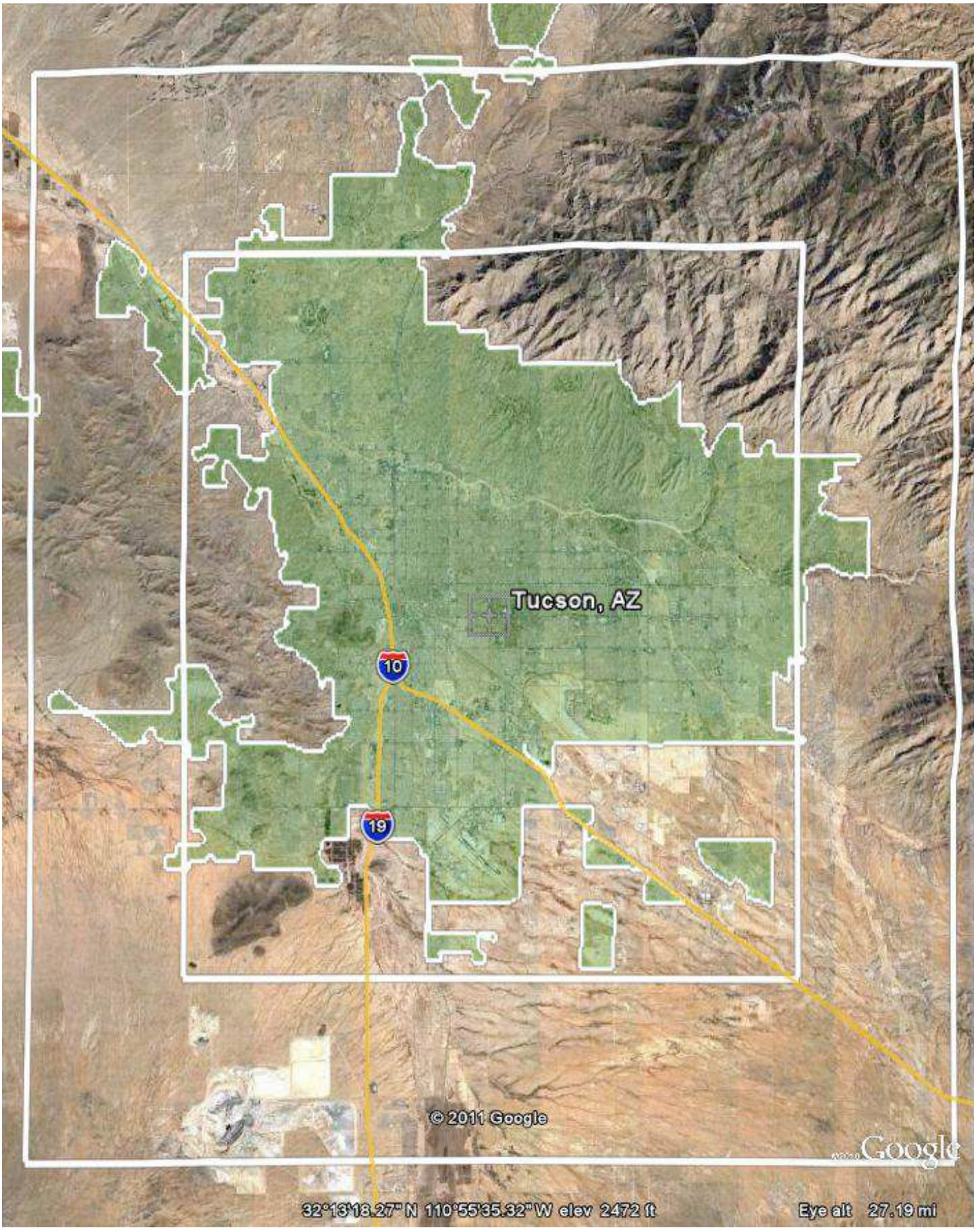
Included first are several examples of the markets where the 31x31 grid is least appropriate for identifying core market locations that could serve significant populations. The cities in these markets are surrounded by large unpopulated areas due to deserts or farmland. These include Flagstaff, Las Vegas, Tucson, and Wichita.

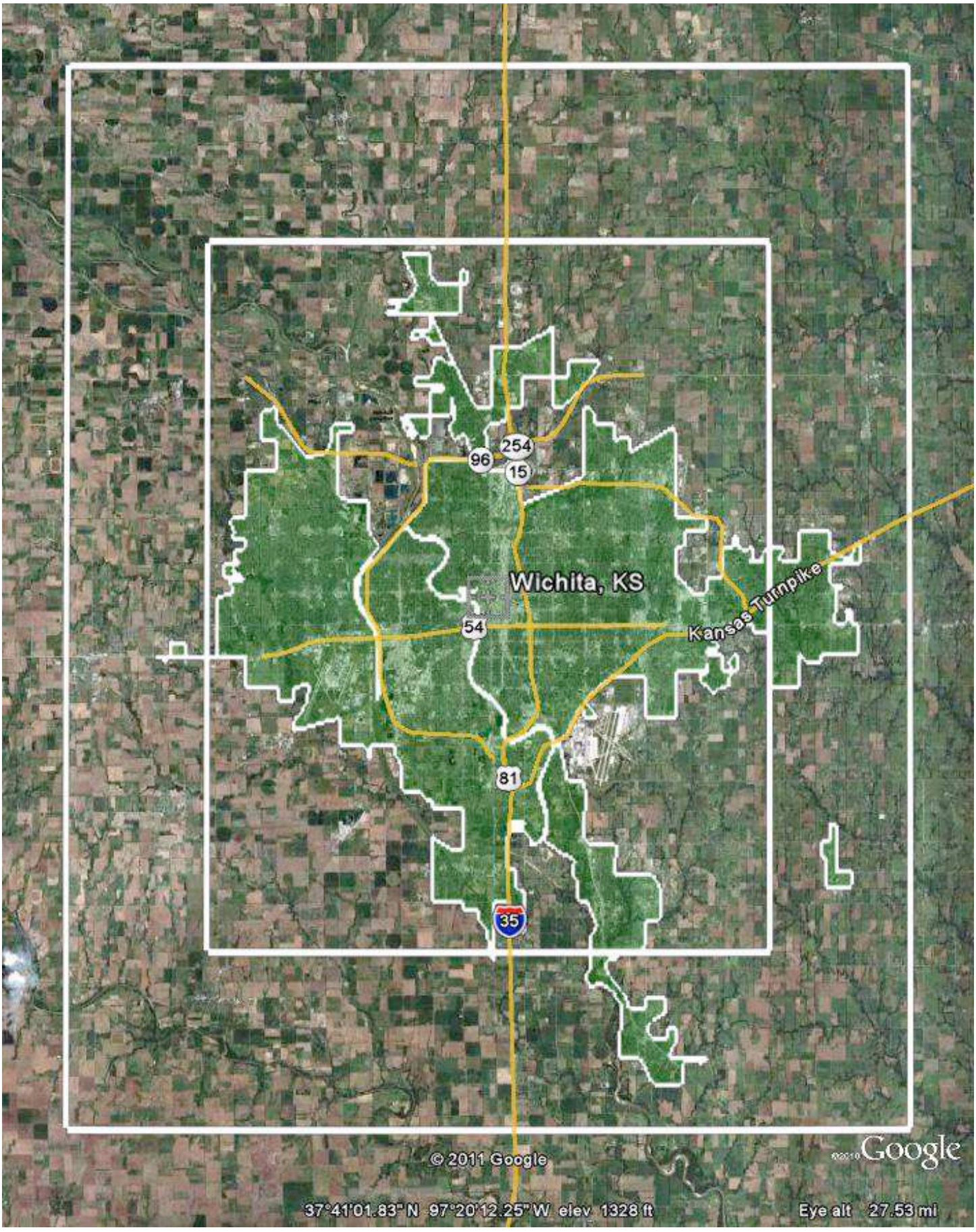
Following these examples are a series of maps which depict every tenth market identified by the Commission as a “process all translator applications” market. We selected these because the “process” markets are the most relevant in a consideration of methodology to better assess LPFM channel availability. These eight maps include Charlotte, Rochester, Knoxville, Stockton, Ft. Pierce, Worcester, Shreveport, and Eugene.

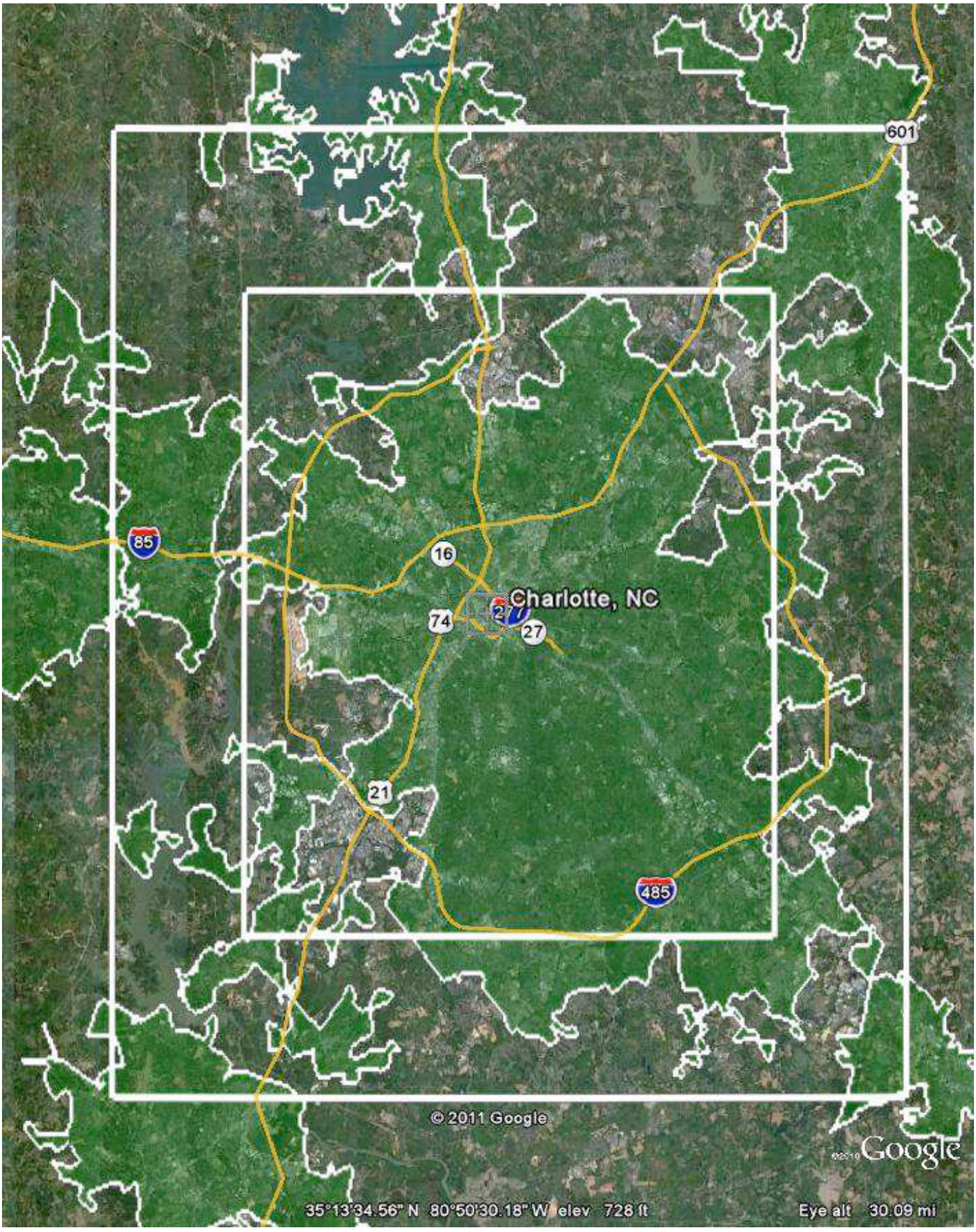
Finally, we included maps of every tenth market between market one and market 141, to provide a representative sample across all top 150 Arbitron markets. These include New York, Detroit, St. Louis, San Antonio, Providence, Monmouth, Wilkes-Barre, Charletson, Des Moines, Boise, Lancaster, Reno, Reading, and Salibury-Ocean City.


Flagstaff, AZ
180
40
17
Image USDA Farm Service Agency
Image © 2011 GeoEye
© 2011 Google
Image © 2011 DigitalGlobe
35°10'53.24" N 111°38'56.70" W elev 6984 ft
Eye alt 29.51 mi
Google

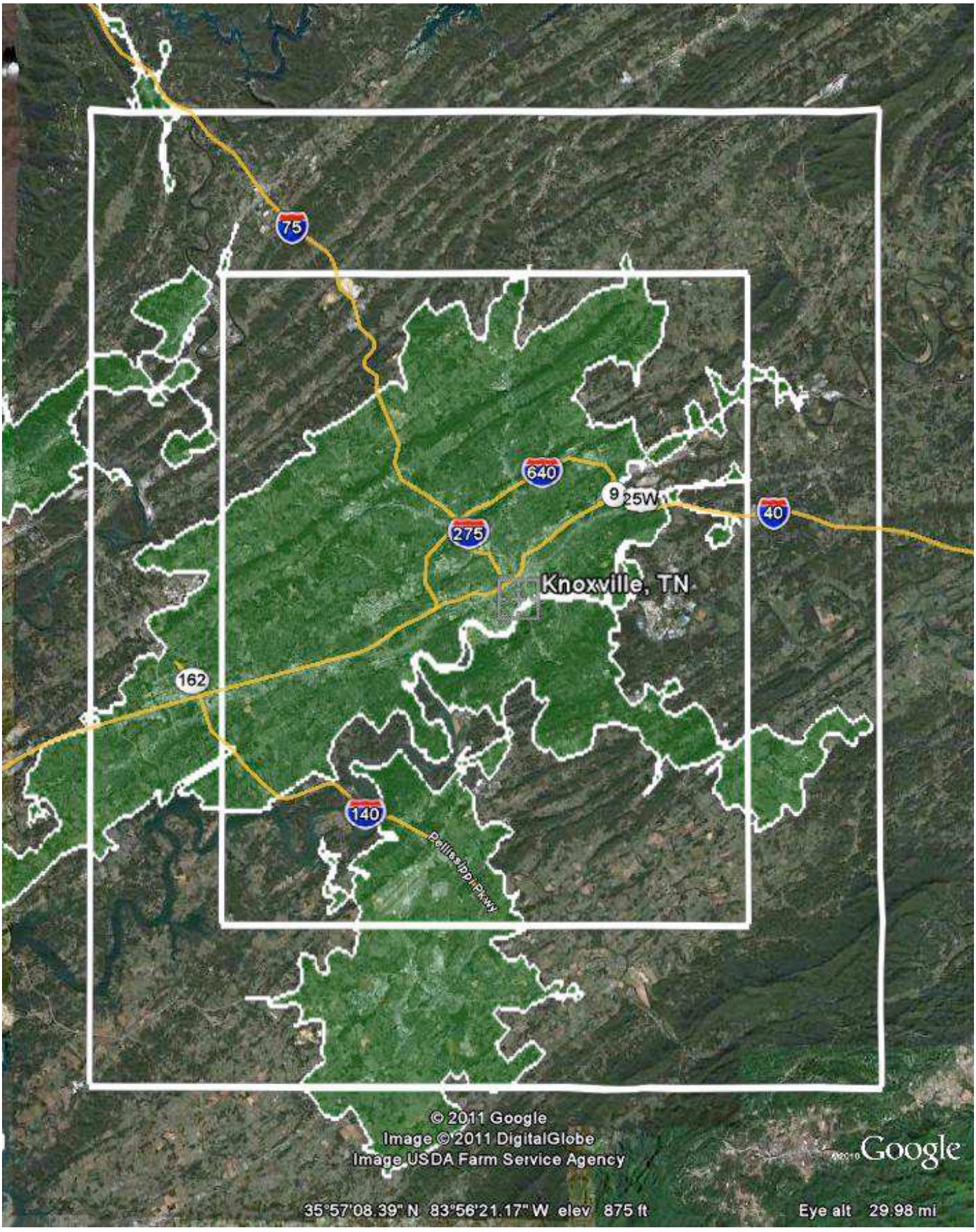

Veterans Memorial Hwy
Las Vegas Fwy
Summerlin Pkwy
95
93
15
Las Vegas, NV
515
215
564
Image © 2011 GeoEye
© 2011 Google
Google
36°09'17.78" N 115°07'53.21" W elev 1967 ft
Eye alt 27.62 mi

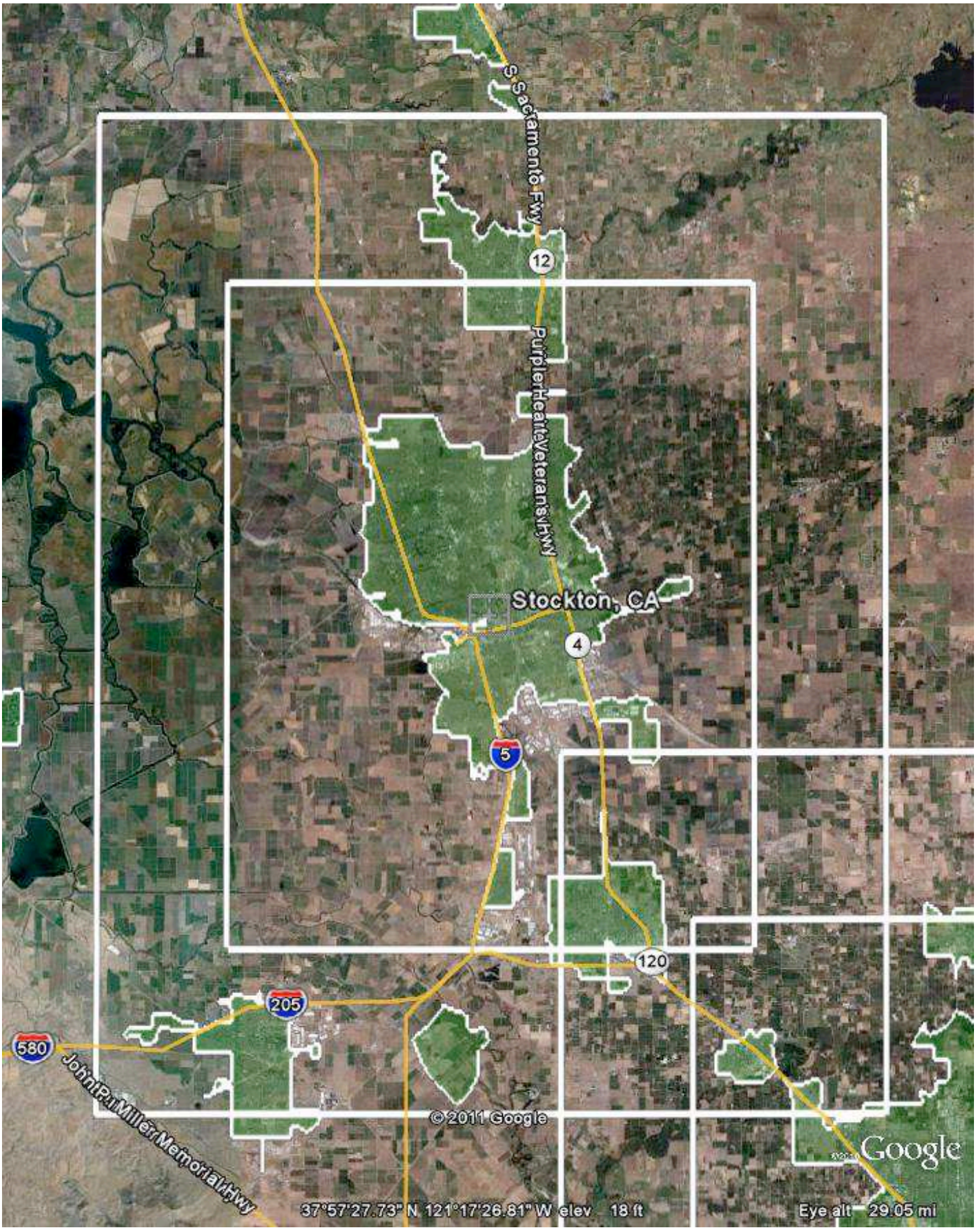

Tucson, AZ
10
19
© 2011 Google
Google
32°13'18.27" N 110°55'35.32" W elev 2472 ft
Eye alt 27.19 mi


Wichita, KS
96
254
15
54
Kansas Turnpike
81
35
© 2011 Google
Google
37°41'01.83" N 97°20'12.25" W elev 1328 ft
Eye alt 27.53 mi


601
85
16
Charlotte, NC
74
27
21
485
© 2011 Google
Google
35°13'34.56" N 80°50'30.18" W elev 728 ft
Eye alt 30.09 mi


104
531
Rochester, NY
590
390
490
90
©2011 Google
Image © 2011 GeoEye
Image NOAA
Google
43°09'39.58" N 77°36'39.40" W elev 515 ft
Eye alt 26.09 mi


75
640
275
40
Knoxville, TN
162
140
Pellissippi Pkwy
© 2011 Google
Image © 2011 DigitalGlobe
Image USDA Farm Service Agency
Google
35°57'08.39" N 83°56'21.17" W elev 875 ft
Eye alt 29.98 mi


S Sacramento Fwy
12
Purple Heart Veterans Hwy
Stockton, CA
4
5
120
205
580
John R. Miller Memorial Hwy
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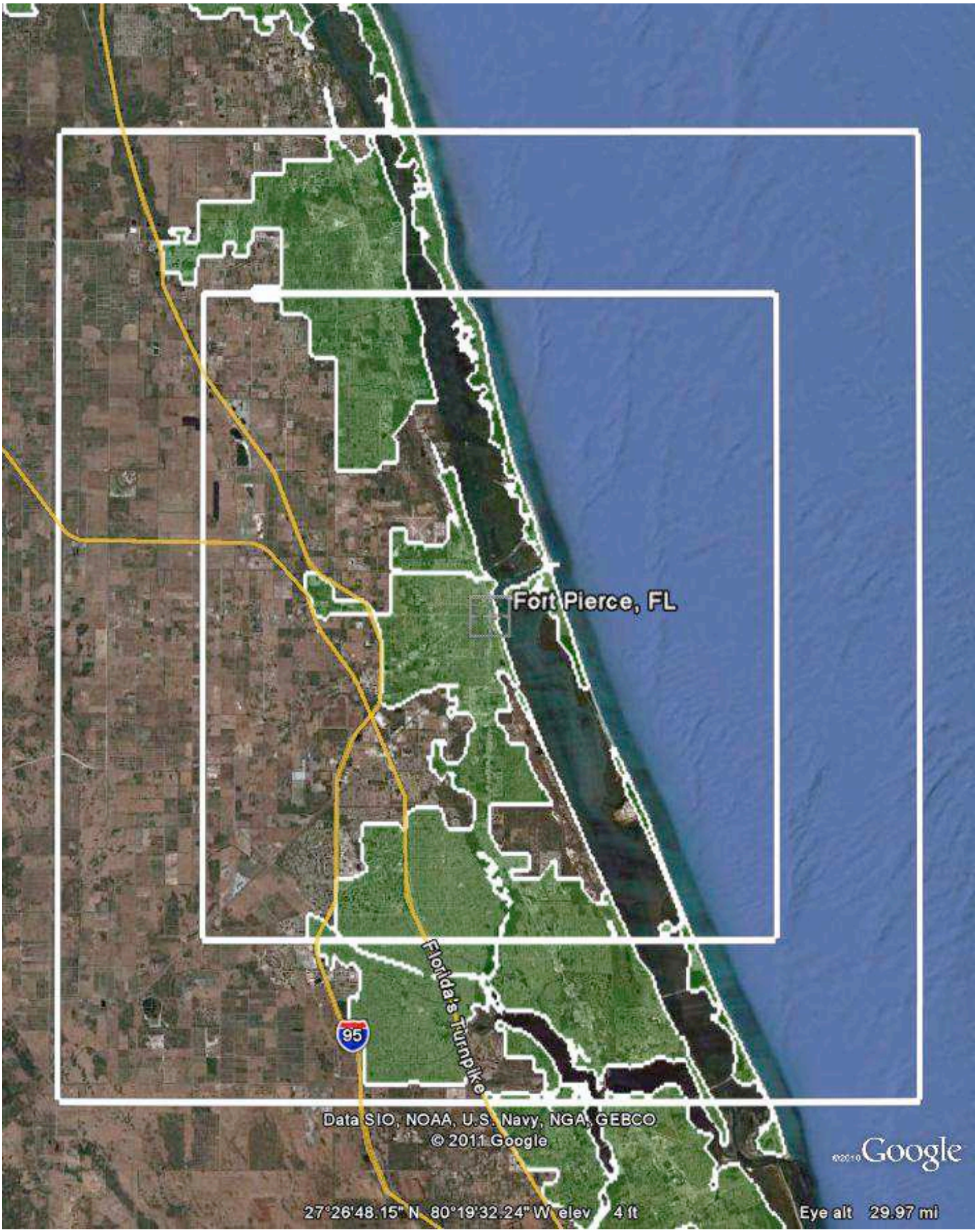
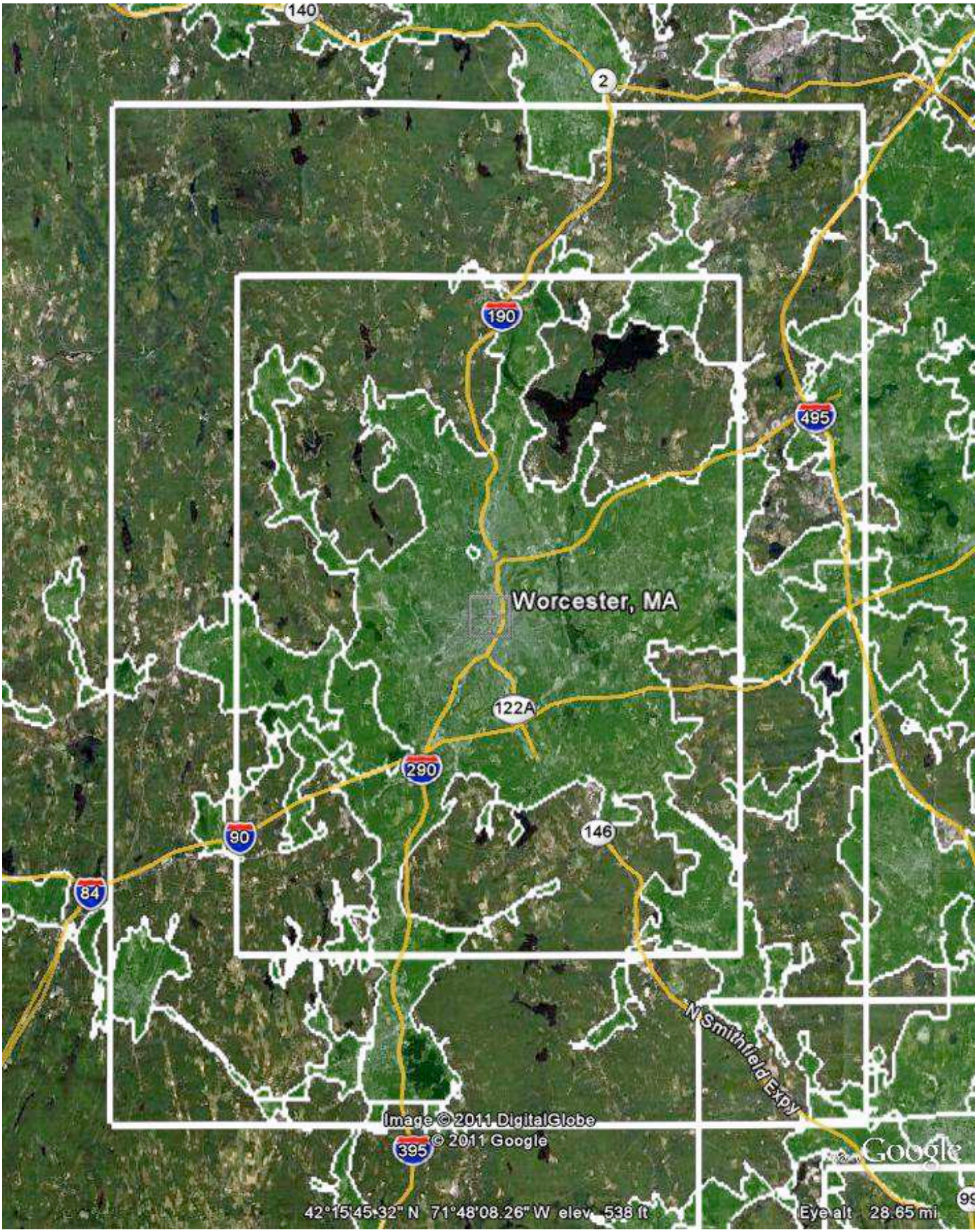
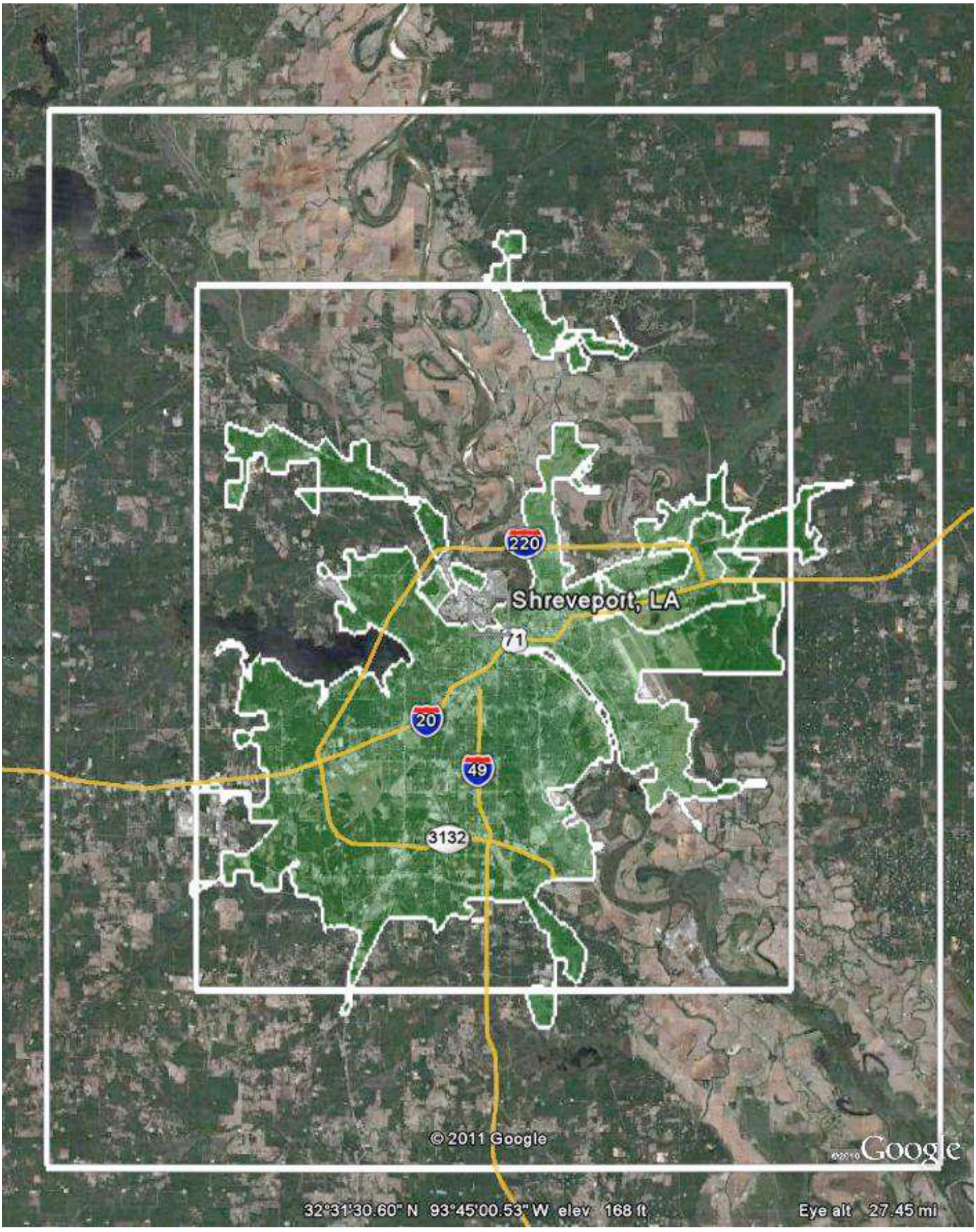
Google
37°57'27.73" N 121°17'26.81" W elev 18 ft
Eye alt 29.05 mi


Fort Pierce, FL
95
Florida's Turnpike
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
© 2011 Google
Google
27°26'48.15" N 80°19'32.24" W elev 4 ft
Eye alt 29.97 mi


140
2
190
495
Worcester, MA
122A
290
90
84
146
N Smithfield Expy
395
Image © 2011 DigitalBody
© 2011 Google
Google
42°15'45.32" N 71°48'08.26" W elev 538 ft
Eye alt 28.65 mi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Shreveport, LA
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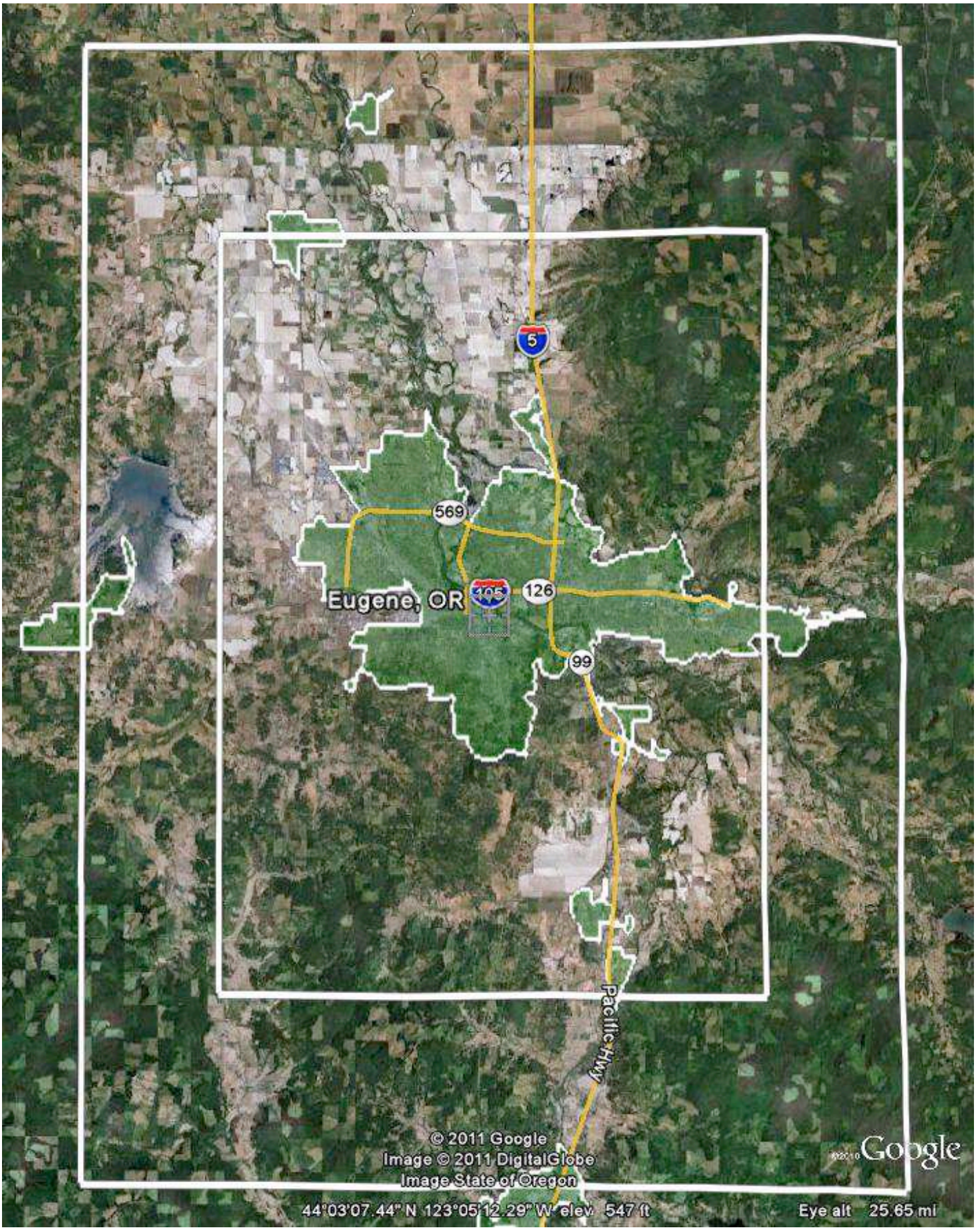
20
49
3132
© 2011 Google
Google
32°31'30.60" N 93°45'00.53" W elev 168 ft
Eye alt 27.45 mi


5
569
Eugene, OR
105
126
99
Pacific Hwy
© 2011 Google
Image © 2011 DigitalGlobe
Image State of Oregon
Google
44°03'07.44" N 123°05'12.29" W elev 547 ft
Eye alt 25.65 mi


208
4
19
46
80
87
Saw Mill Pkwy
695
3
21
9A
278
295
280
139
95
9
1
New York, NY
78
678
81
27
440
Richmond Pkwy
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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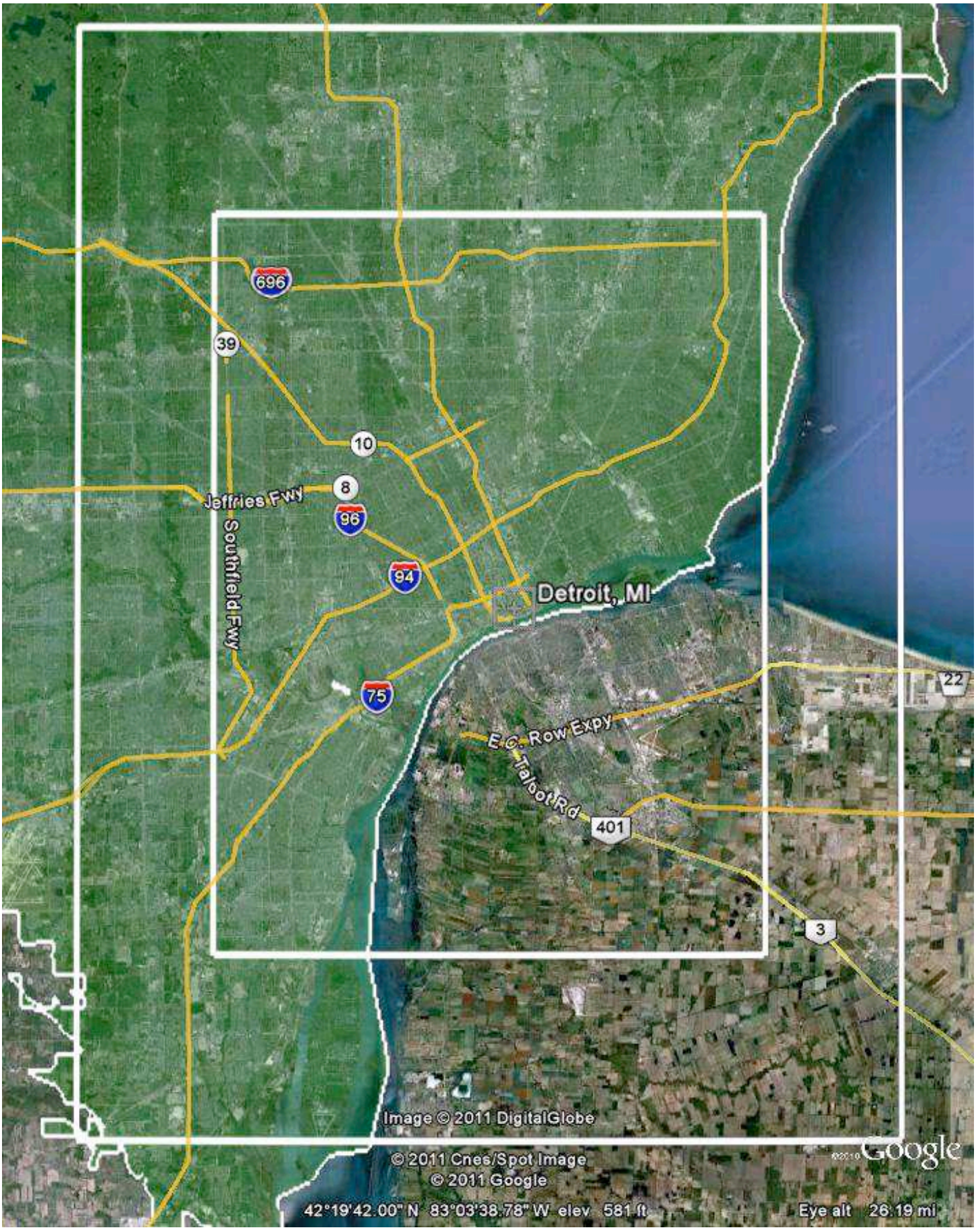
© 2011 Google
40°42'48.38" N 74°00'42.20" W elev 0 ft
Eye alt 26.27 mi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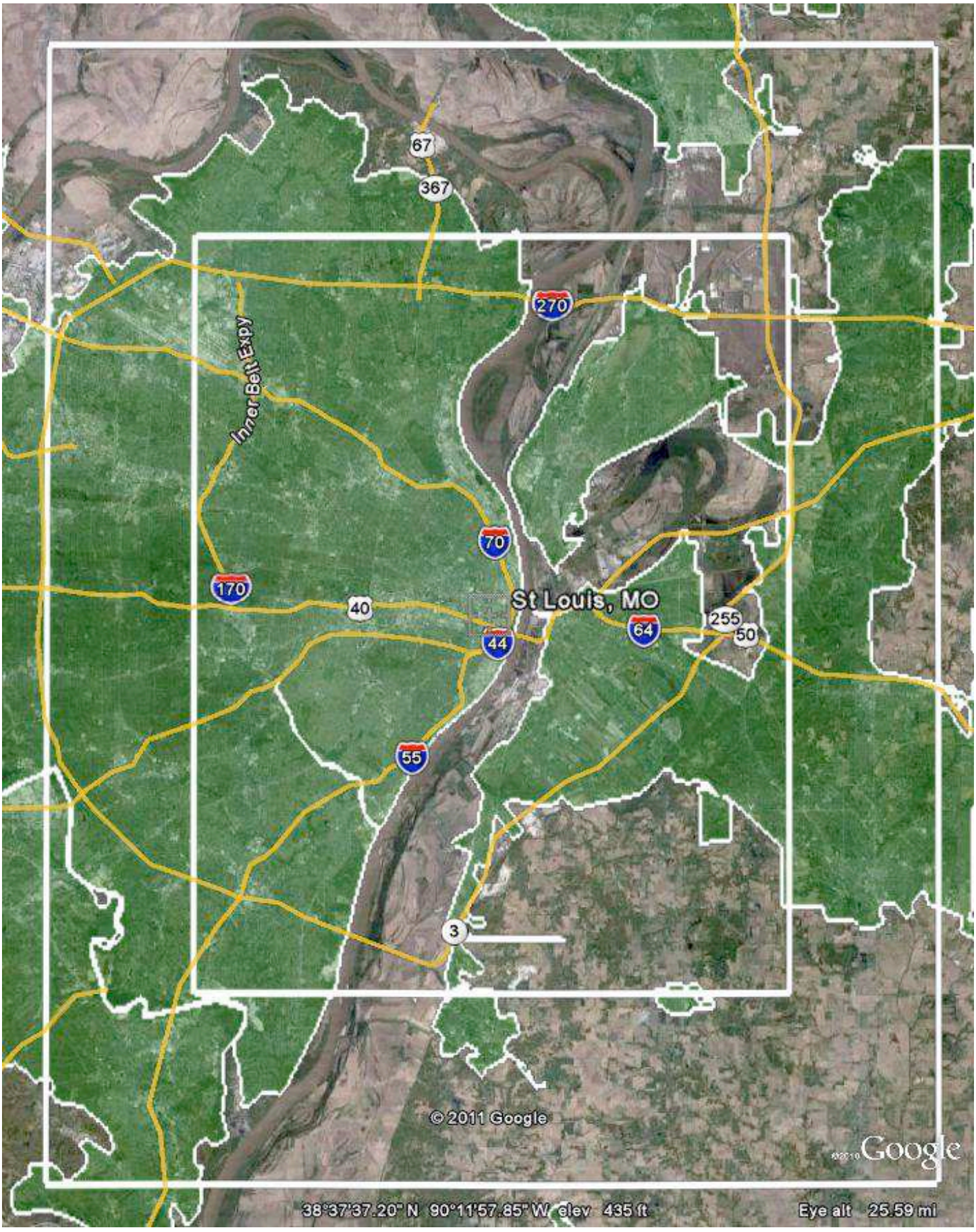
39
10
8
Jeffries Fwy
96
94
Southfield Fwy
Detroit, MI
75
22
E.C. Row Expy
Talbot Rd
401
3
Image © 2011 DigitalGlobe
© 2011 Cnes/Spot Image
© 2011 Google
Google
42°19'42.00" N 83°03'38.78" W elev 581 ft
Eye alt 26.19 mi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Inner Belt Expy
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St Louis, MO
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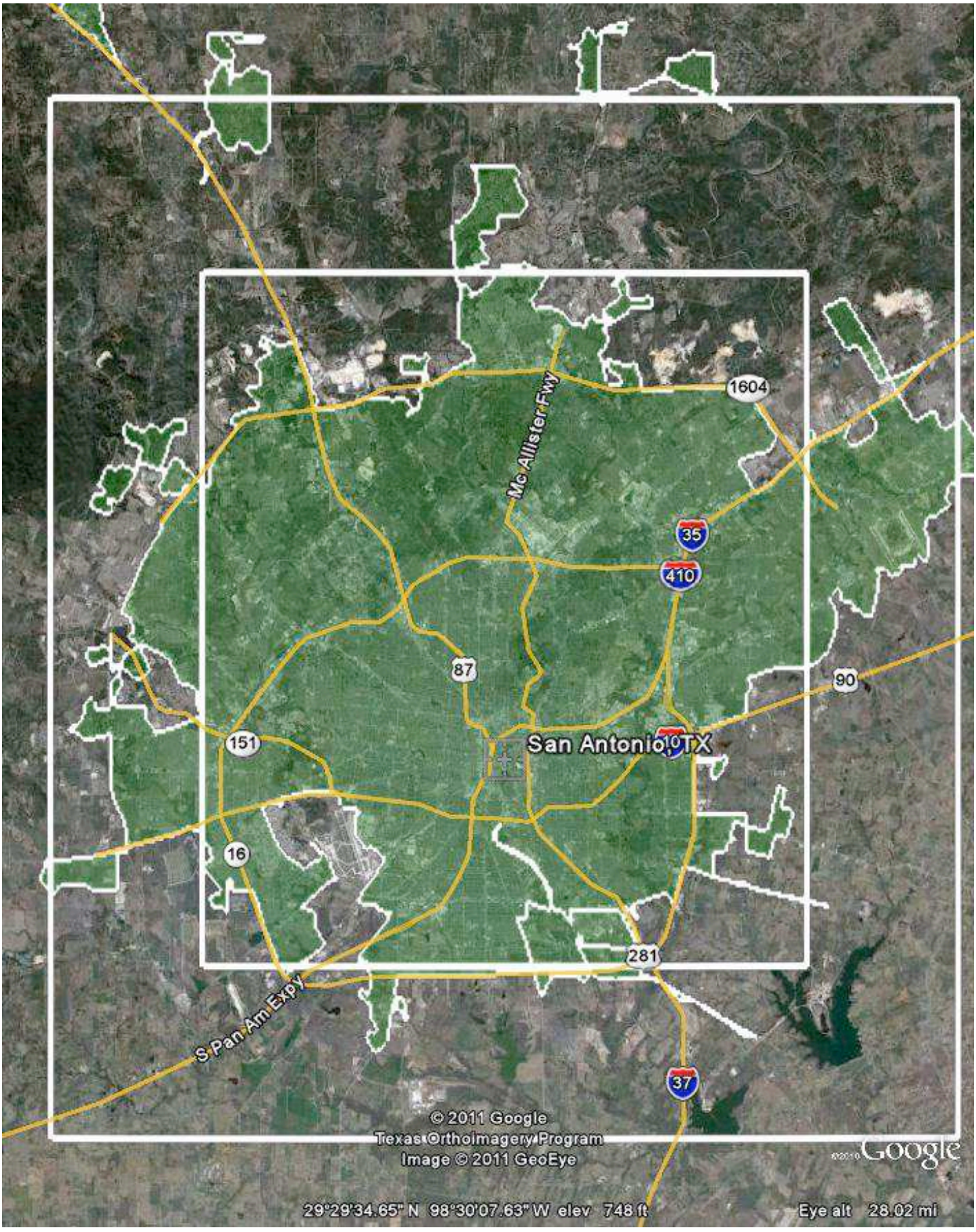
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Mc Allister Fwy
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410
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90
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16
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S Pan Am Expy
37
© 2011 Google
Texas Orthoimagery Program
Image © 2011 GeoEye
Google
29°29'34.65" N 98°30'07.63" W elev 748 ft
Eye alt 28.02 mi


146
495
99
95
Providence, RI
6
44
1
10
295
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403
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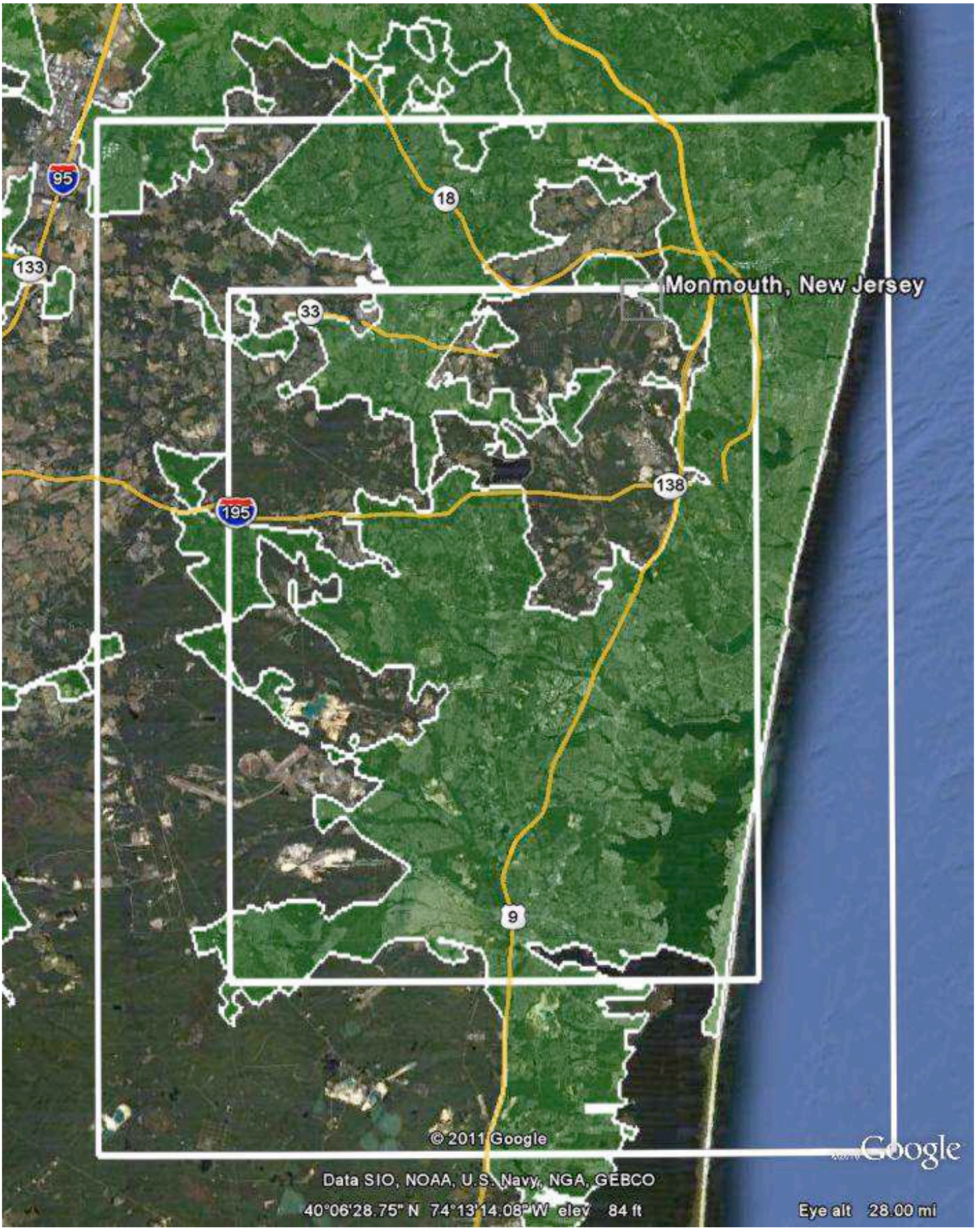
Eye alt 26.43 mi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Monmouth, New Jersey
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138
195
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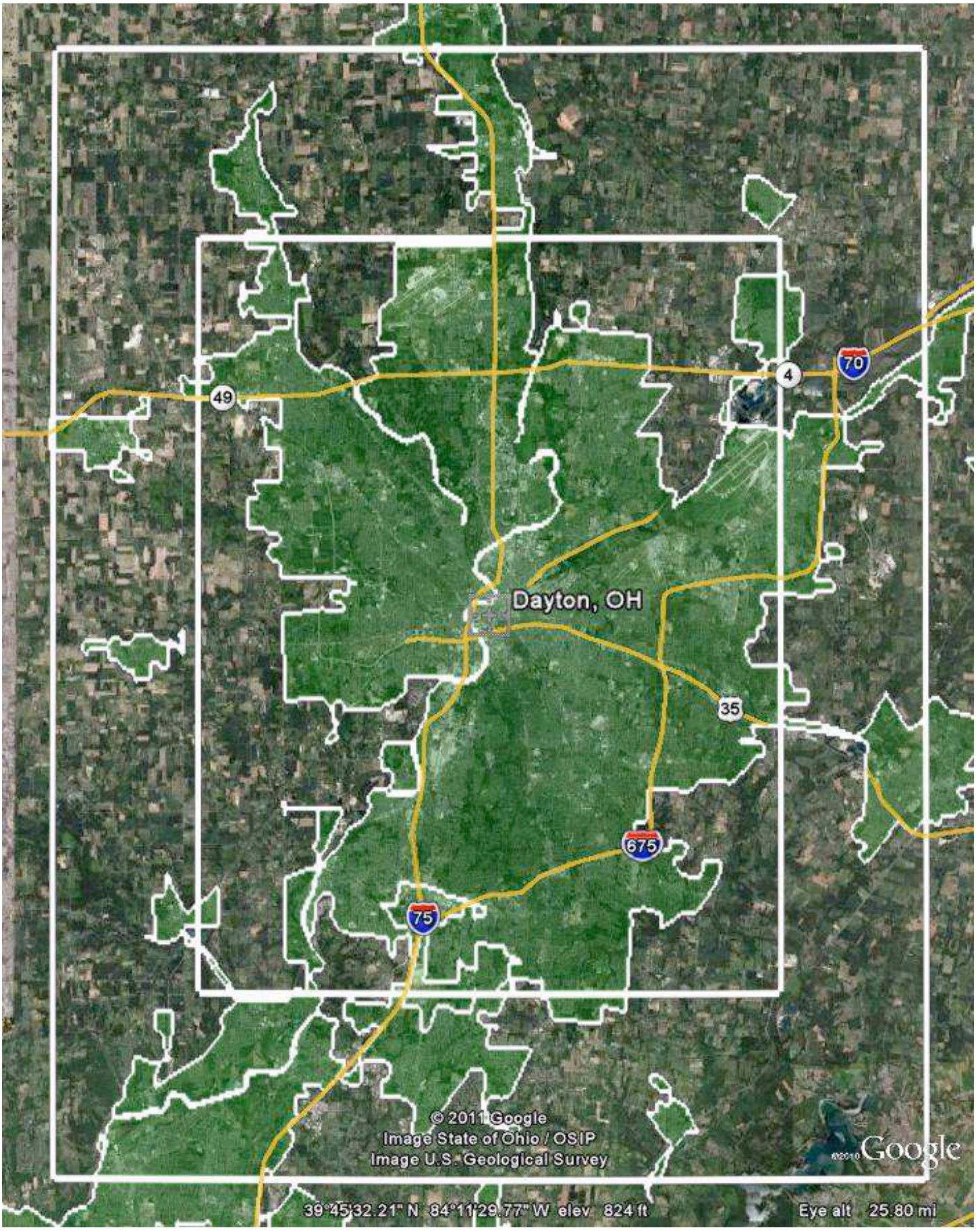
Eye alt 28.00 mi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70
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Image State of Ohio / OSIP
Image U.S. Geological Survey
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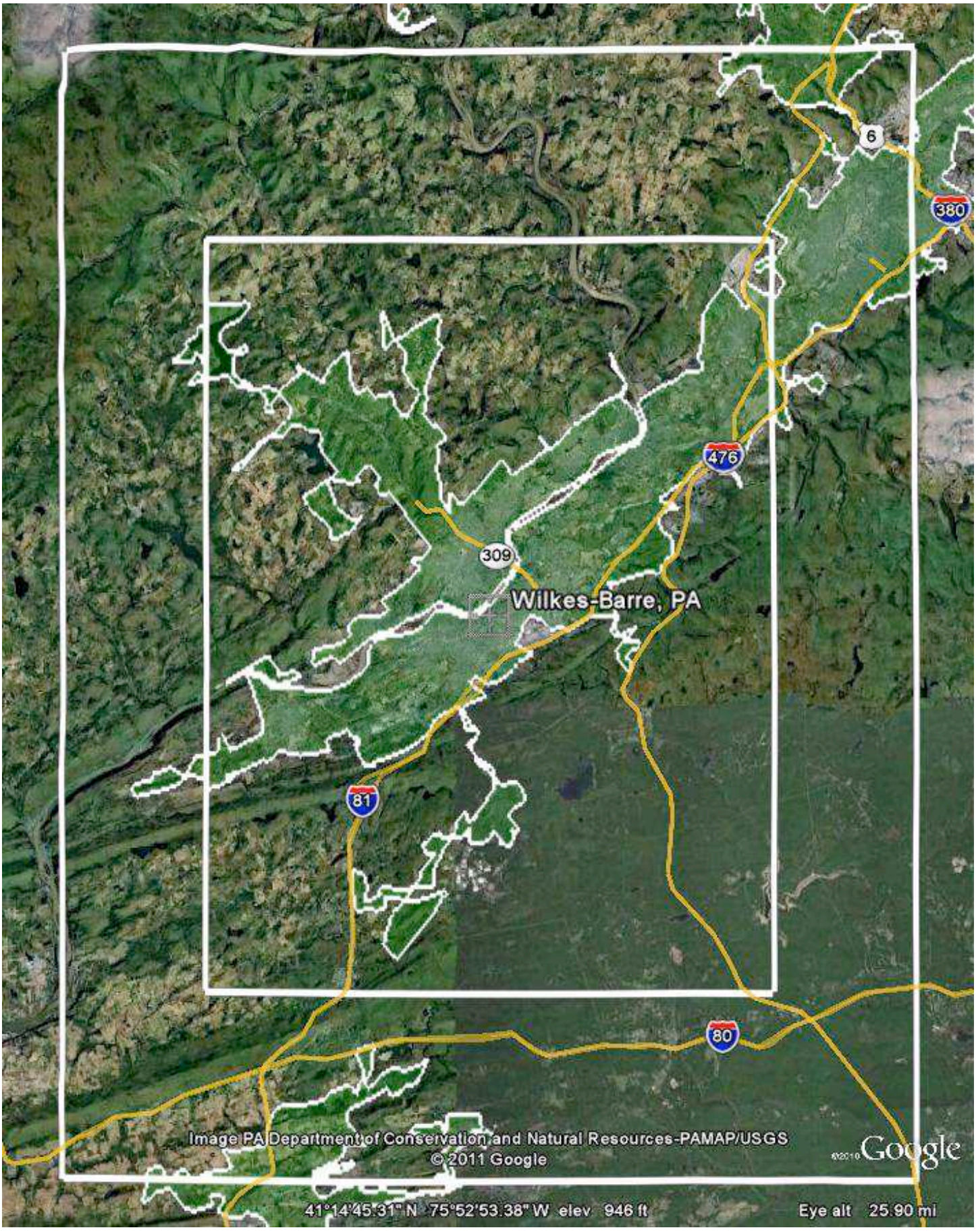
Eye alt 25.80 mi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476
309
Wilkes-Barre, PA
81
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Image PA Department of Conservation and Natural Resources-PAMAP/USGS
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Google
41°14'45.31" N 75°52'53.38" W elev 946 ft
Eye alt 25.90 mi


26
526
17
Charleston, SC
© 2011 Google
Google
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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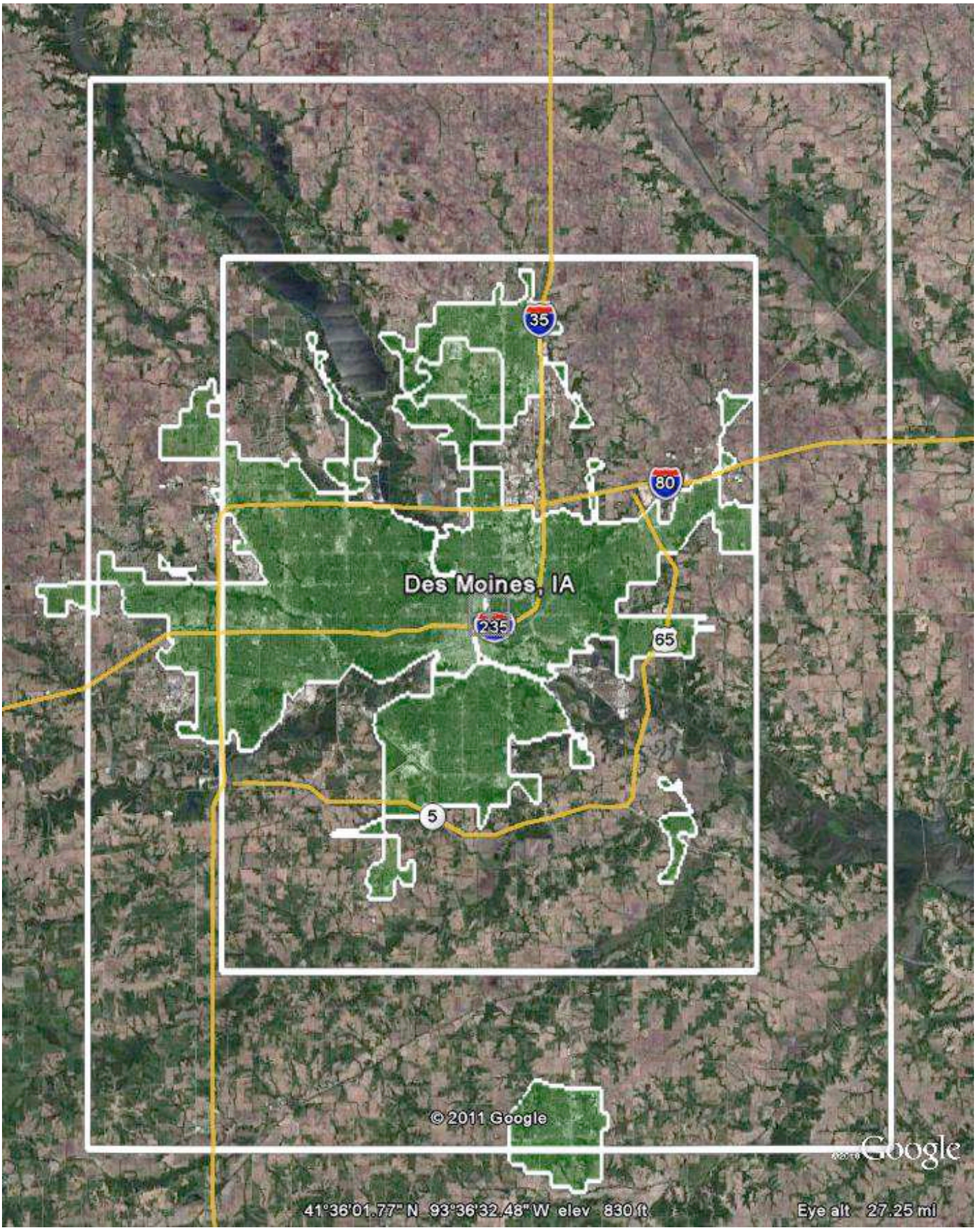
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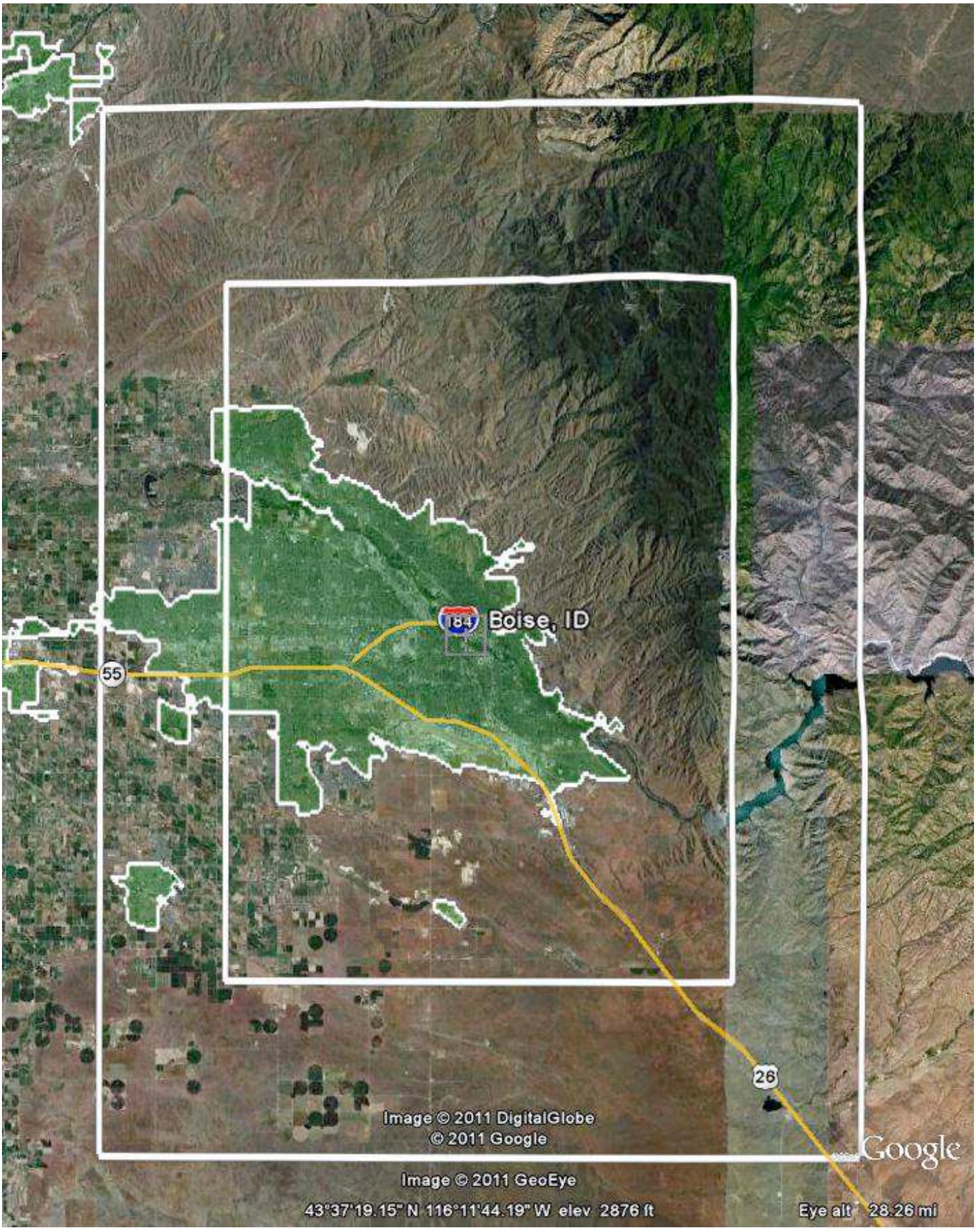
5
© 2011 Google
Google
41°36'01.77" N 93°36'32.48" W elev 830 ft
Eye alt 27.25 mi


Boise, ID
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55
26
Image © 2011 DigitalGlobe
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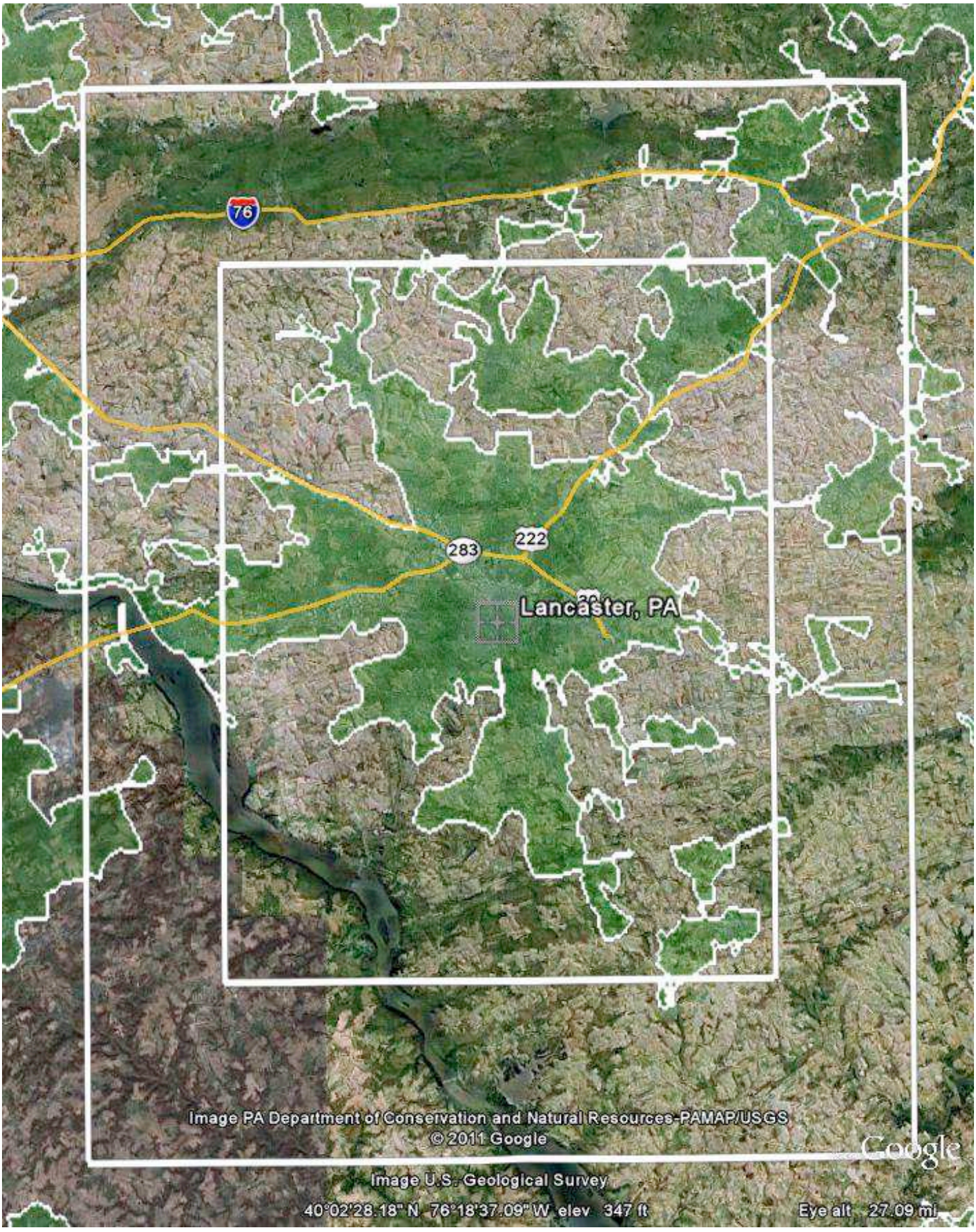
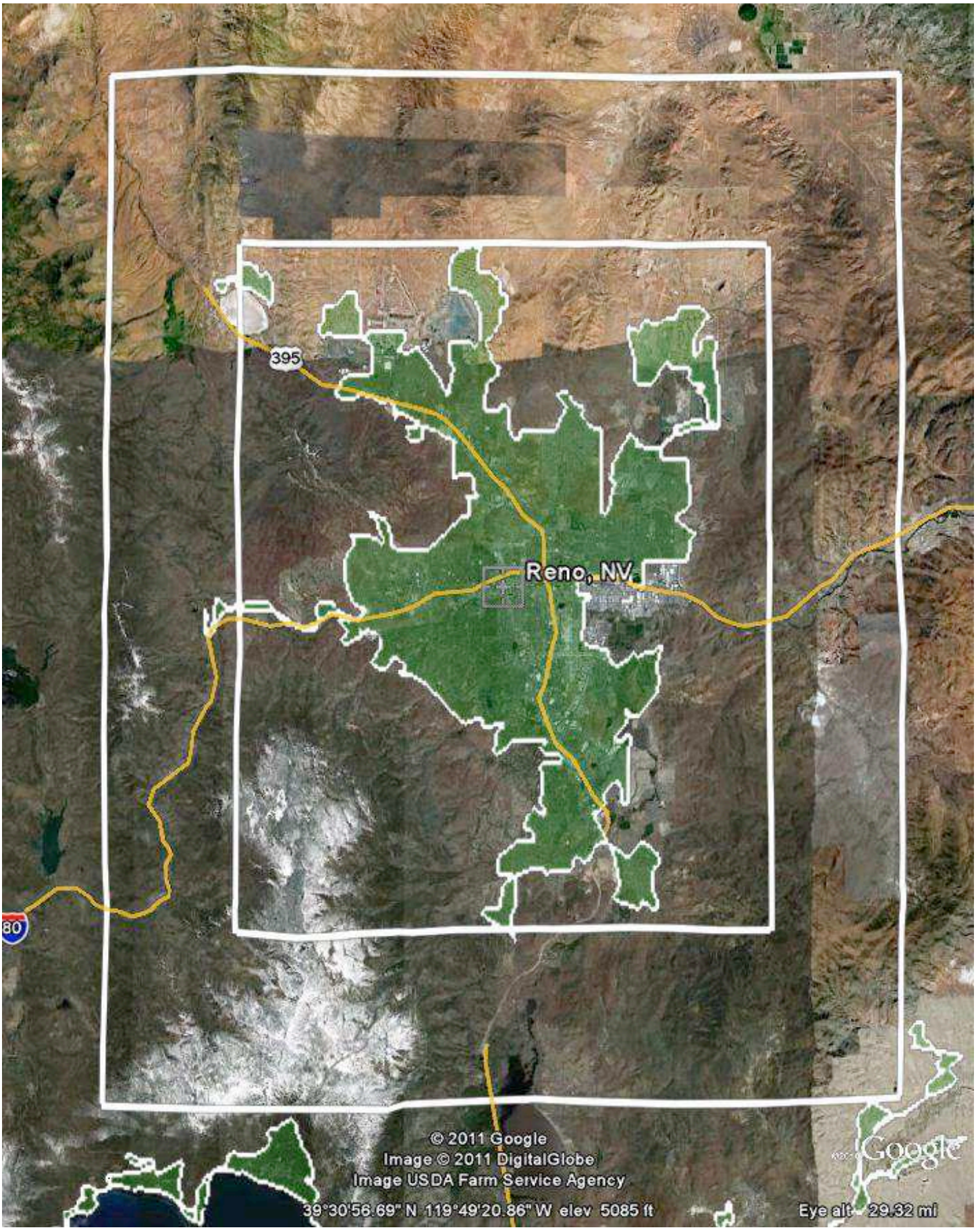
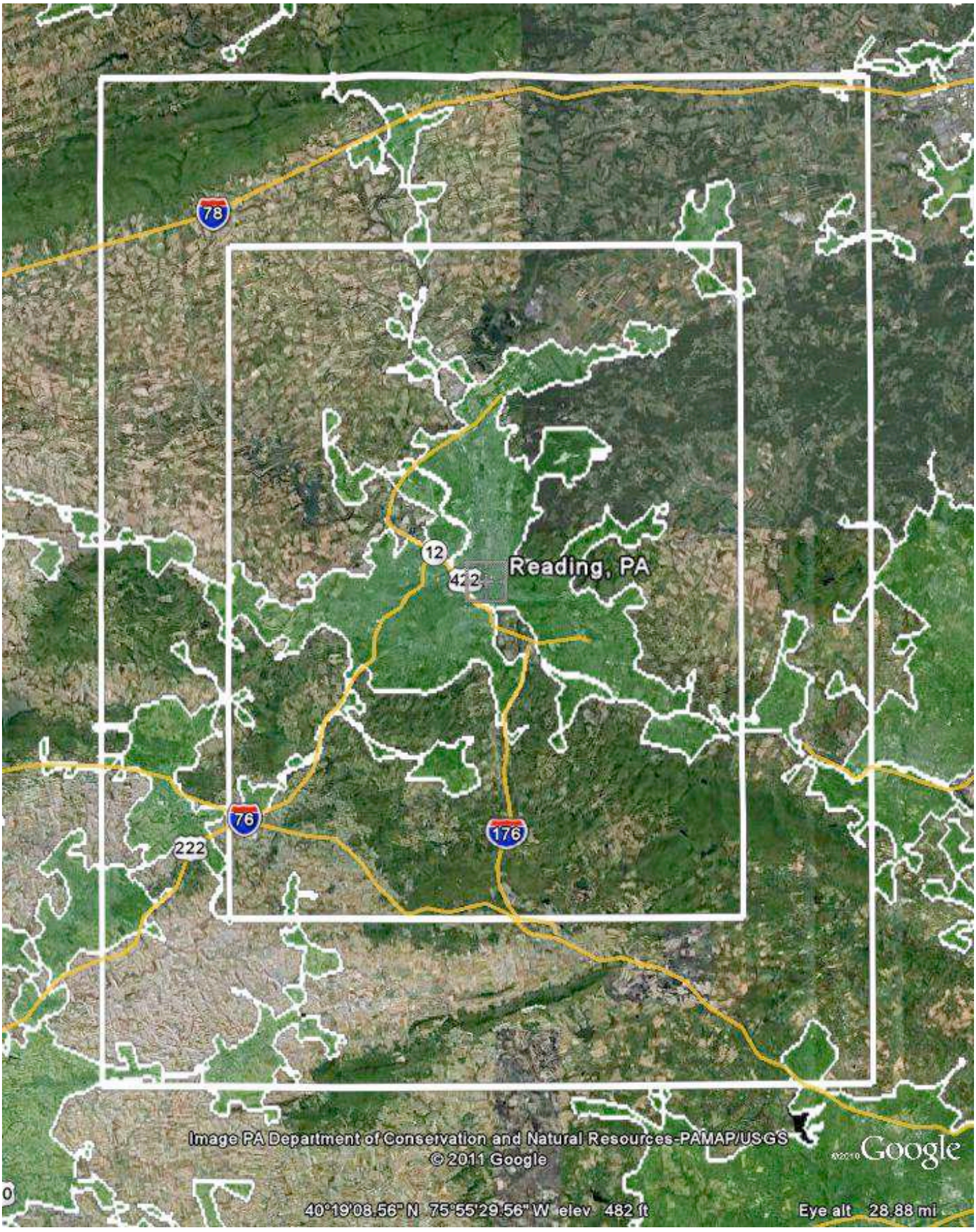
Image © 2011 GeoEye
Google
43°37'19.15" N 116°11'44.19" W elev 2876 ft
Eye alt 28.26 mi


76
283
222
Lancaster, PA
Image PA Department of Conservation and Natural Resources-PAMAP/USGS
© 2011 Google
Image U.S. Geological Survey
40°02'28.18" N 76°18'37.09" W elev 347 ft
Eye alt 27.09 mi


395
Reno, NV
80
© 2011 Google
Image © 2011 DigitalGlobe
Image USDA Farm Service Agency
39°30'56.69" N 119°49'20.86" W elev 5085 ft
Eye alt 29.32 mi


78
12
422
Reading, PA
76
222
176
Image PA Department of Conservation and Natural Resources-PAMAP/USGS
© 2011 Google
Google
40°19'08.56" N 75°55'29.56" W elev 482 ft
Eye alt 28.88 mi

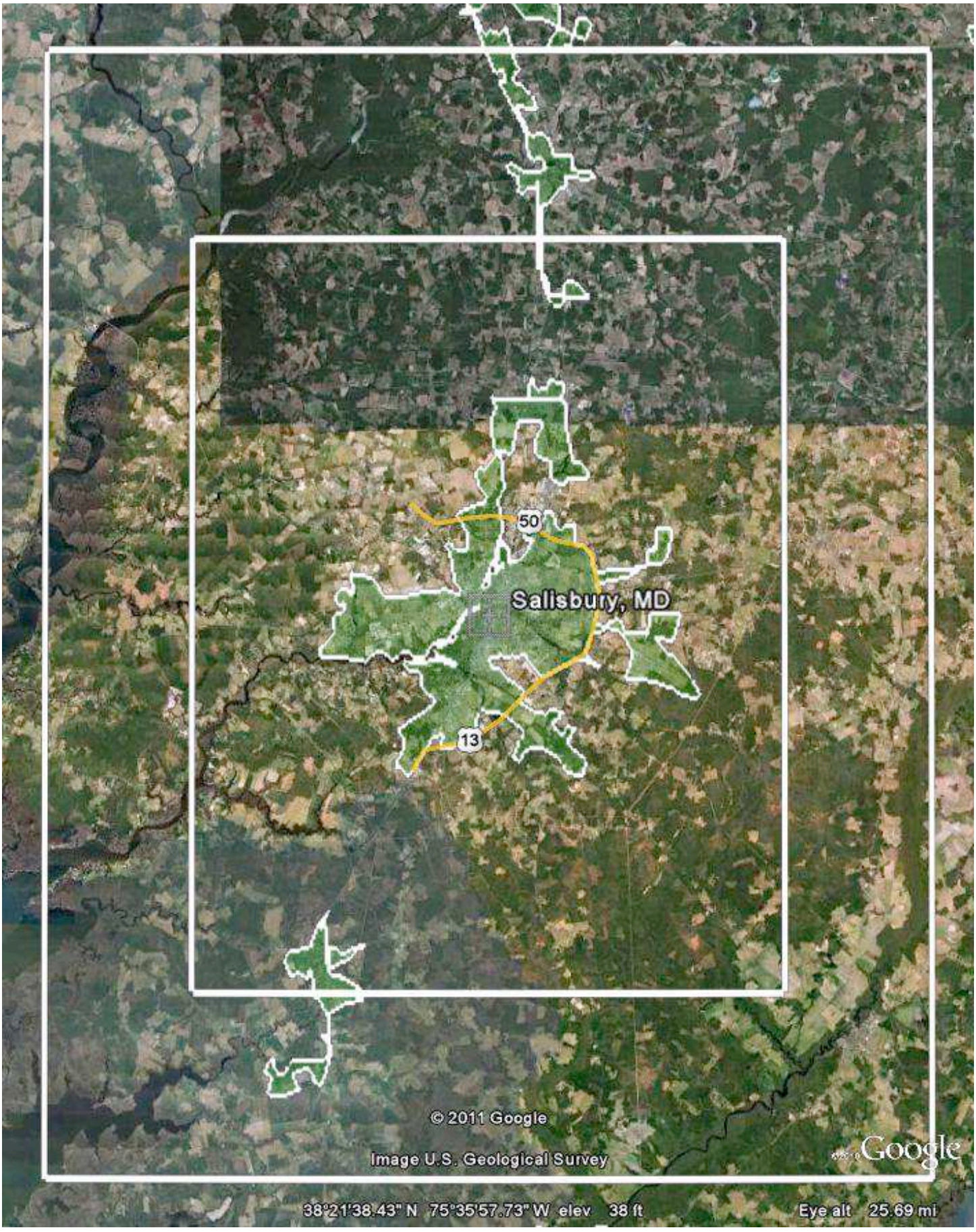

50
Salisbury, MD
13
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Image U.S. Geological Survey
Google
38°21'38.43" N 75°35'57.73" W elev 38 ft
Eye alt 25.69 mi