I-37 Corridor Study Report
Appendices A - K

I-69 to I-410

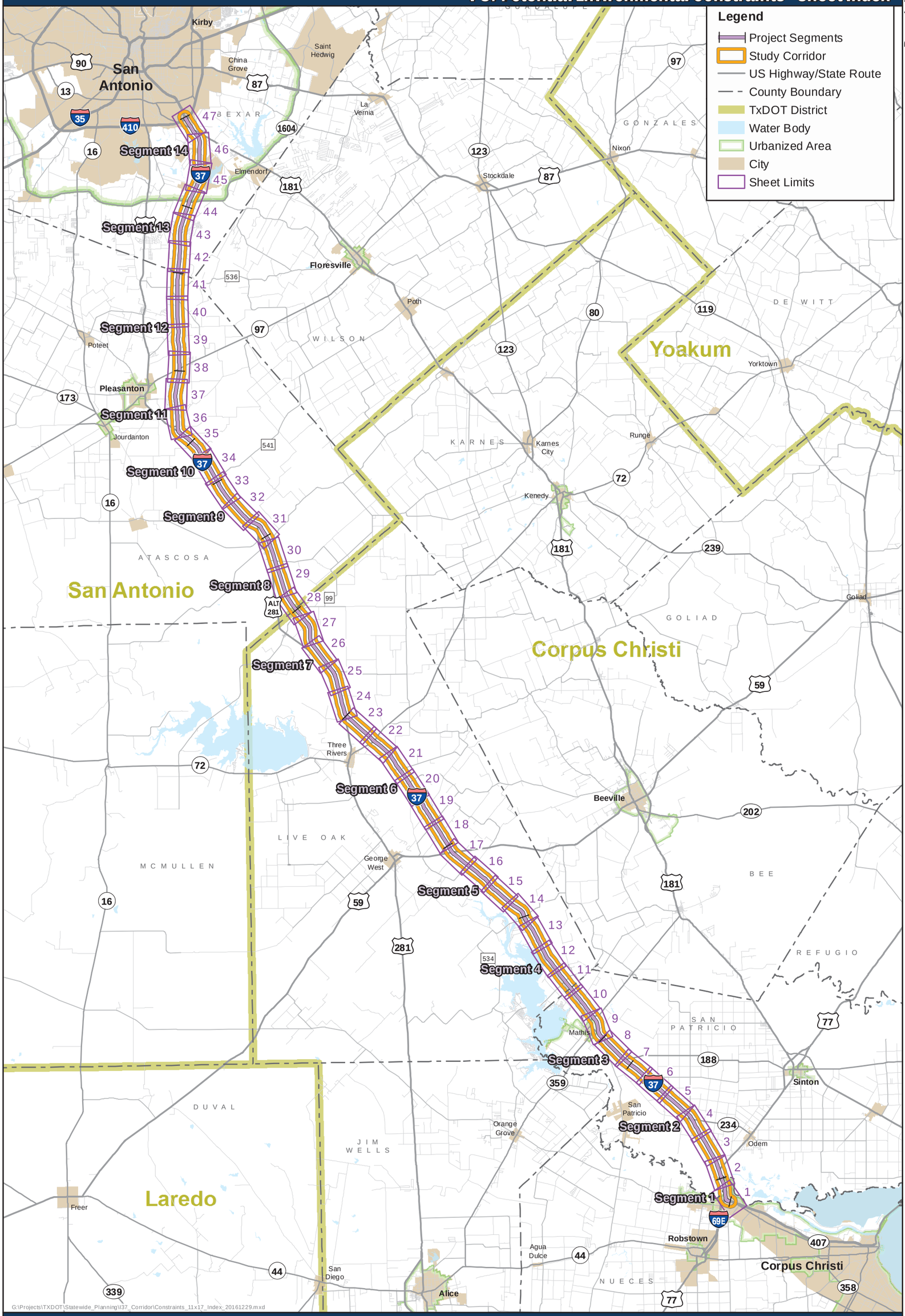
TxDOT, Transportation Planning and Programming Division

January 2018

APPENDIX A

ENVIRONMENTAL MAPS

I-37 Potential Environmental Constraints - Sheet Index



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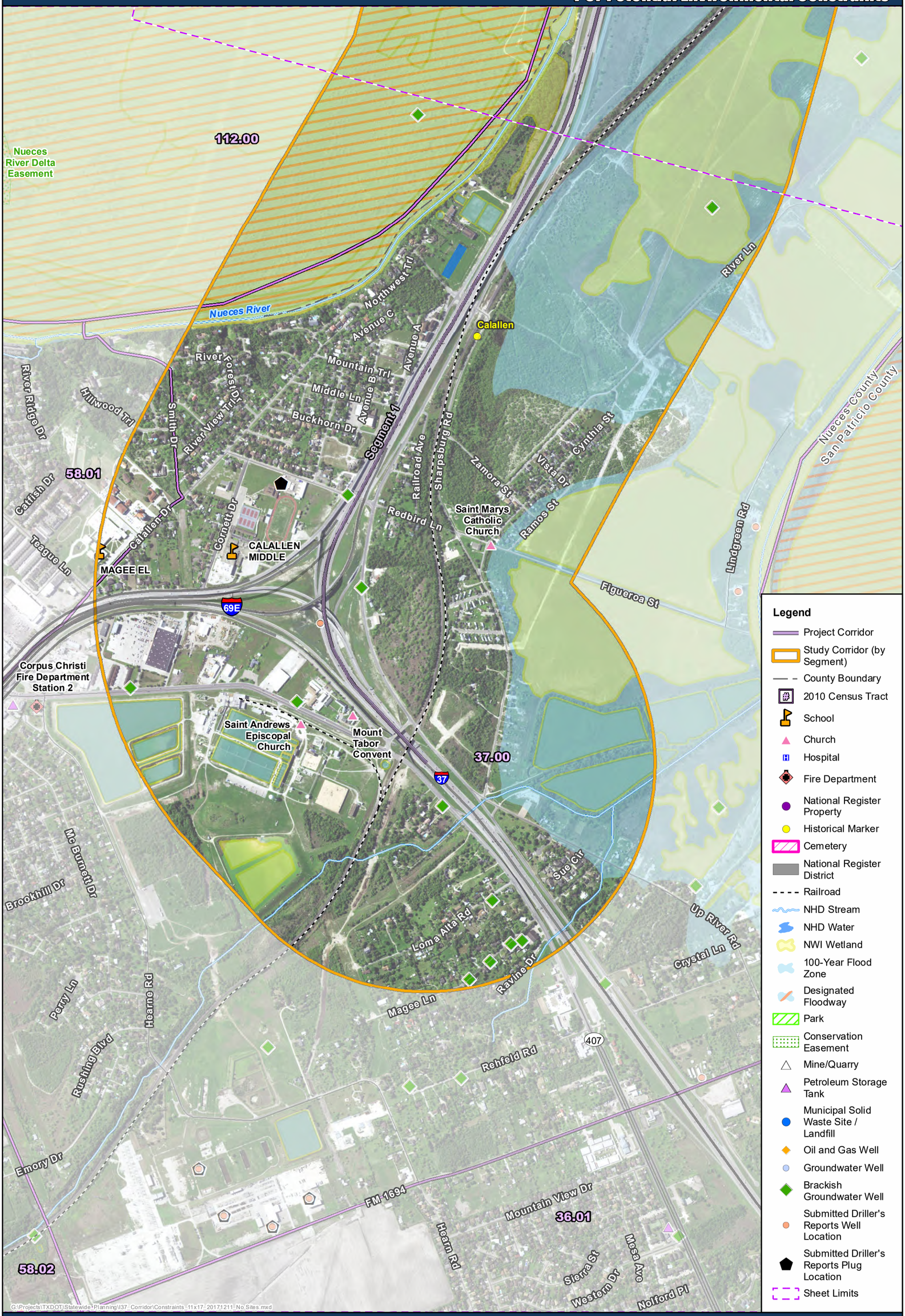

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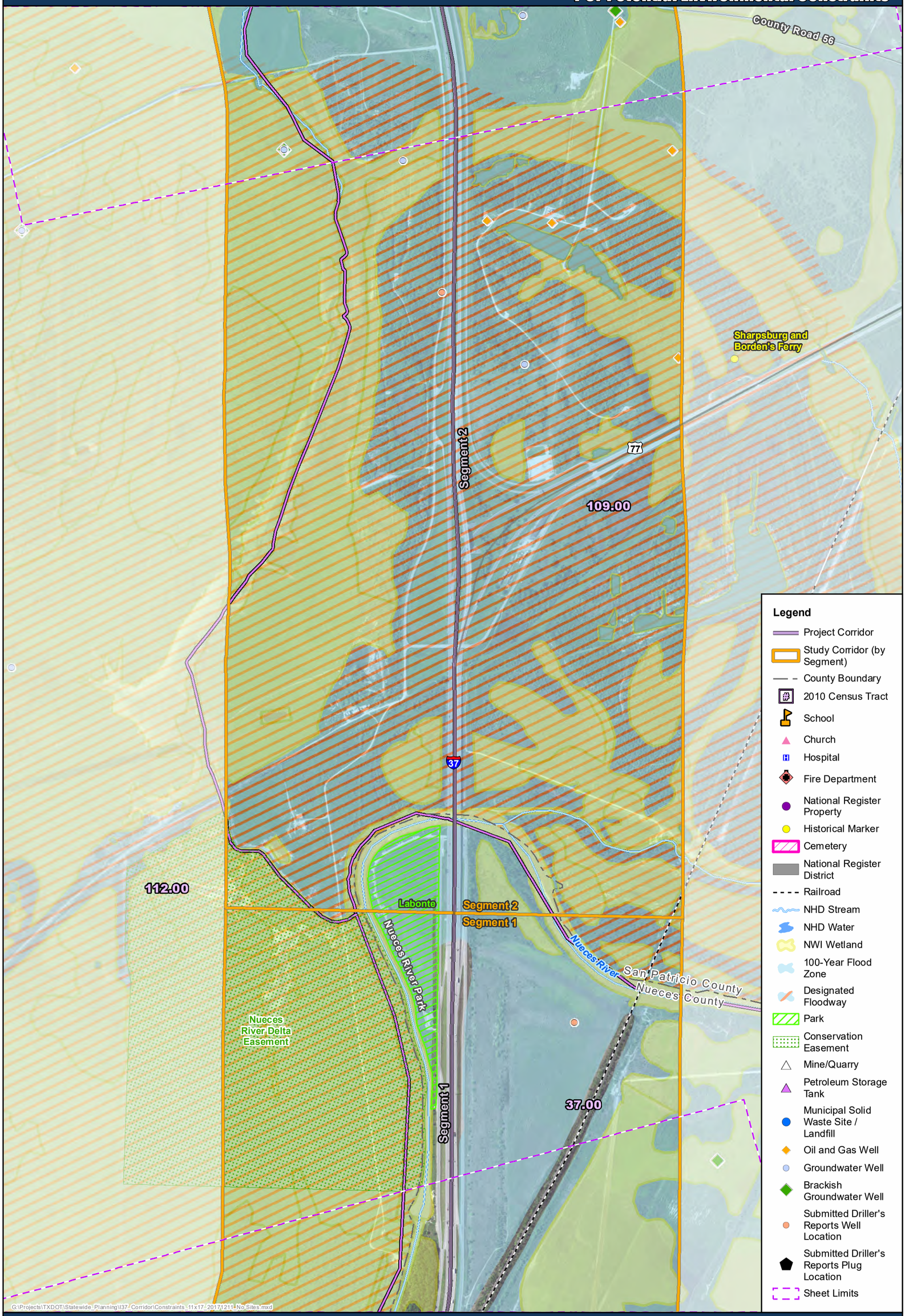

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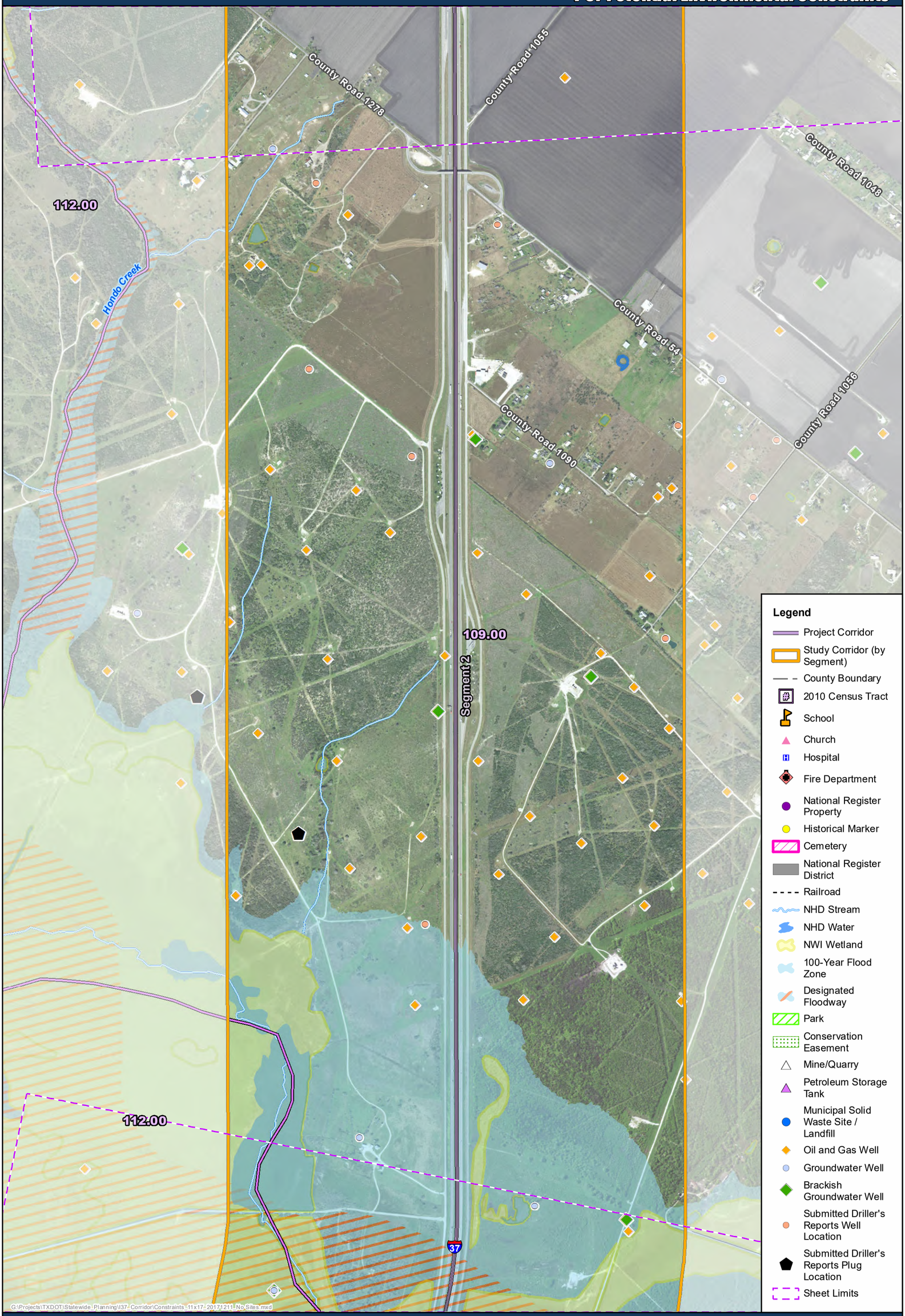

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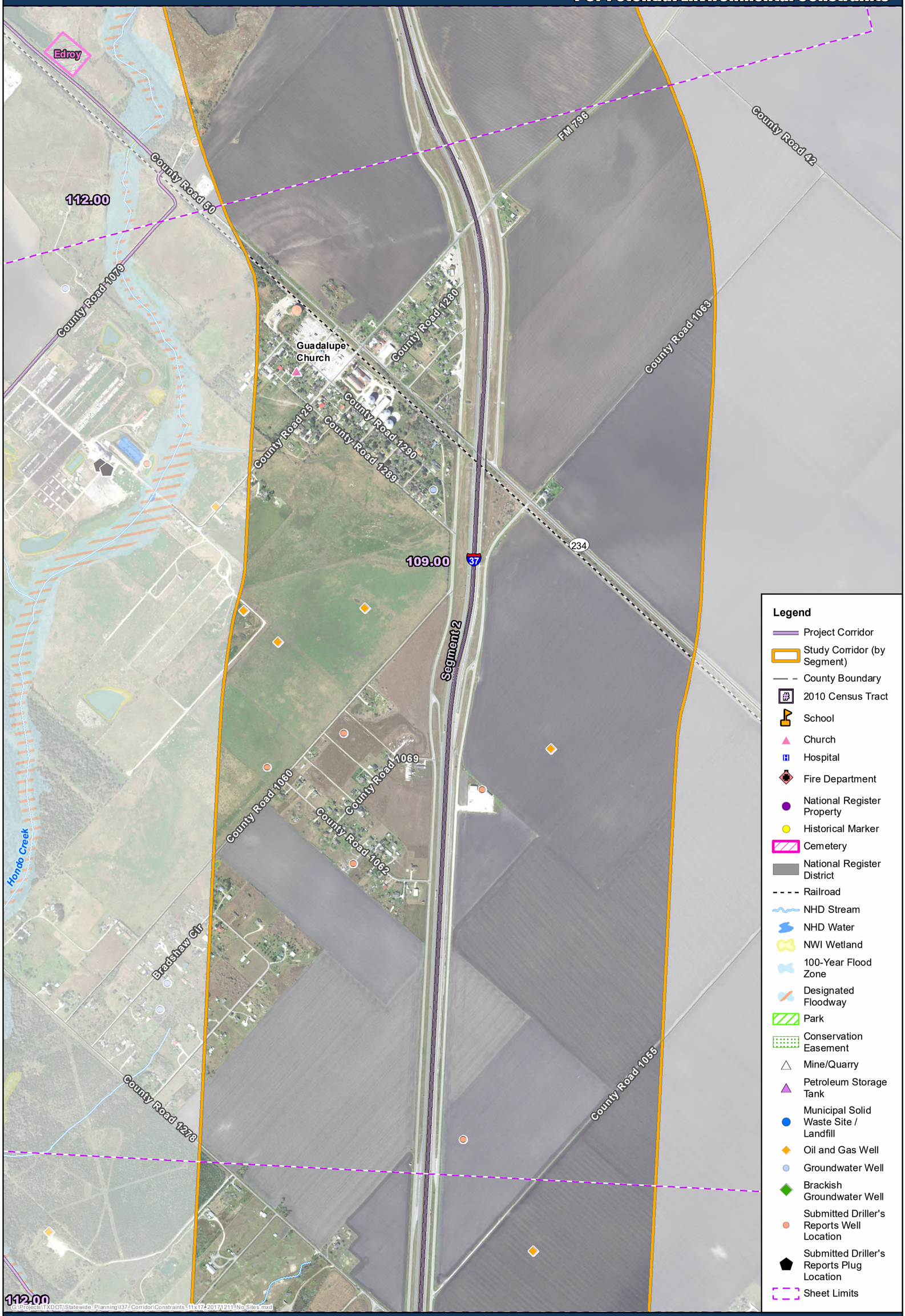

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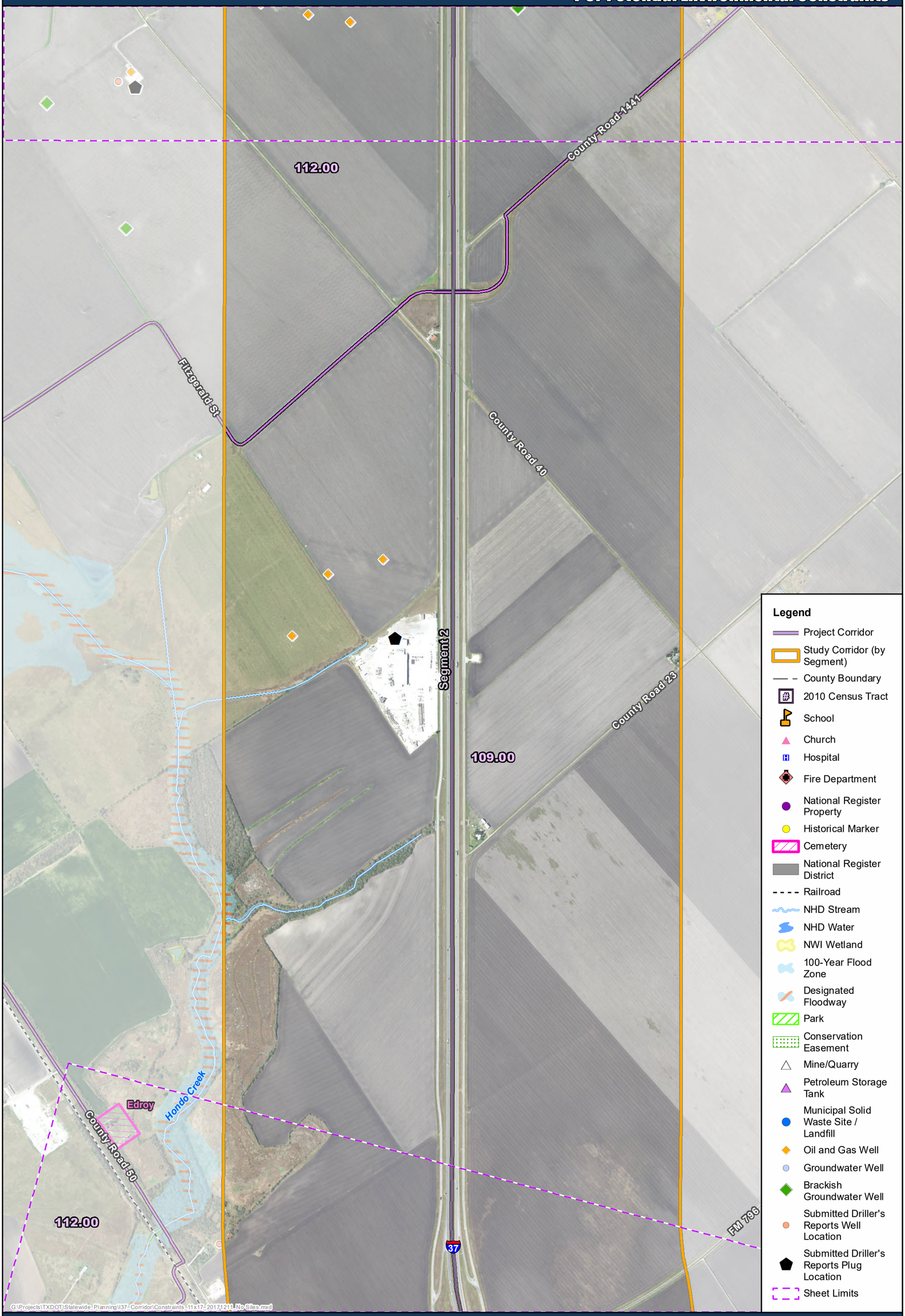

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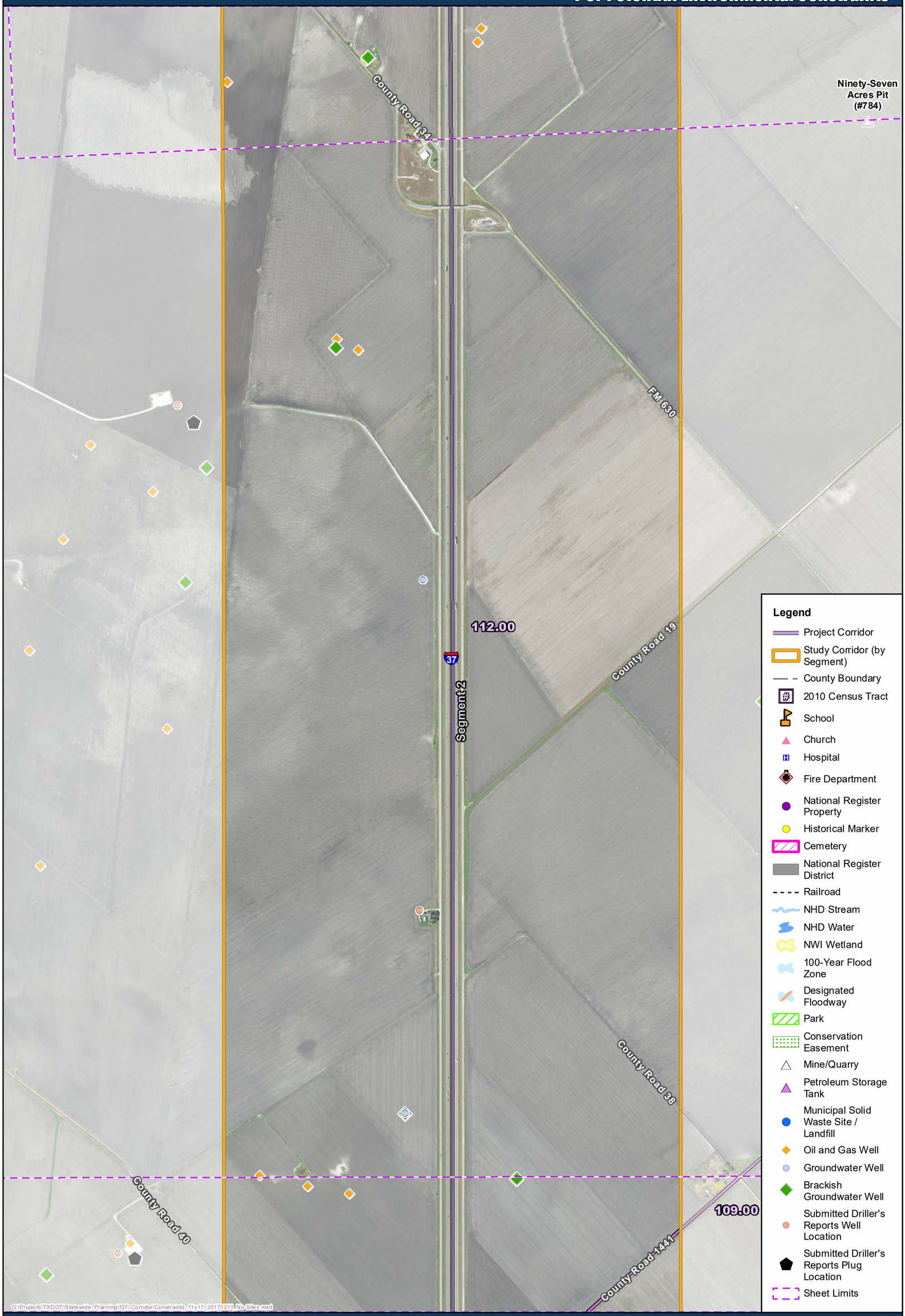

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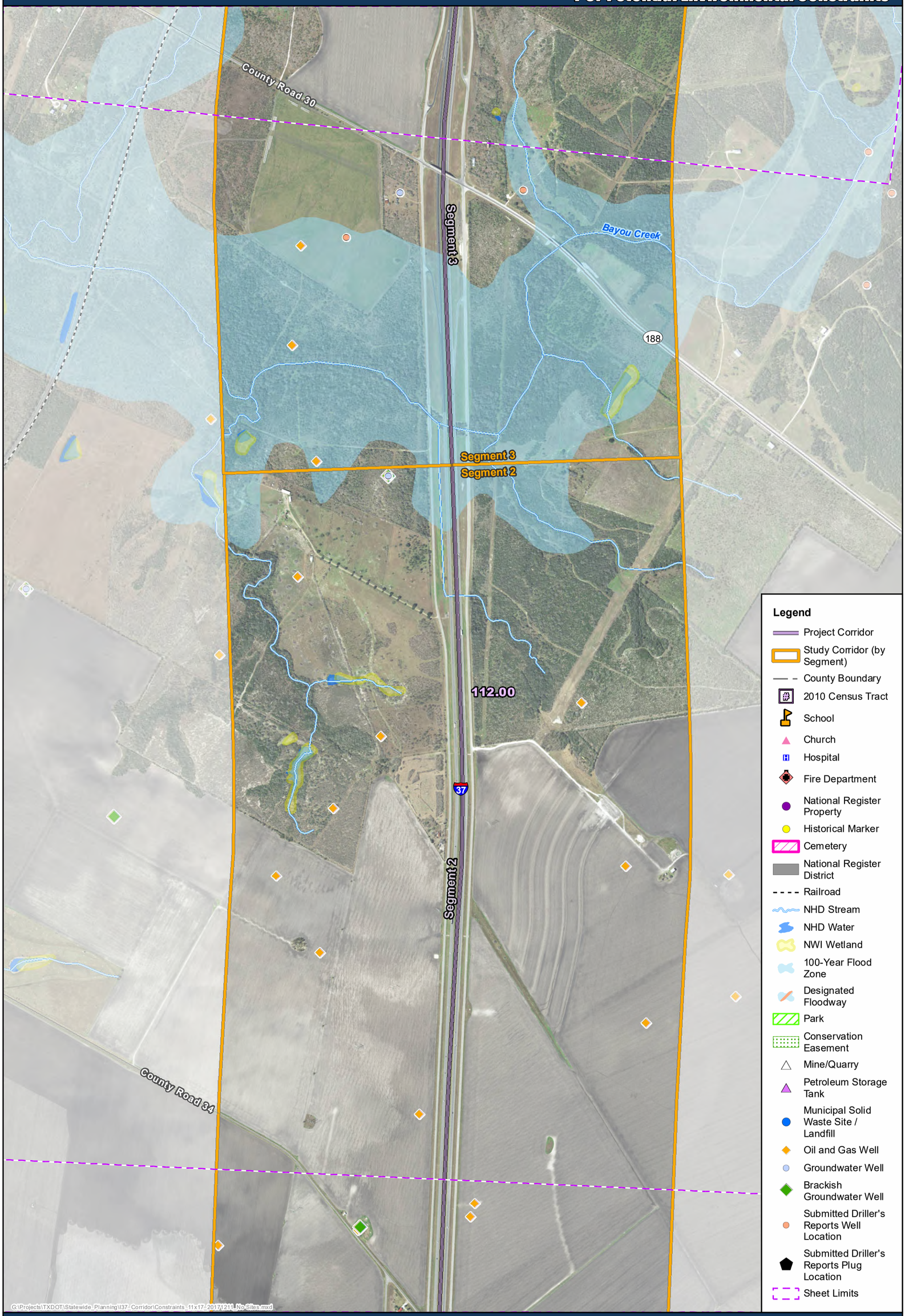

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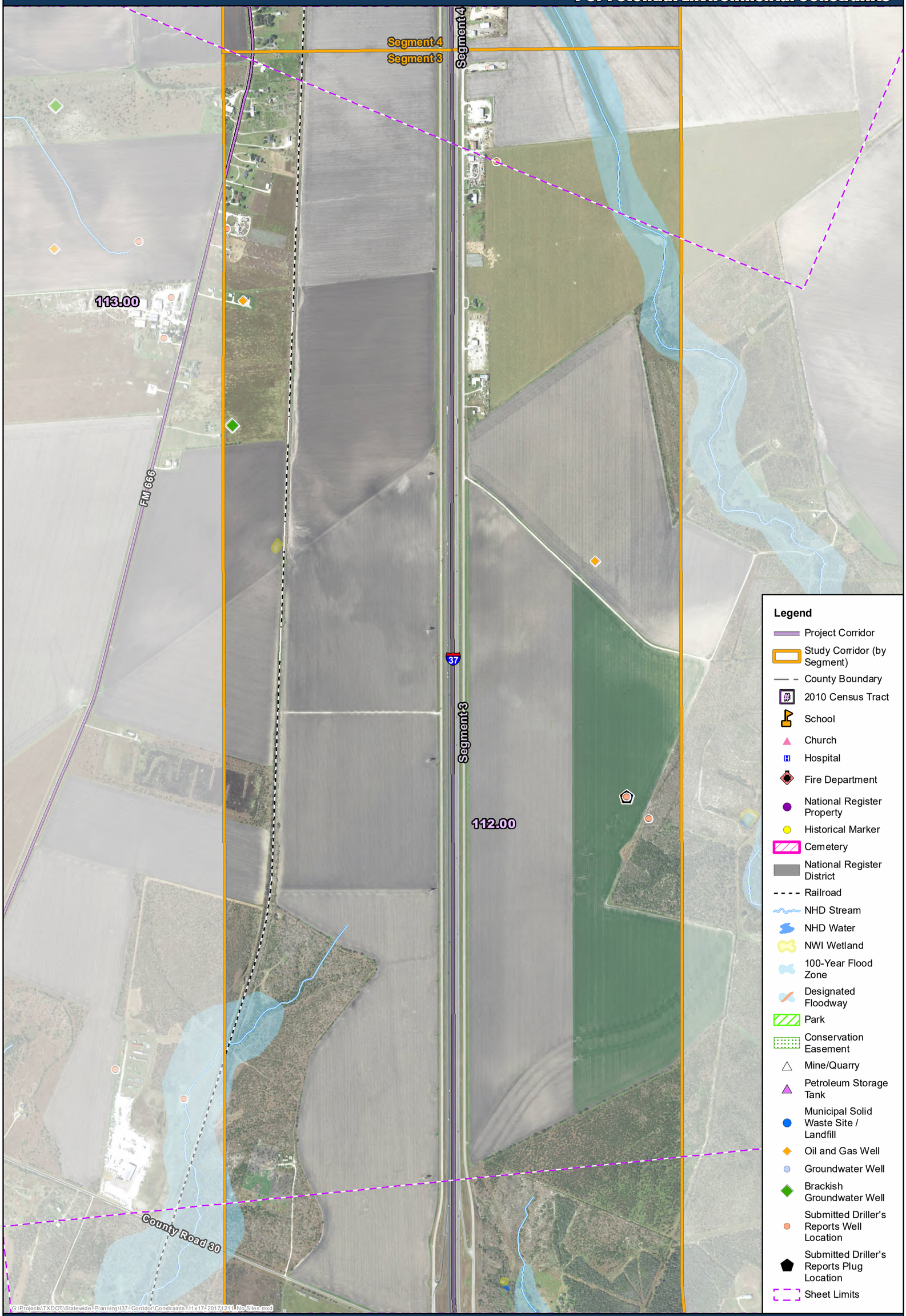

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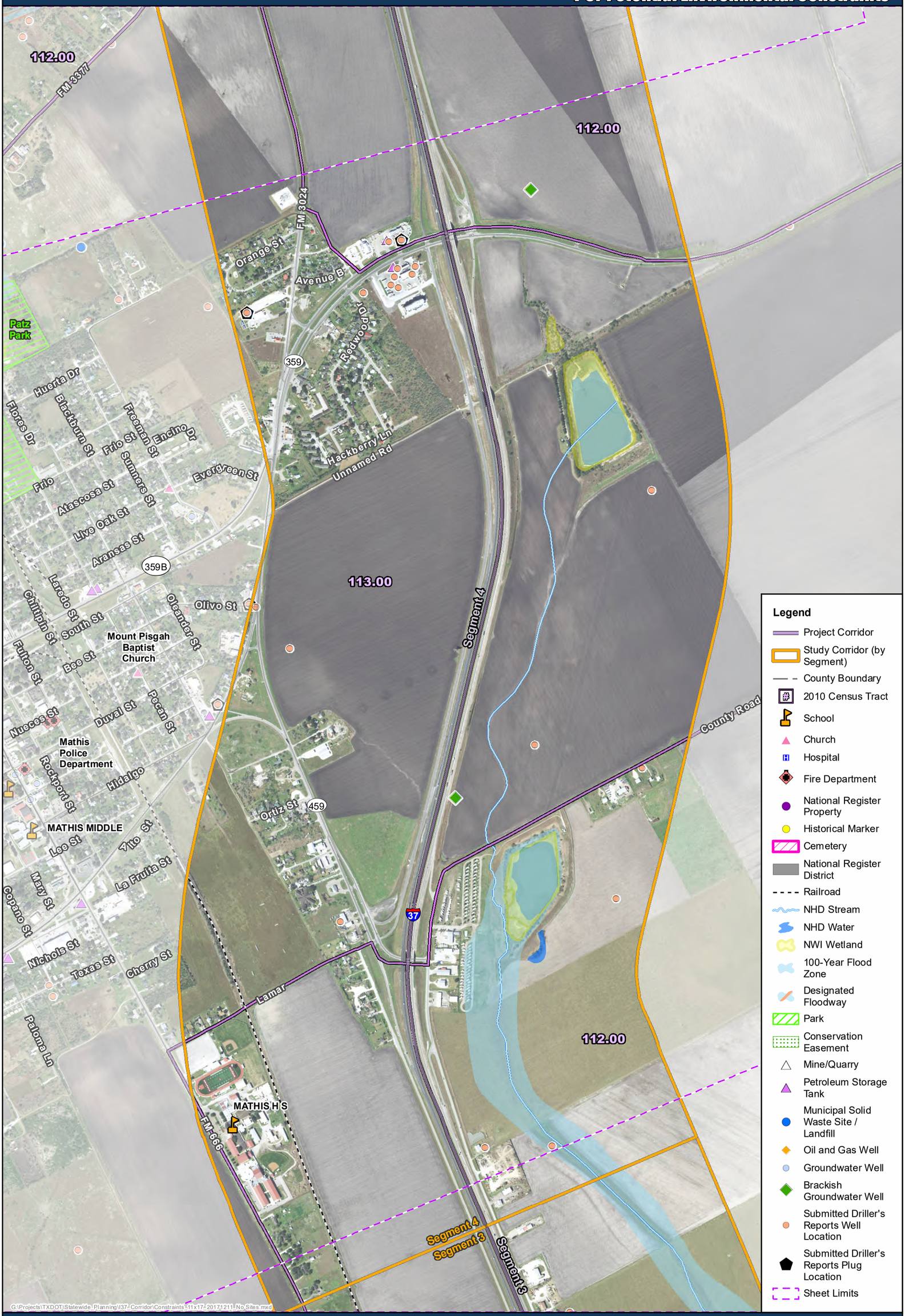

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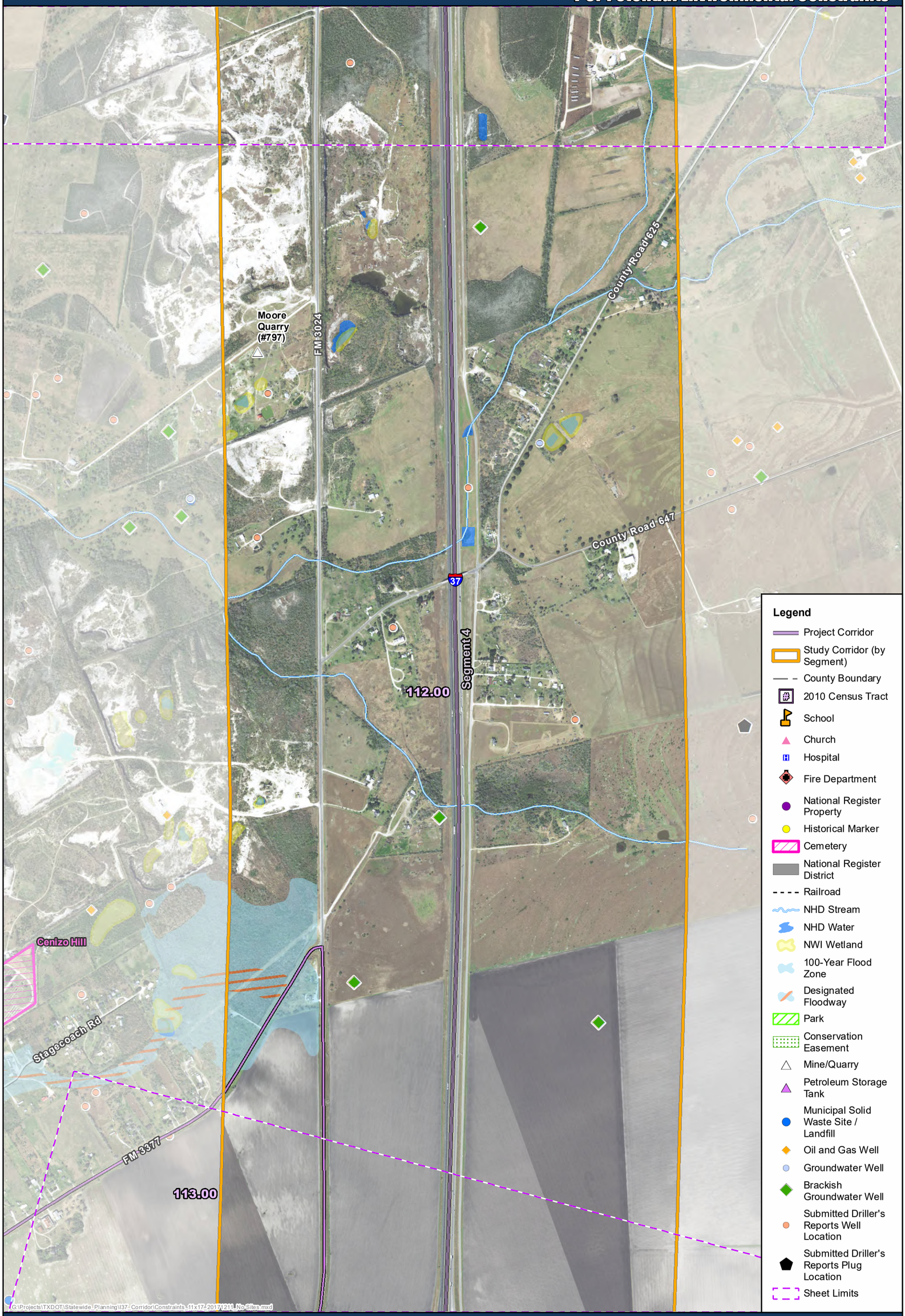

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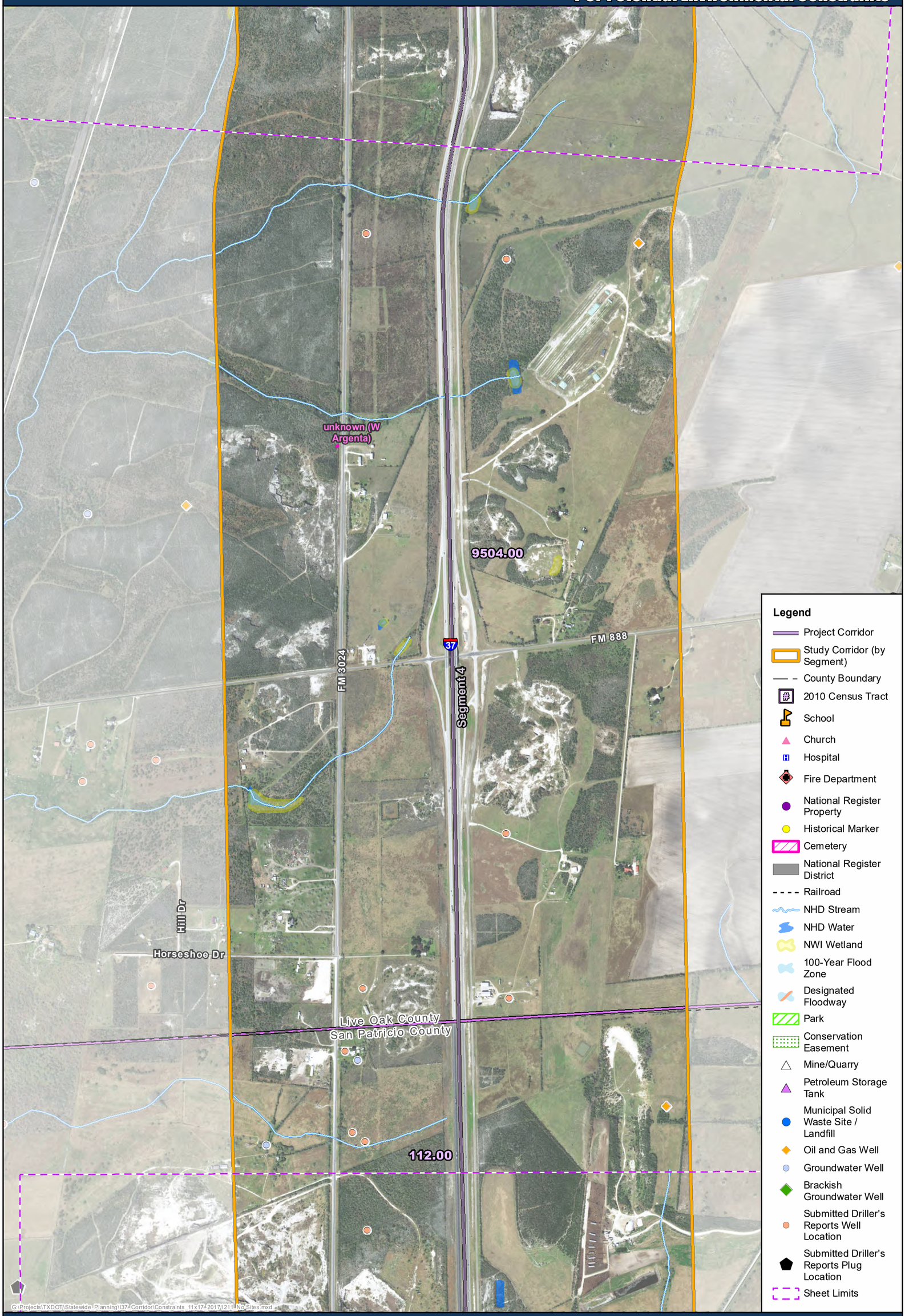

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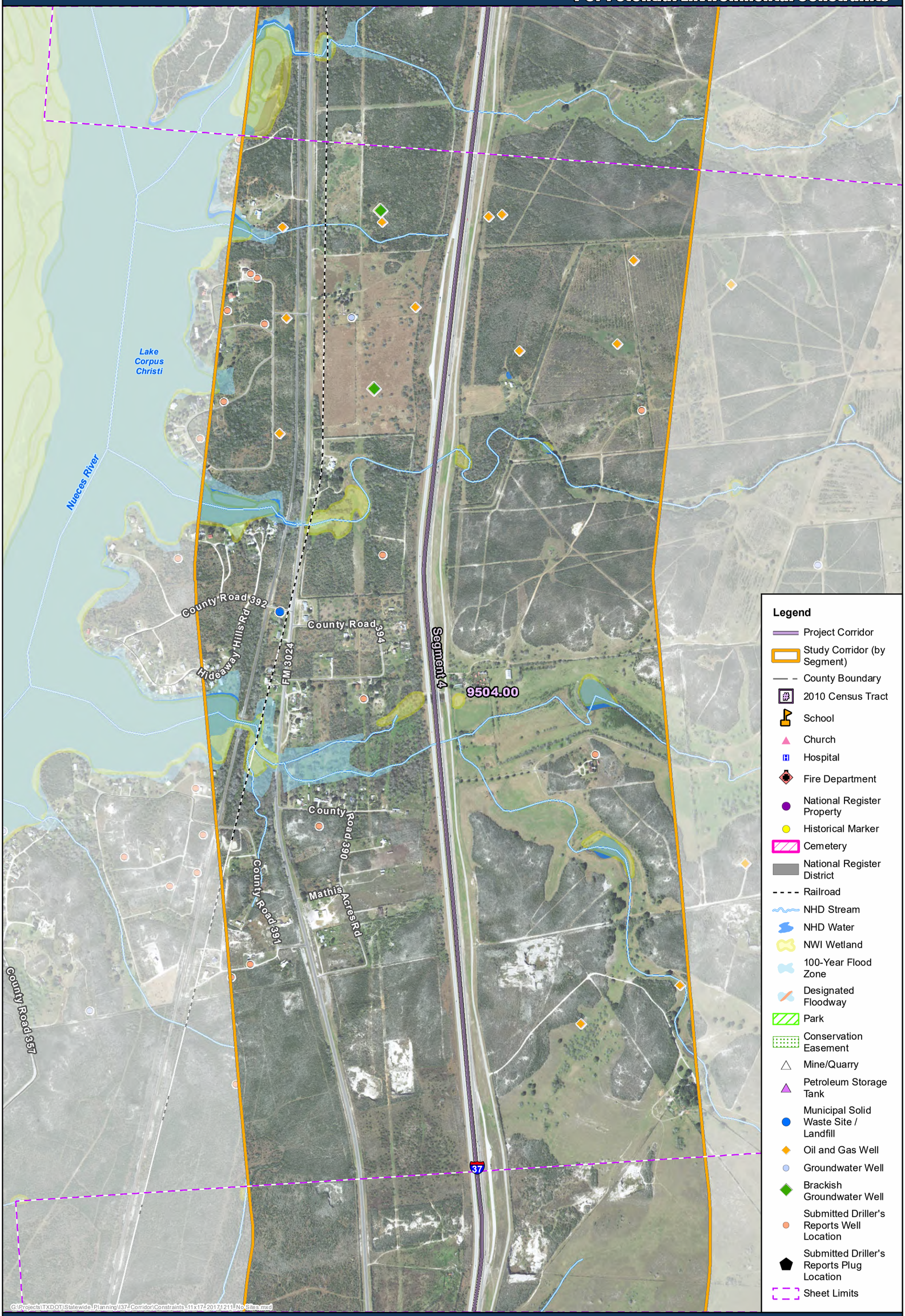

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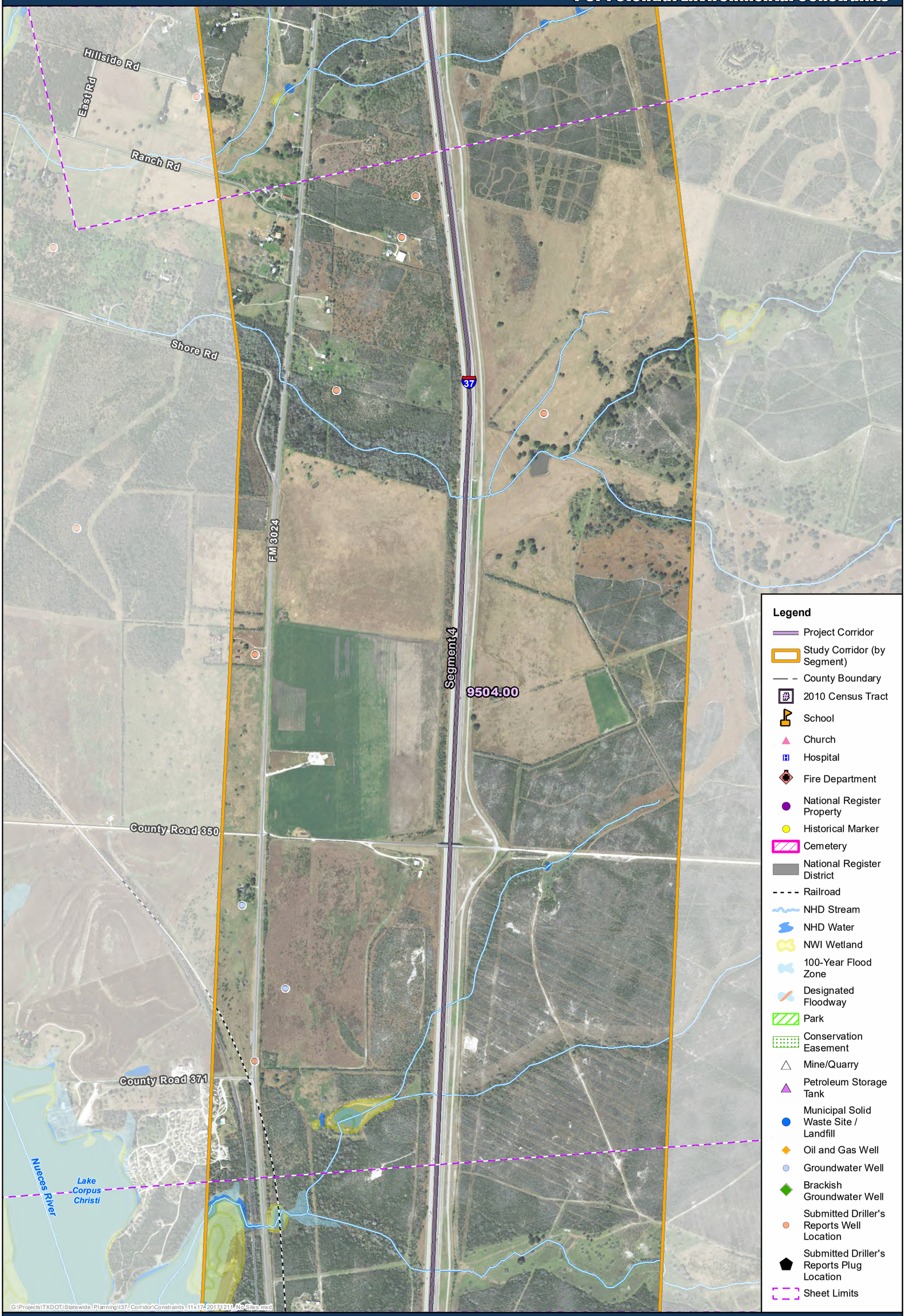

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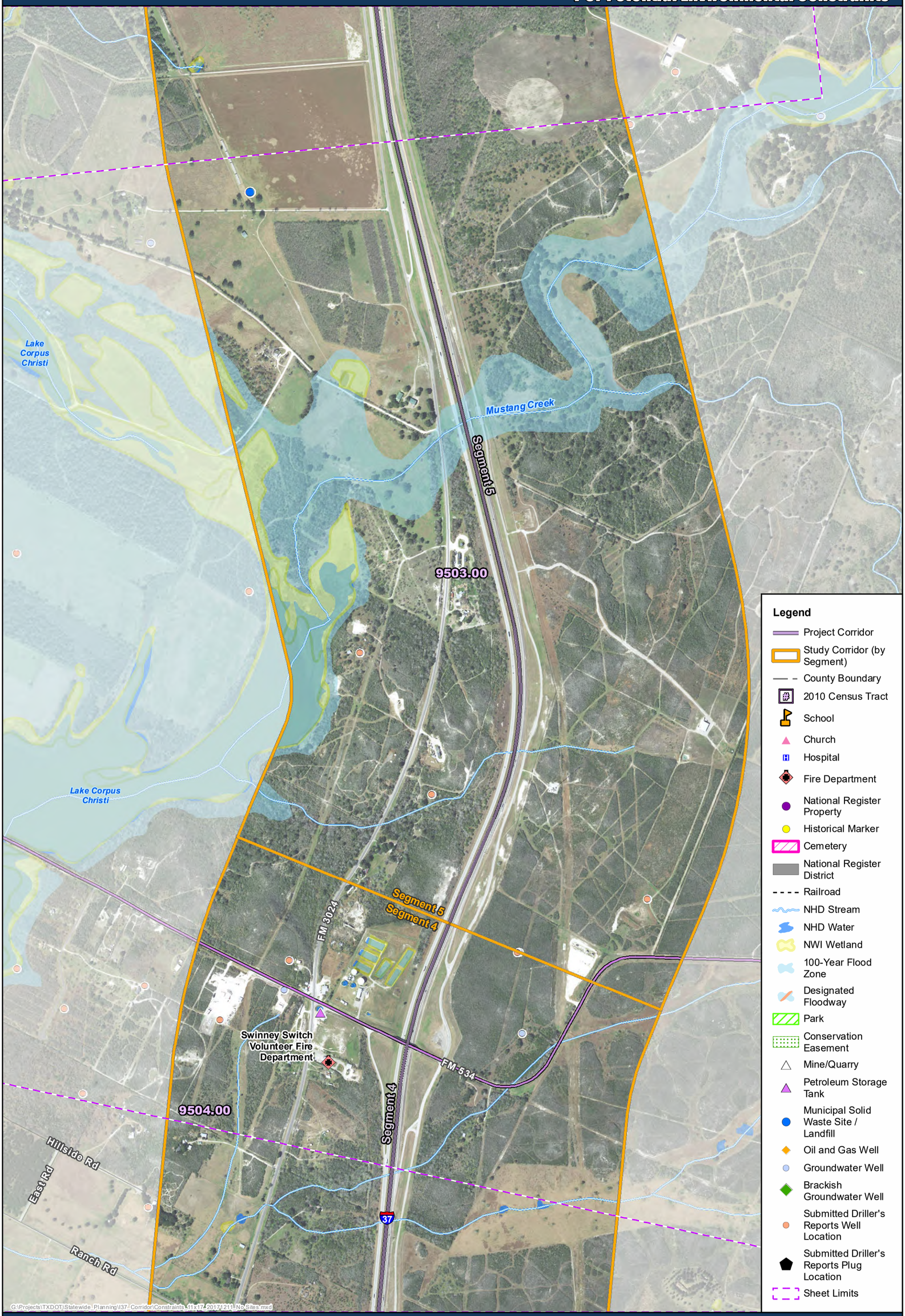

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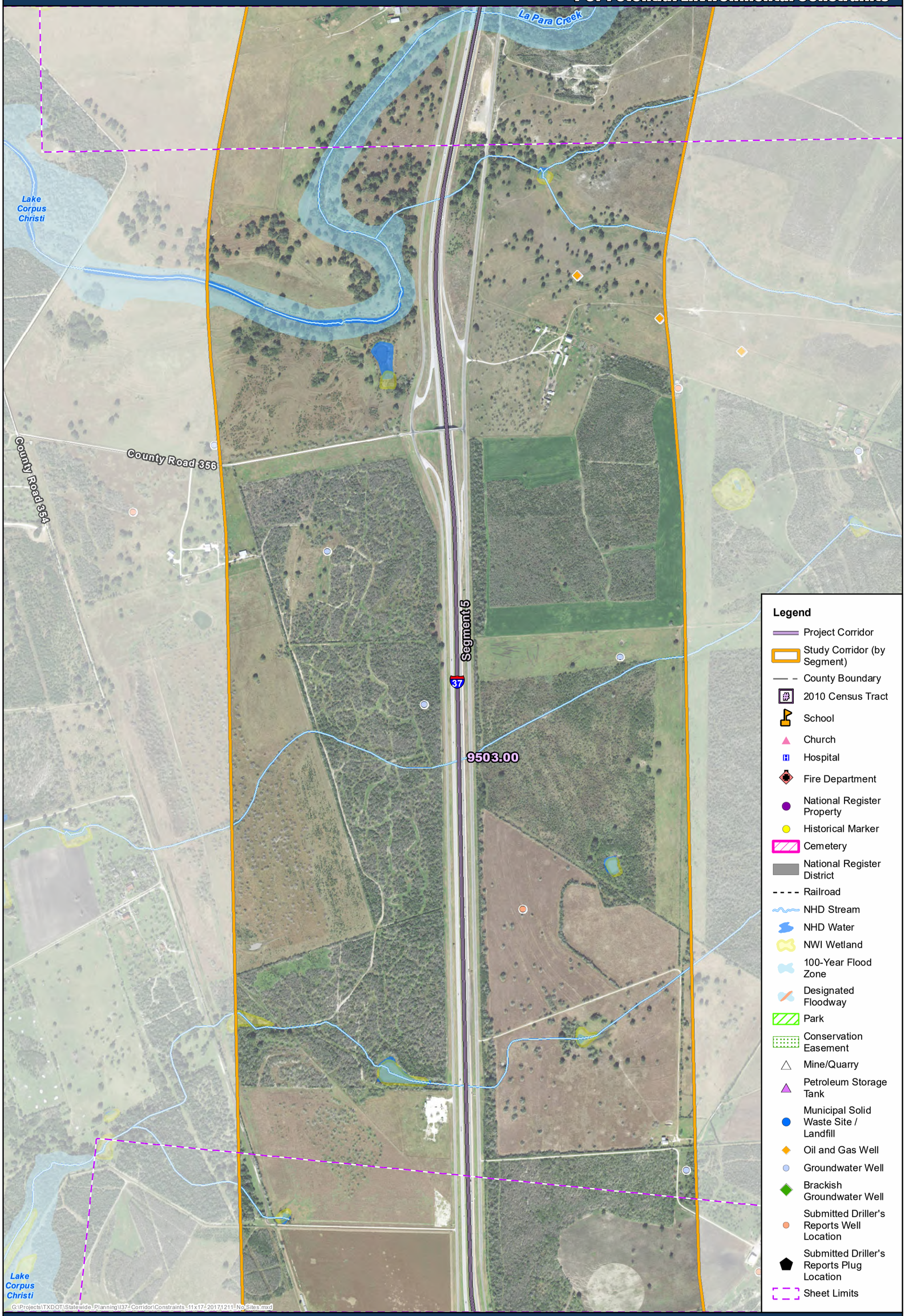

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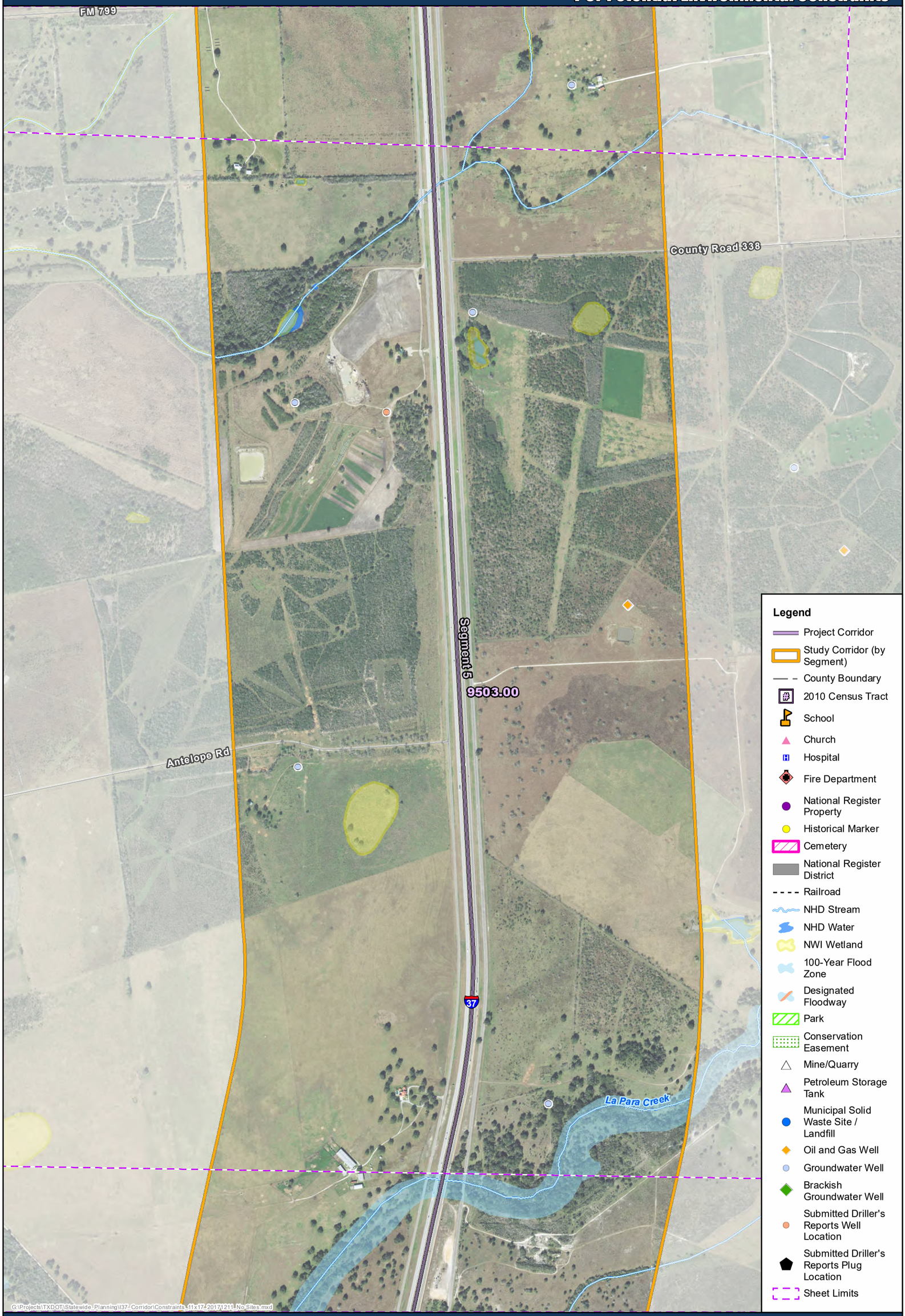

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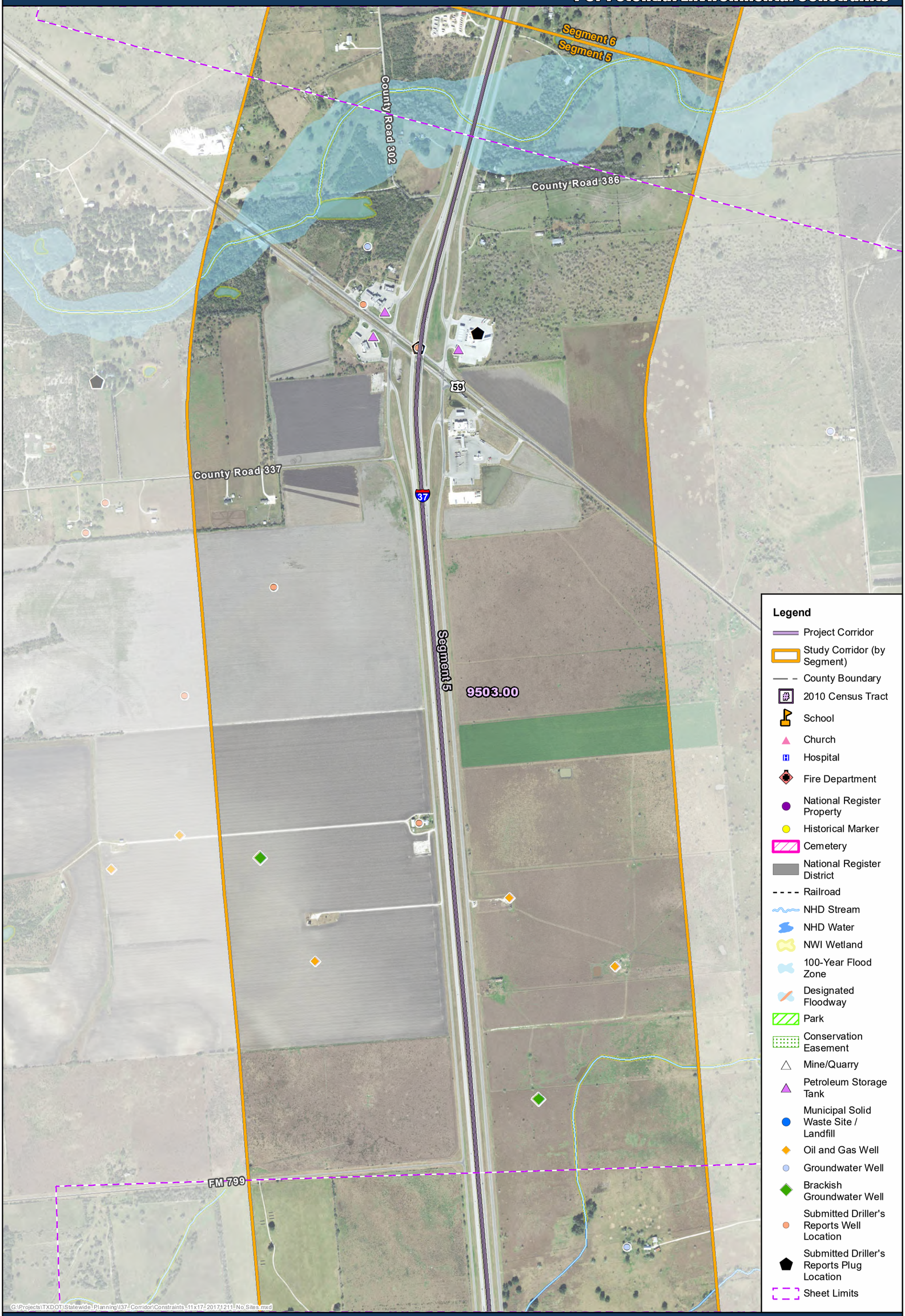

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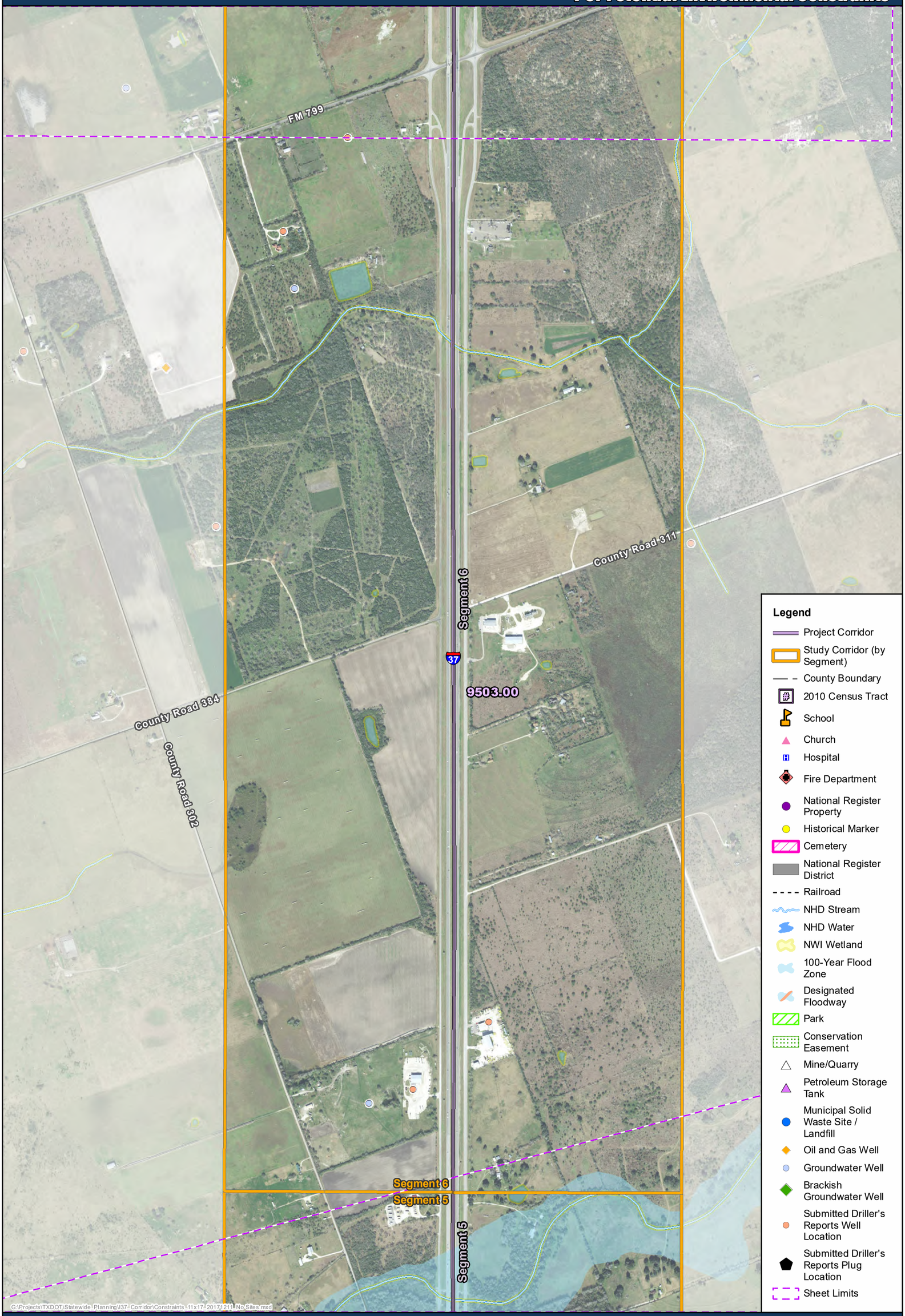

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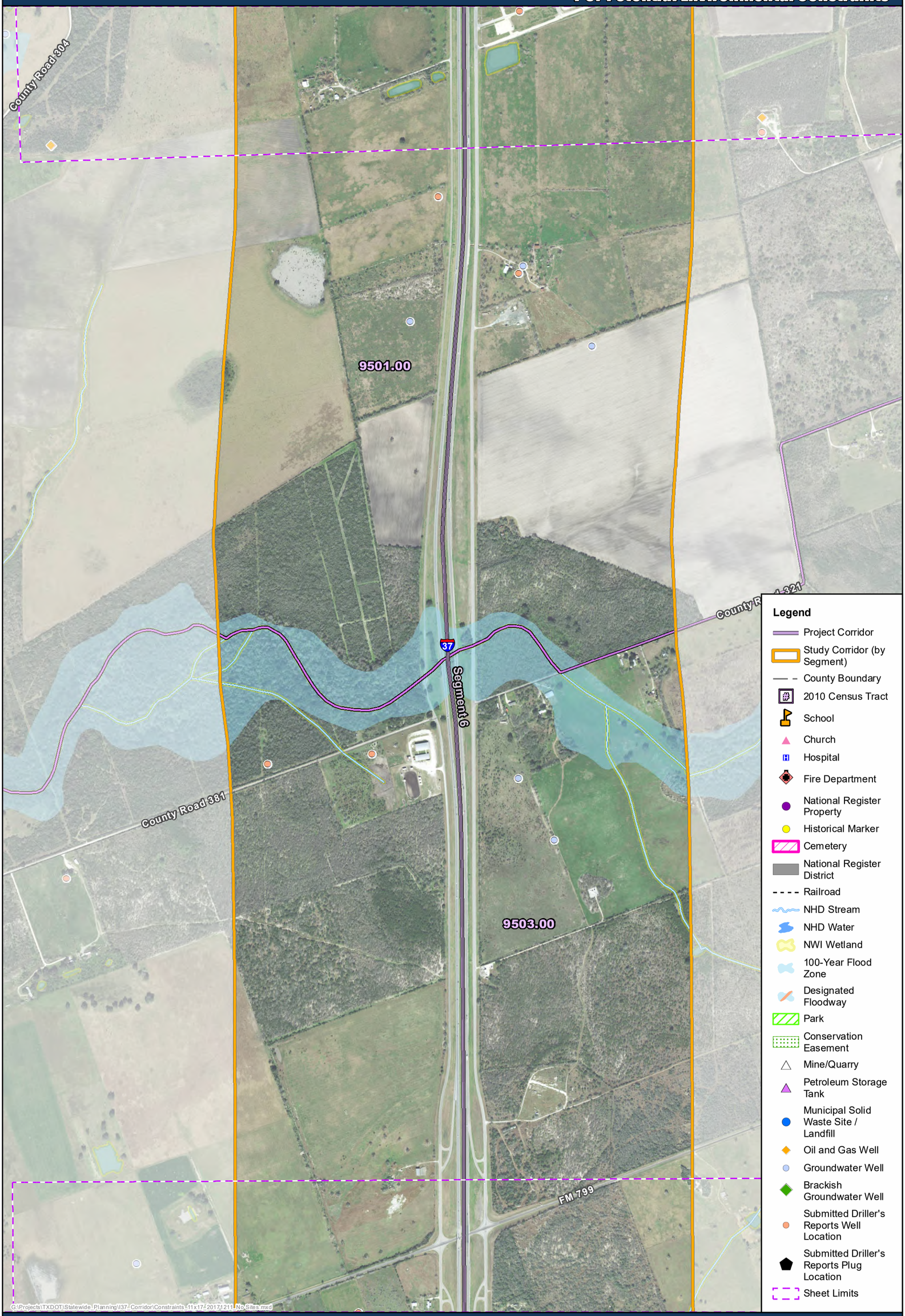

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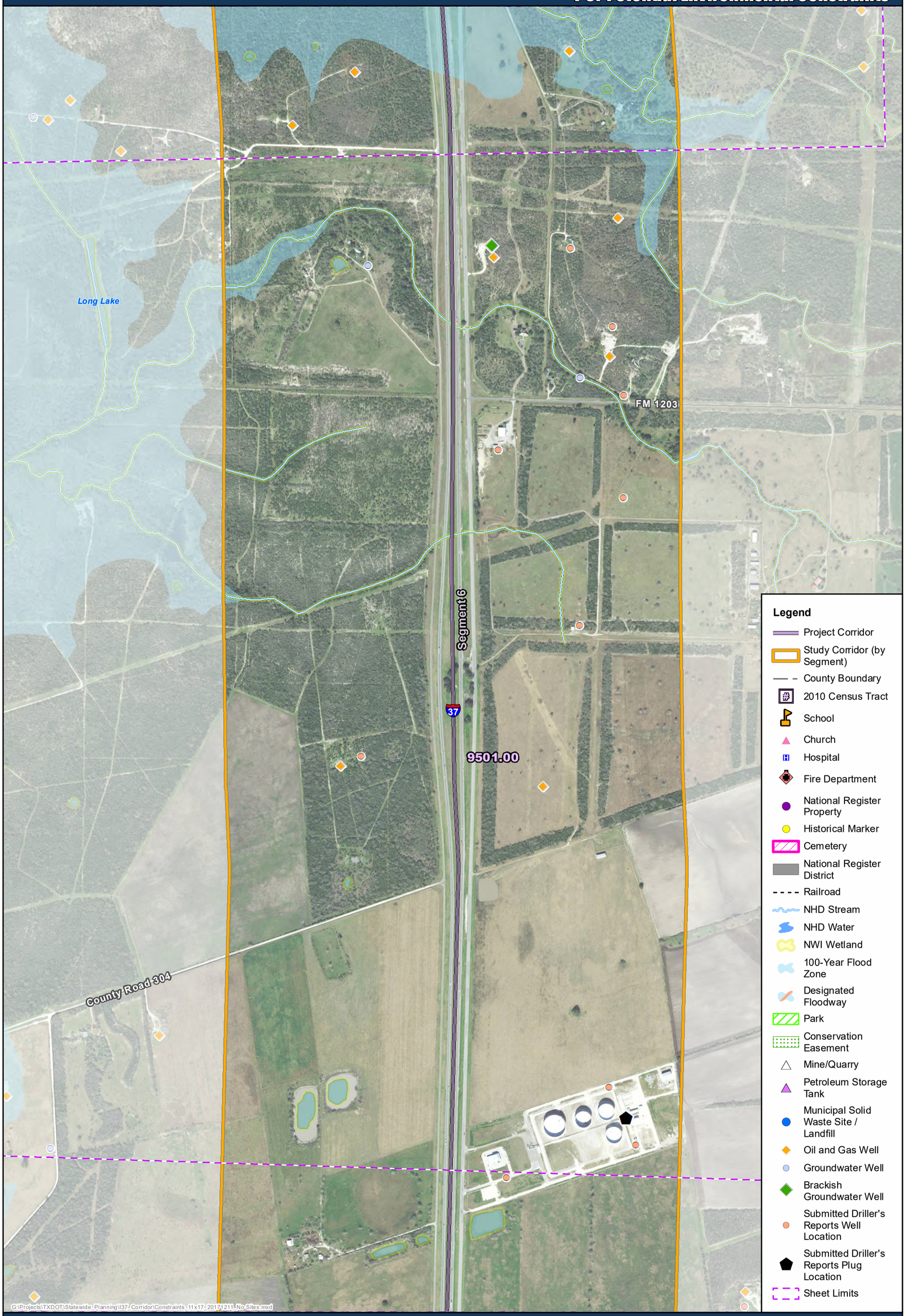

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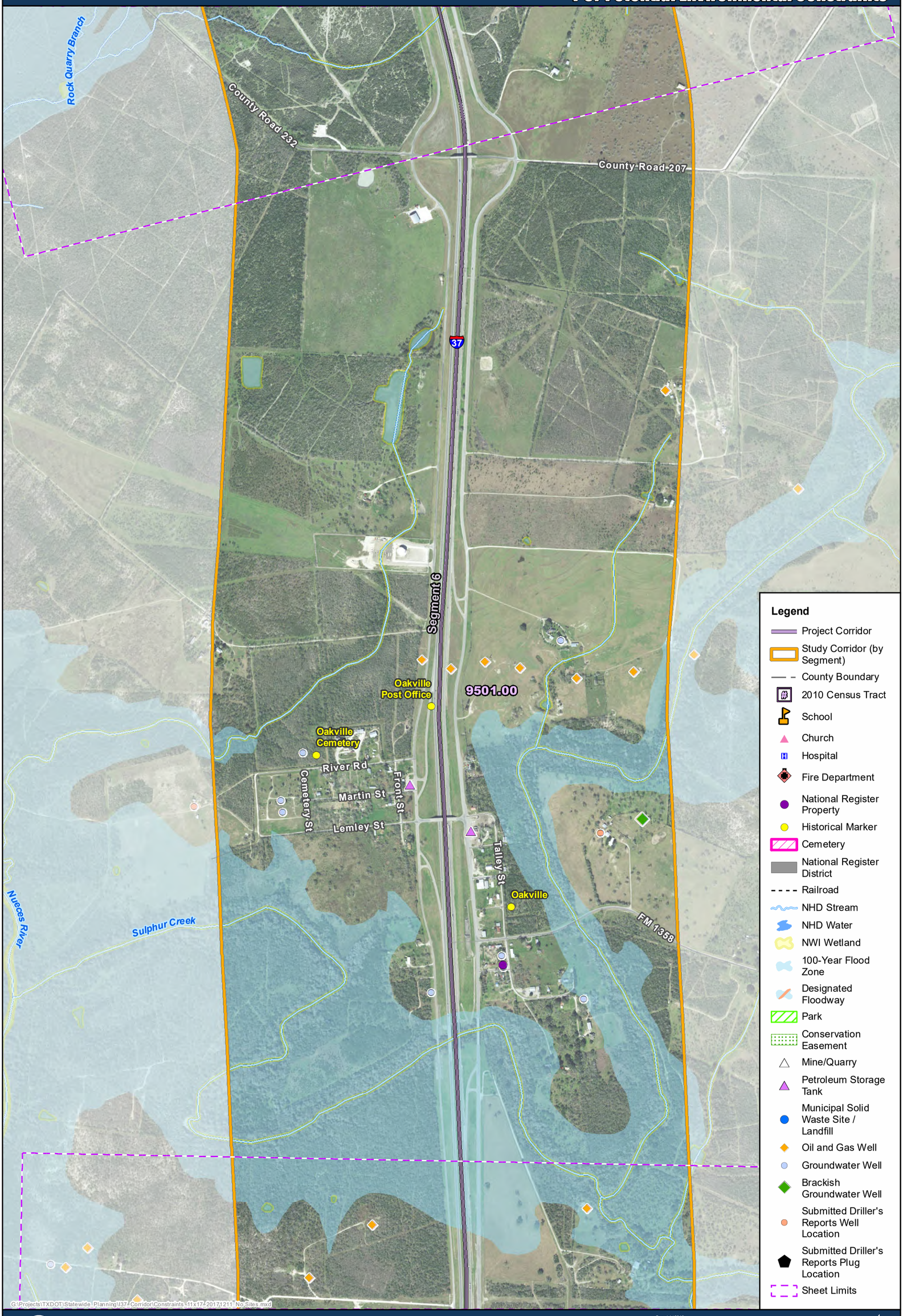

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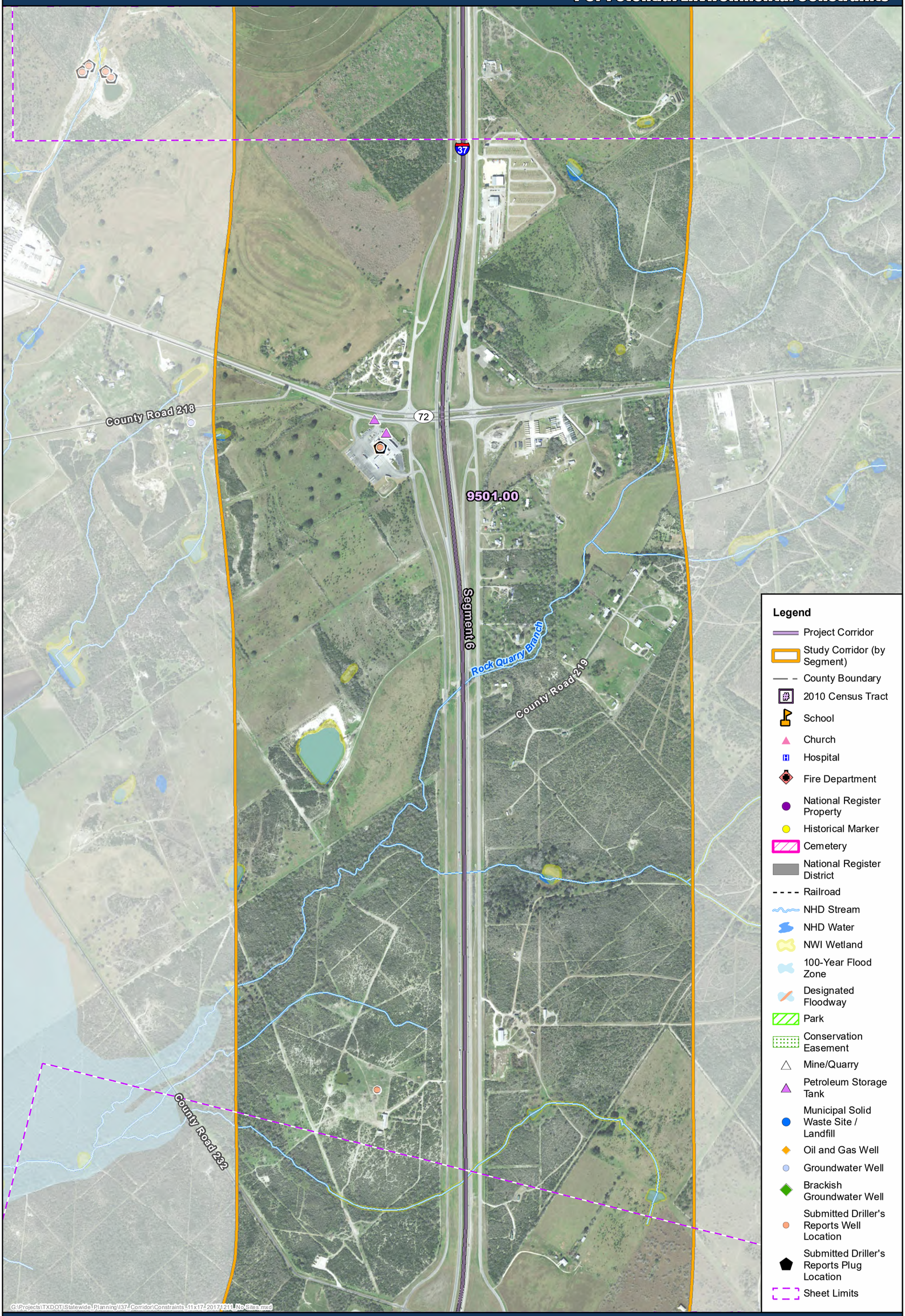

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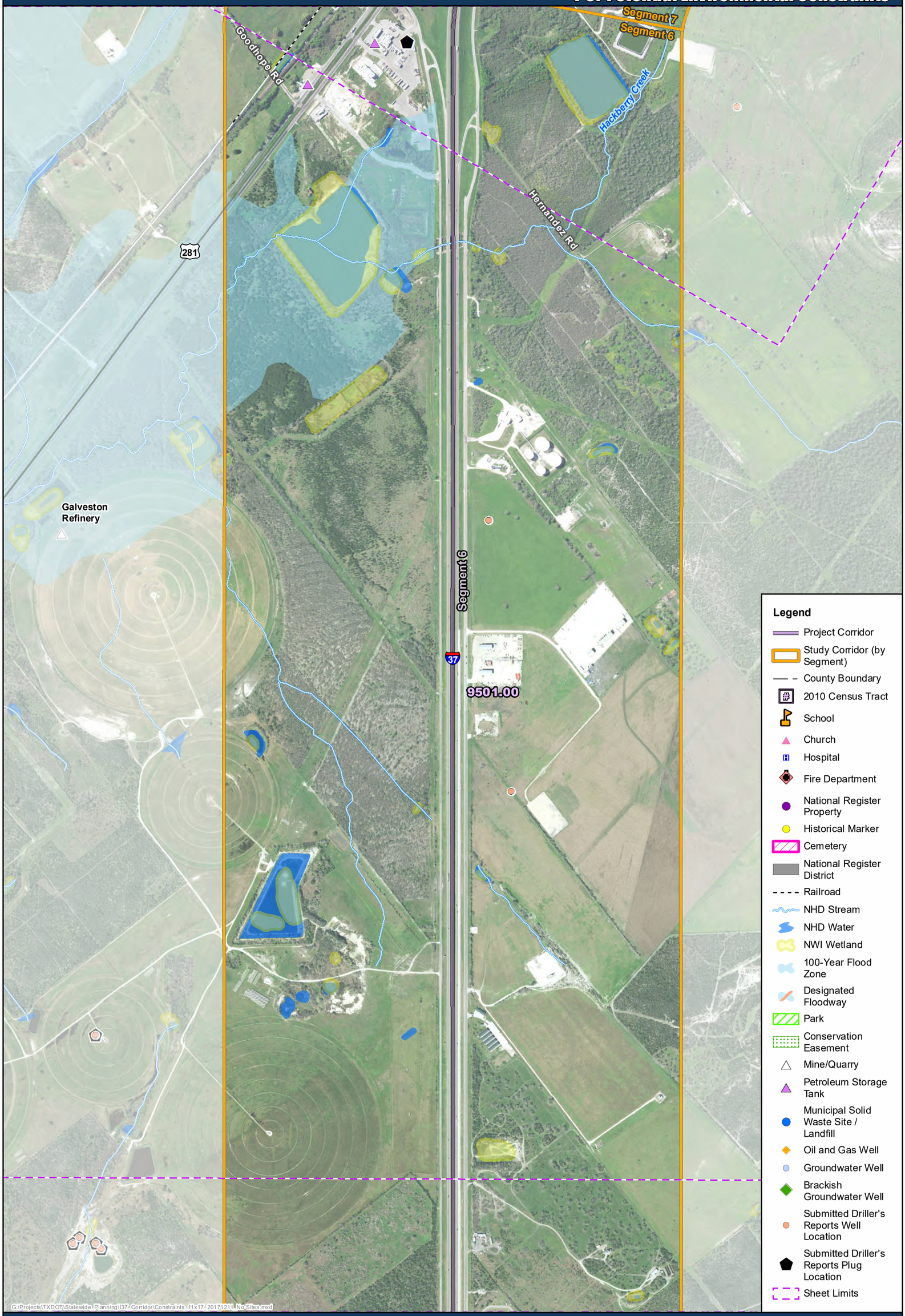

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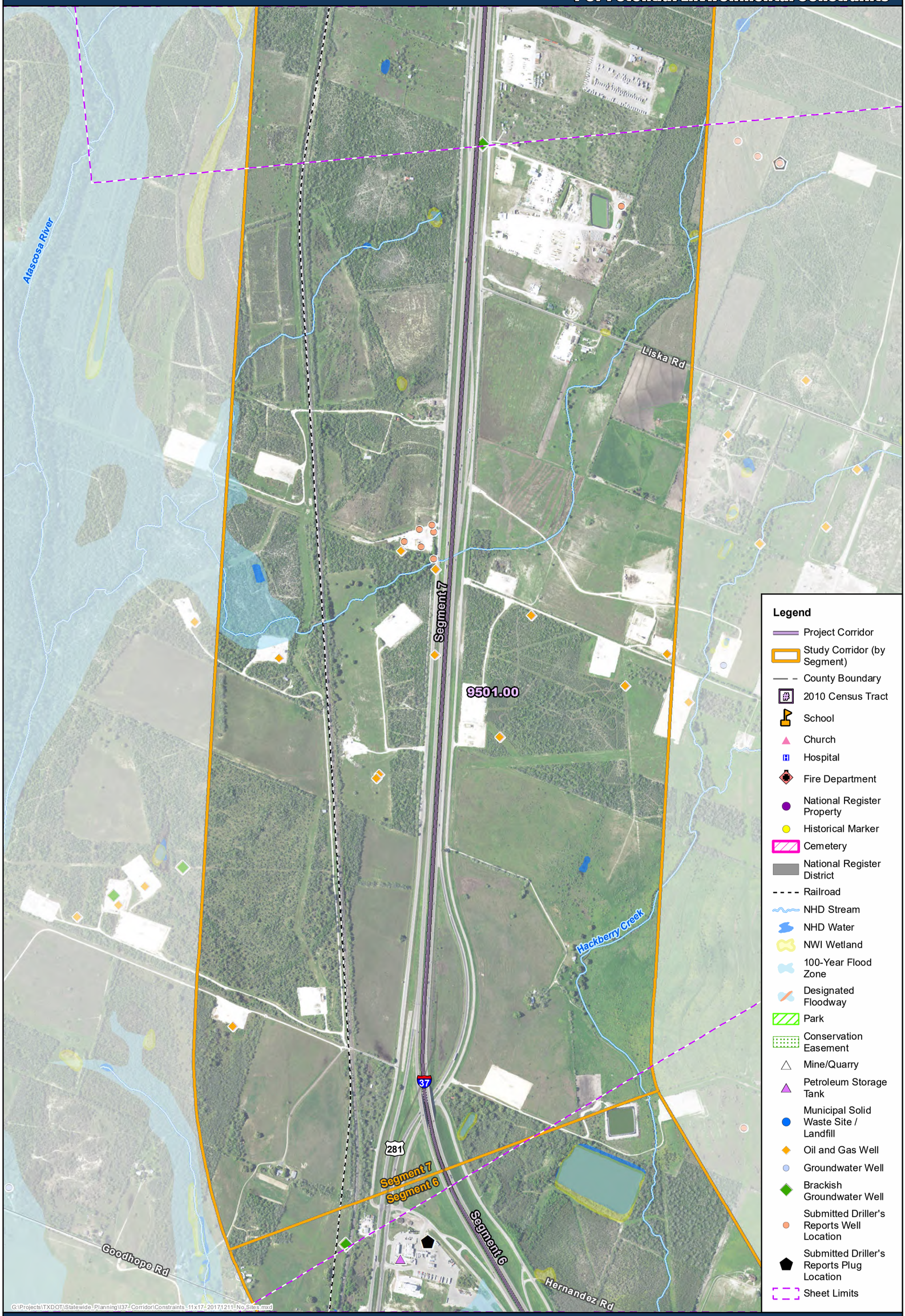

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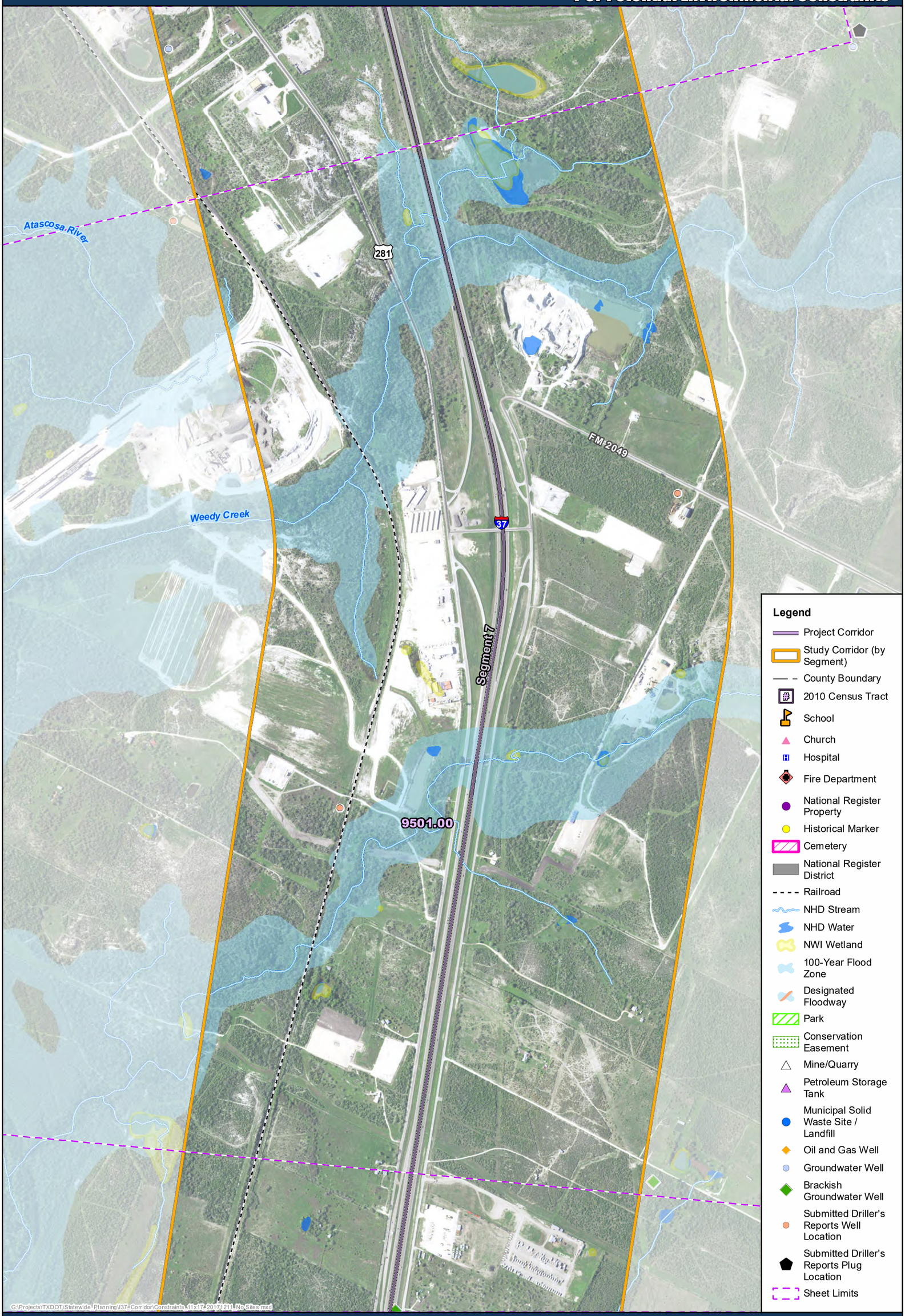

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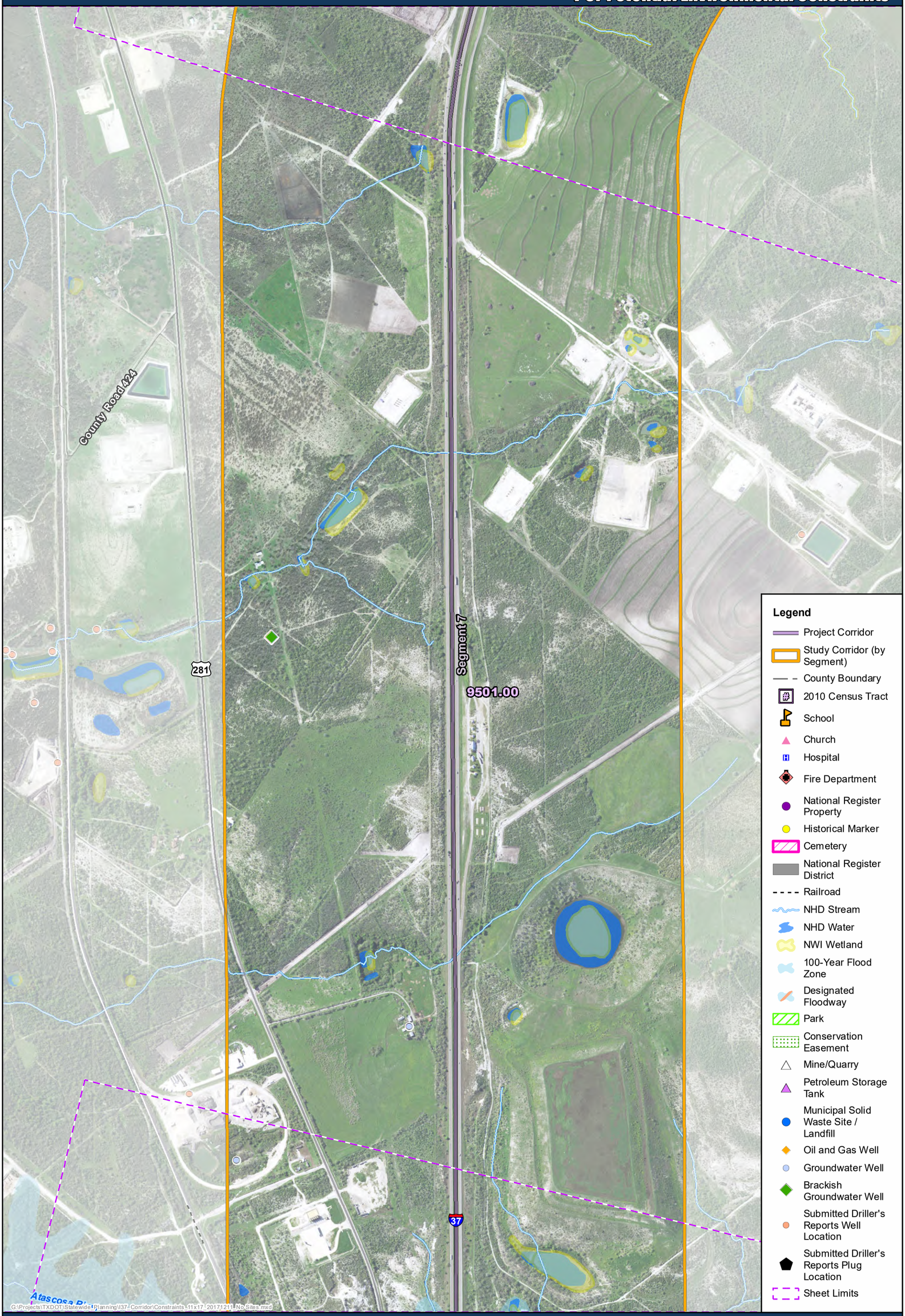

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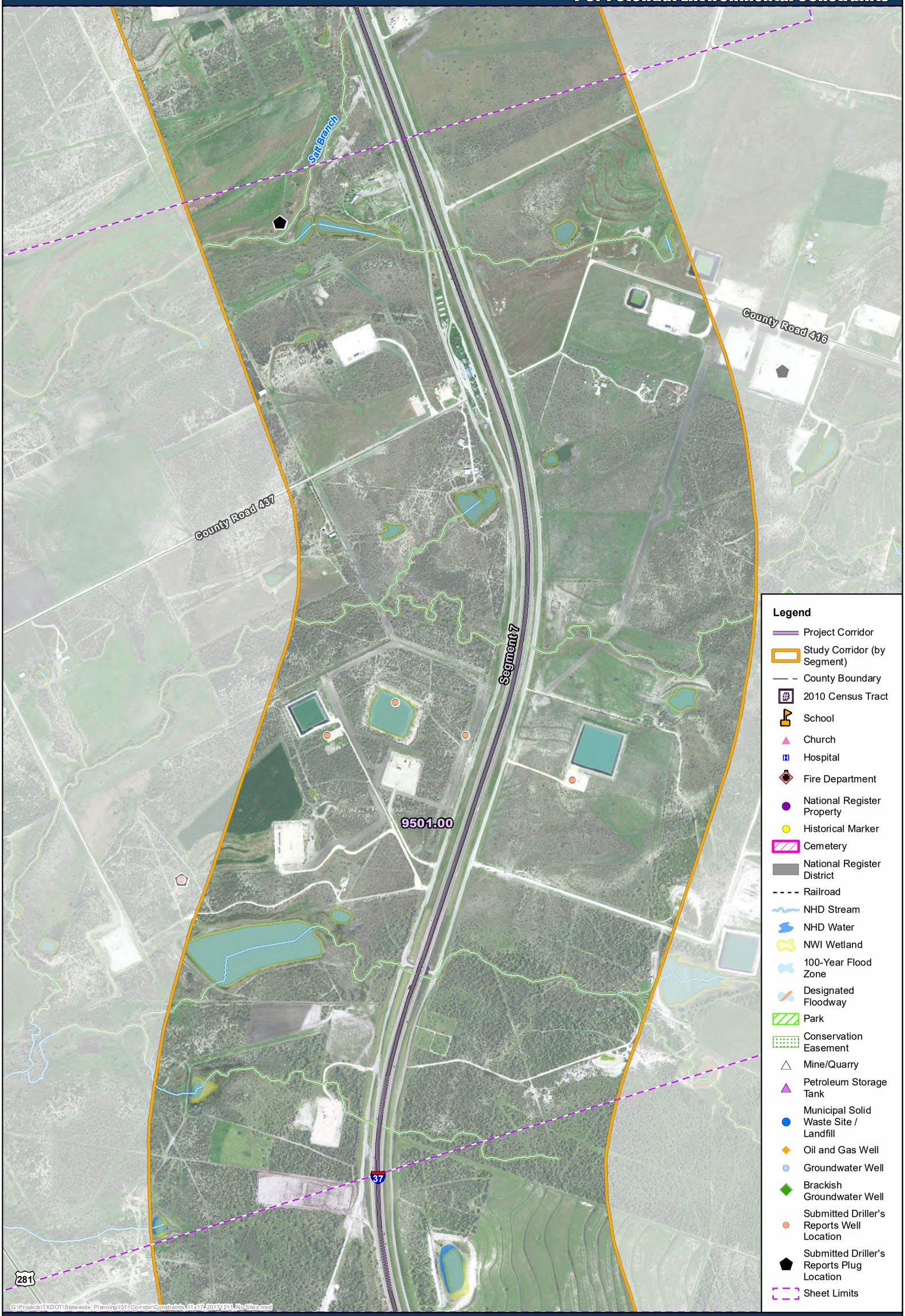

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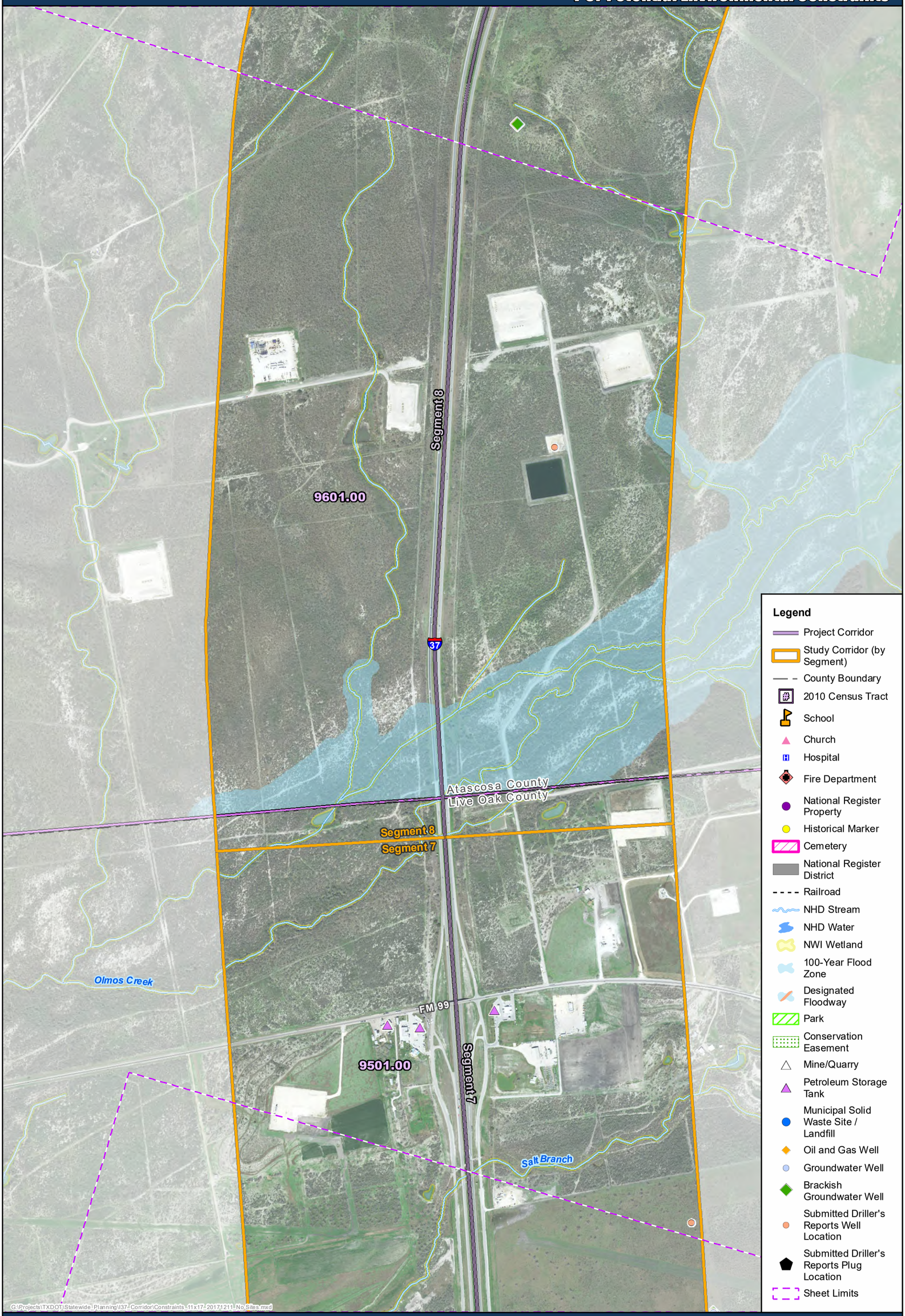

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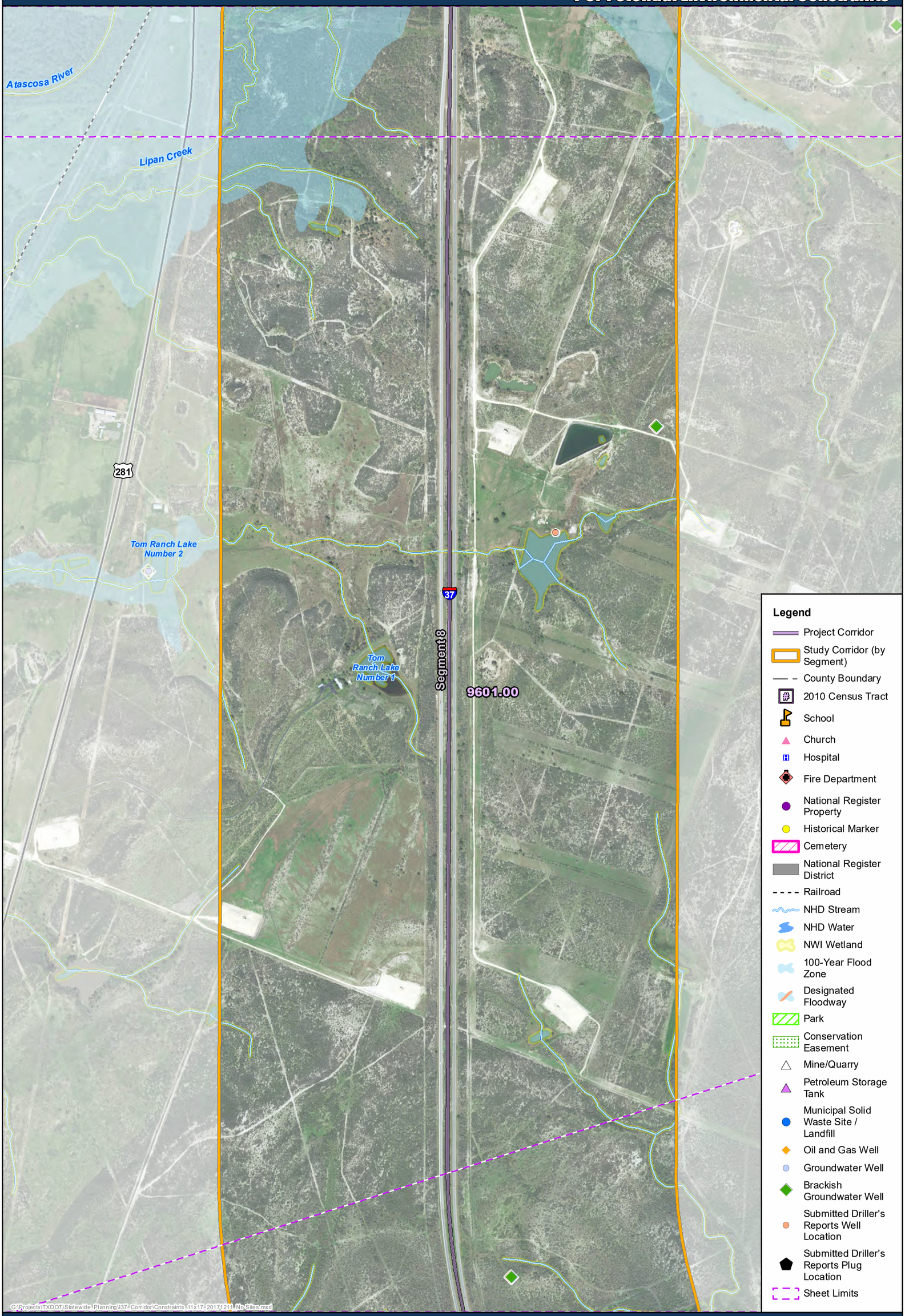

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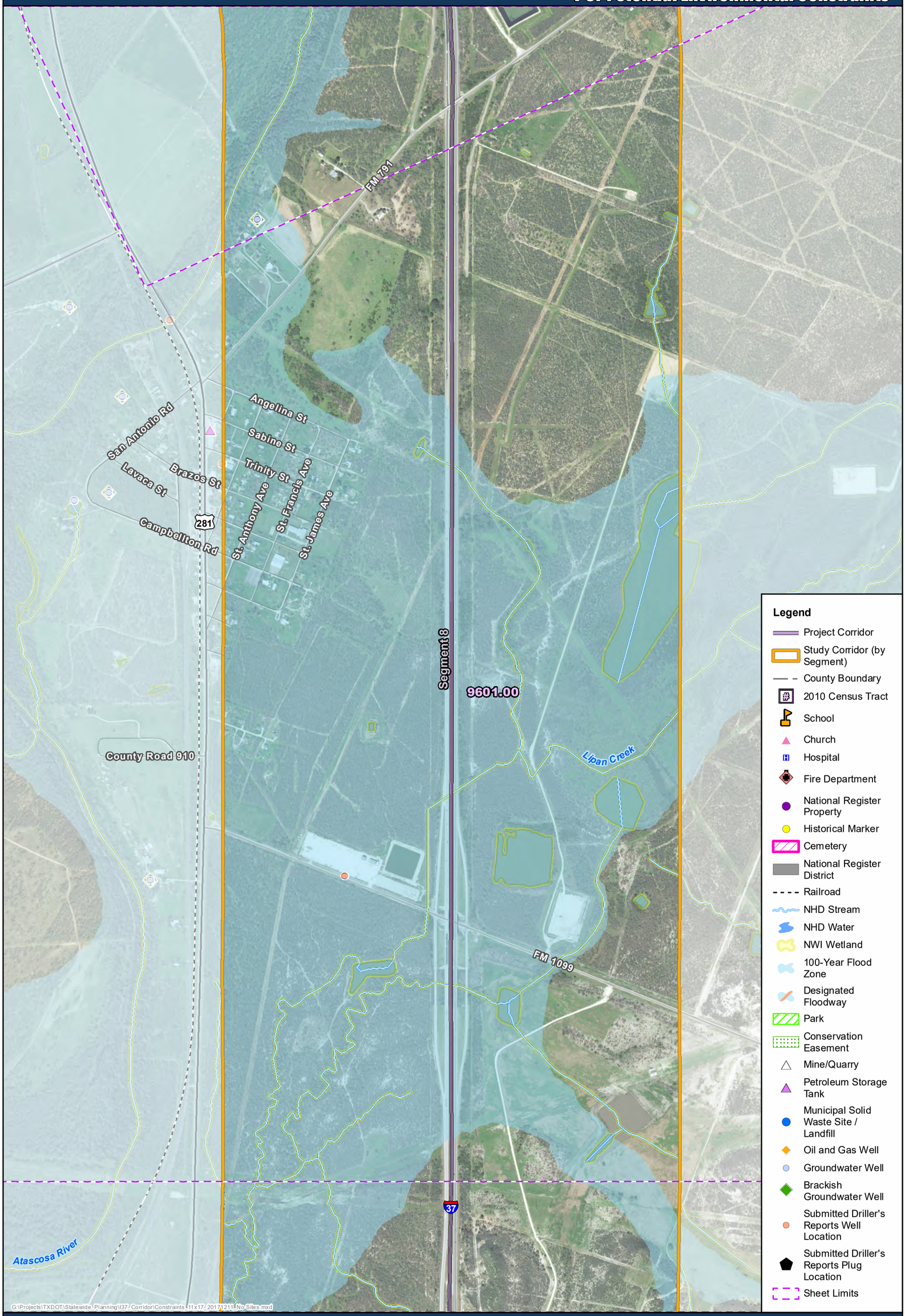

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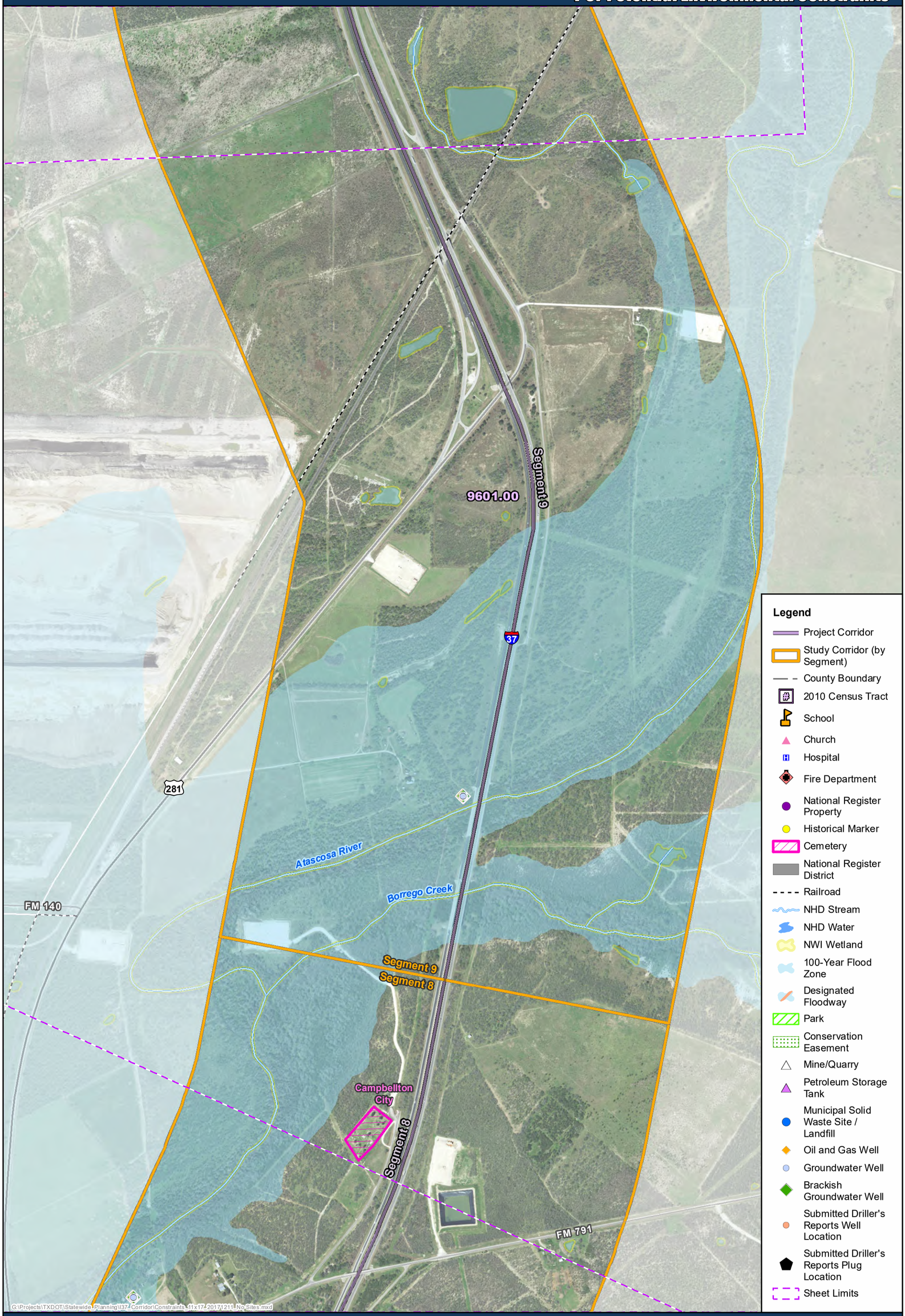

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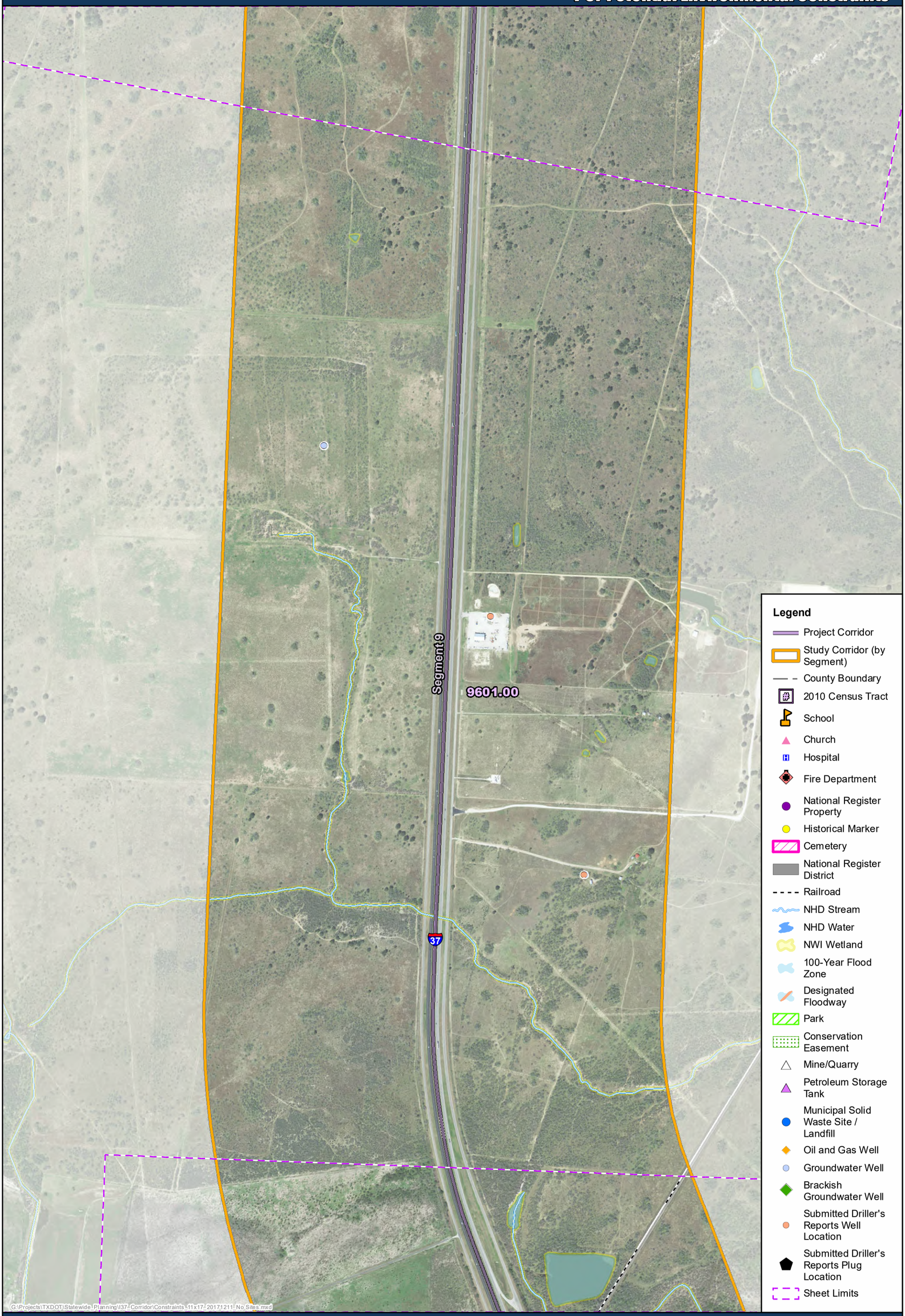

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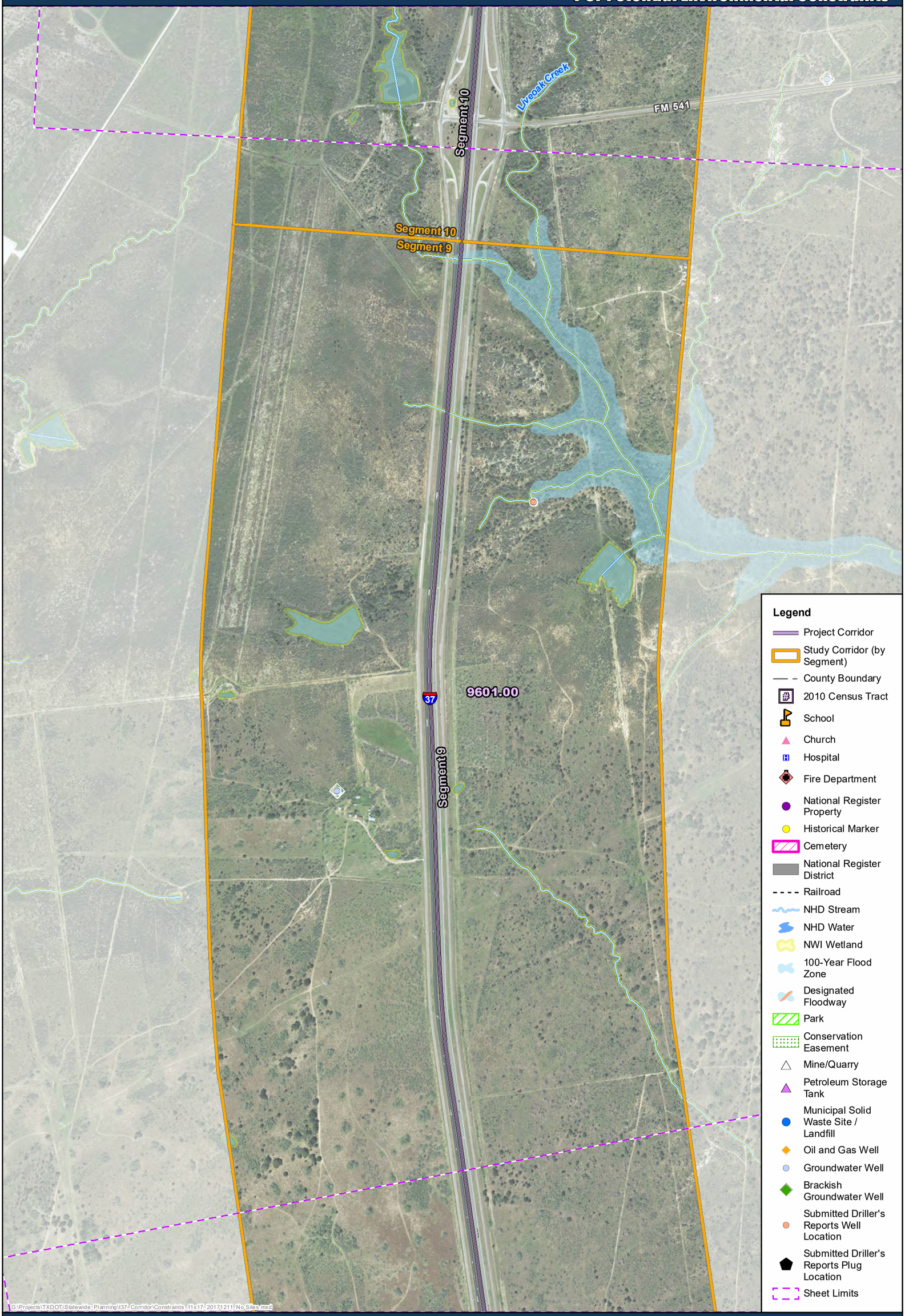

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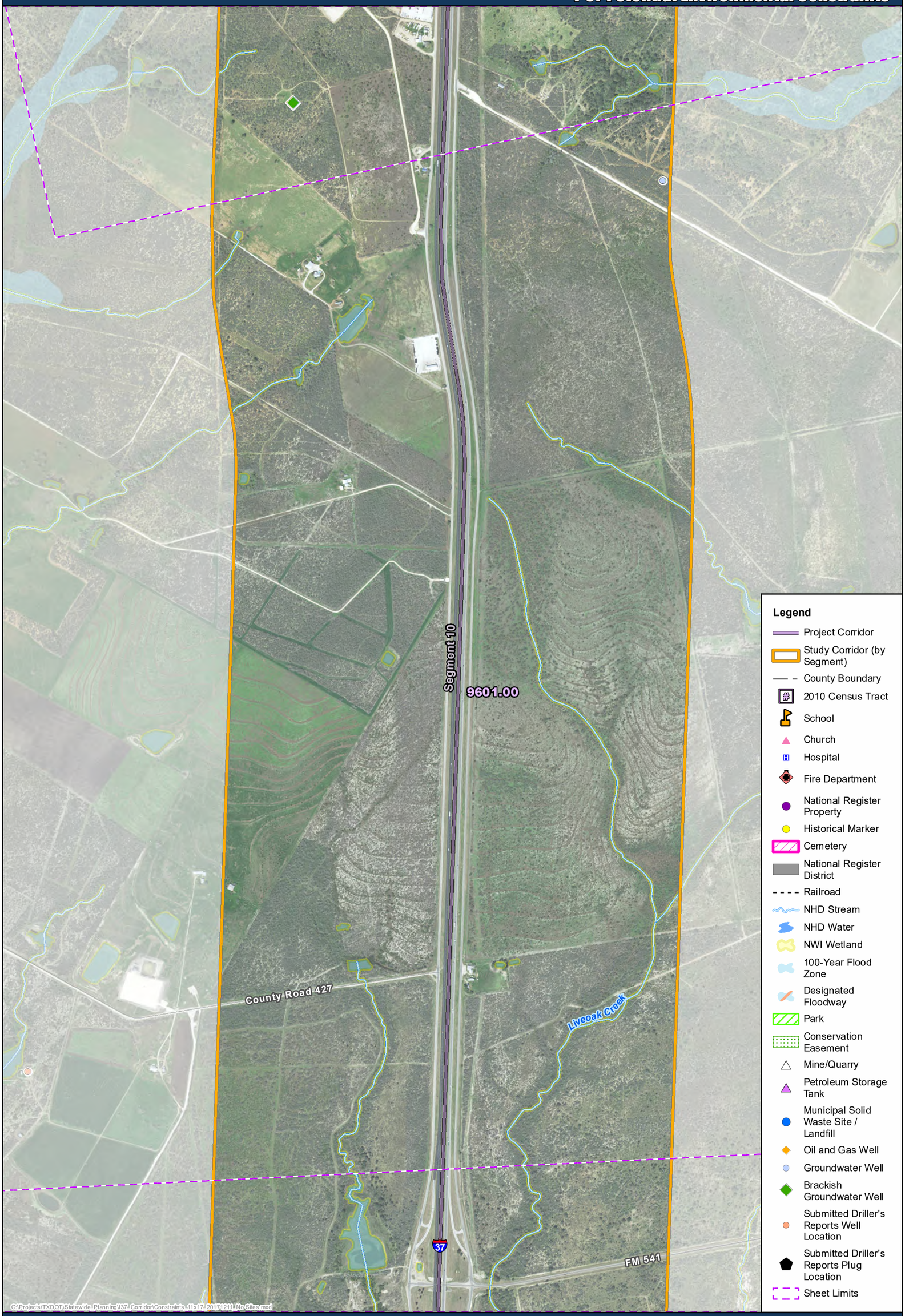

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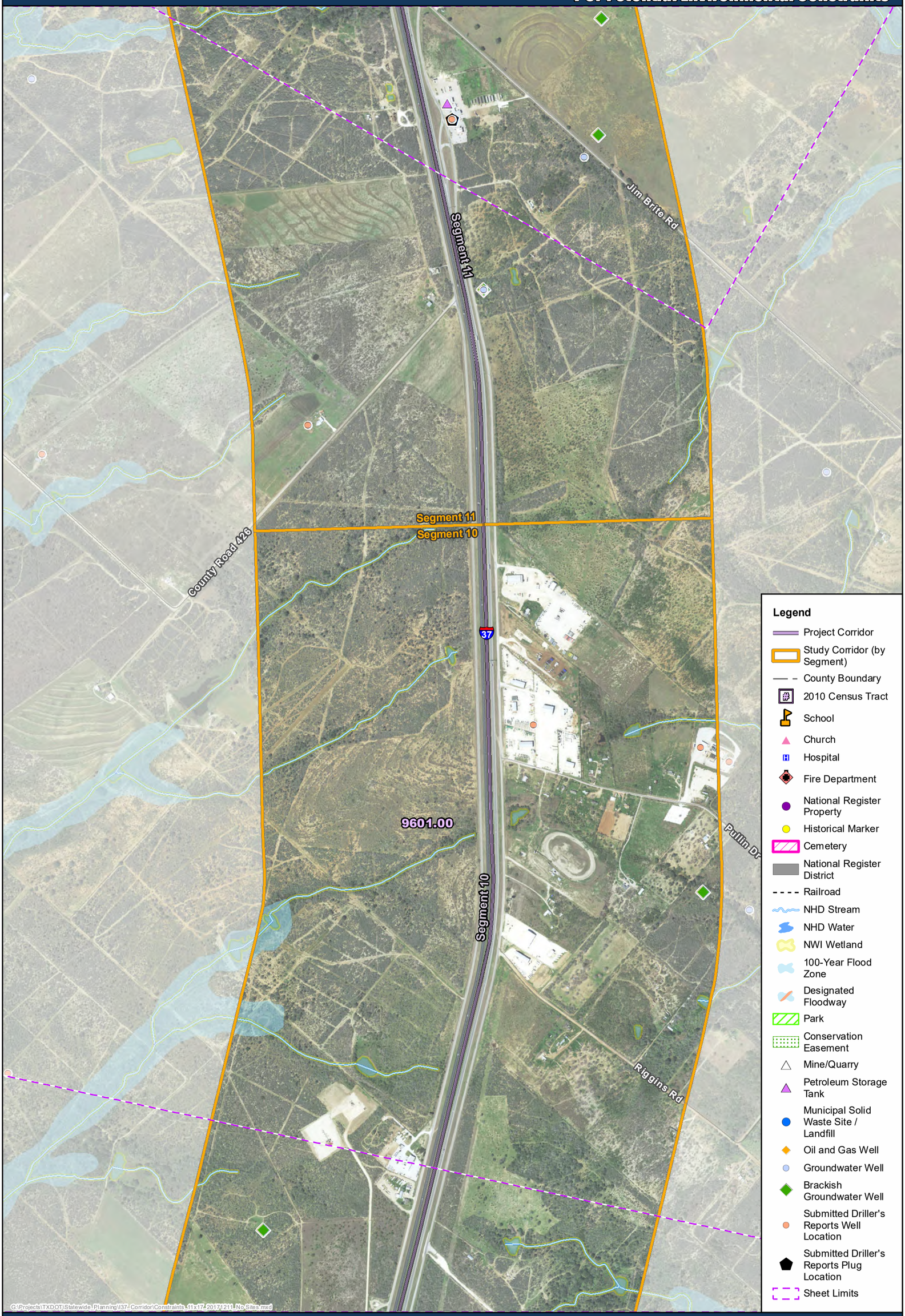

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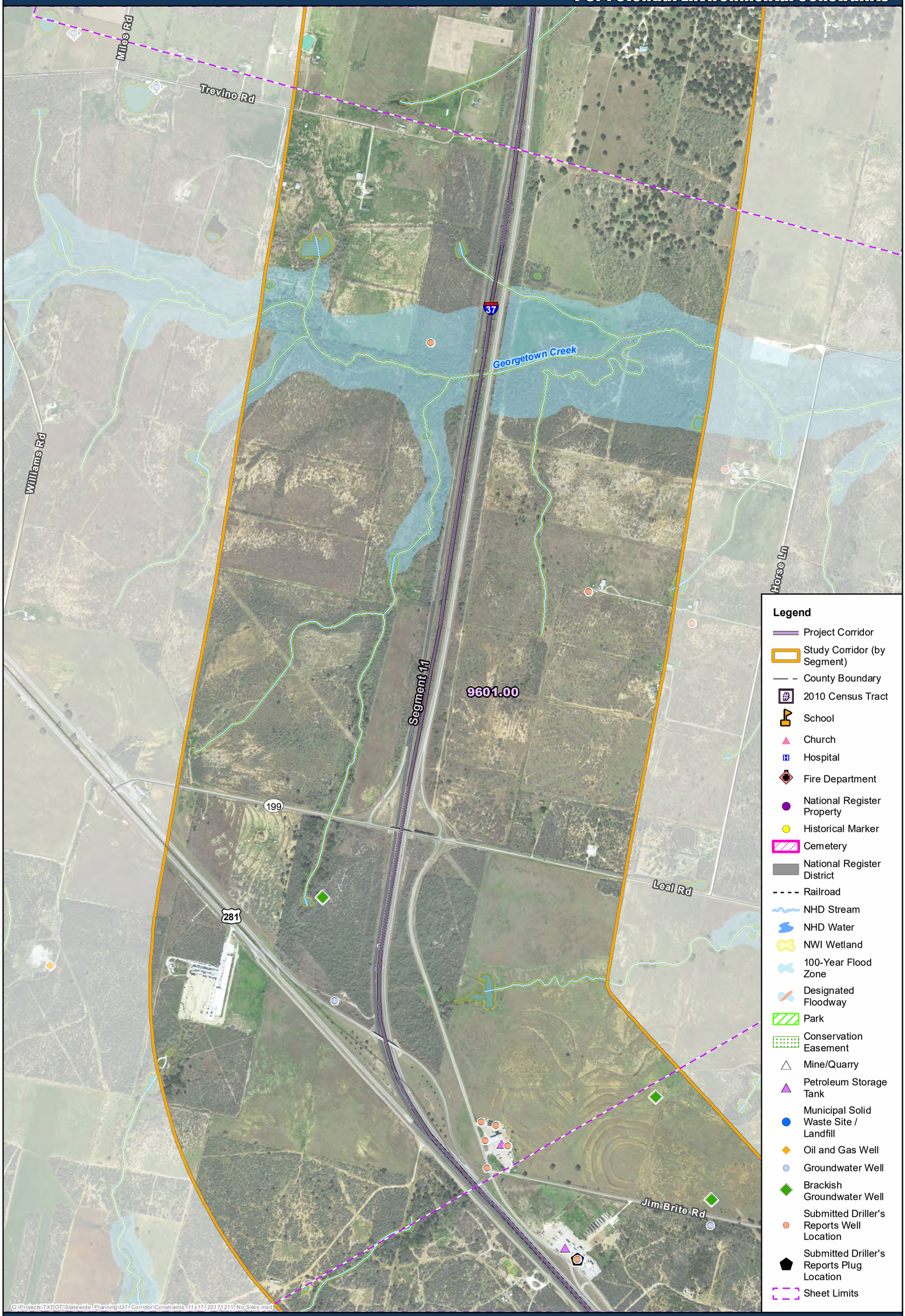

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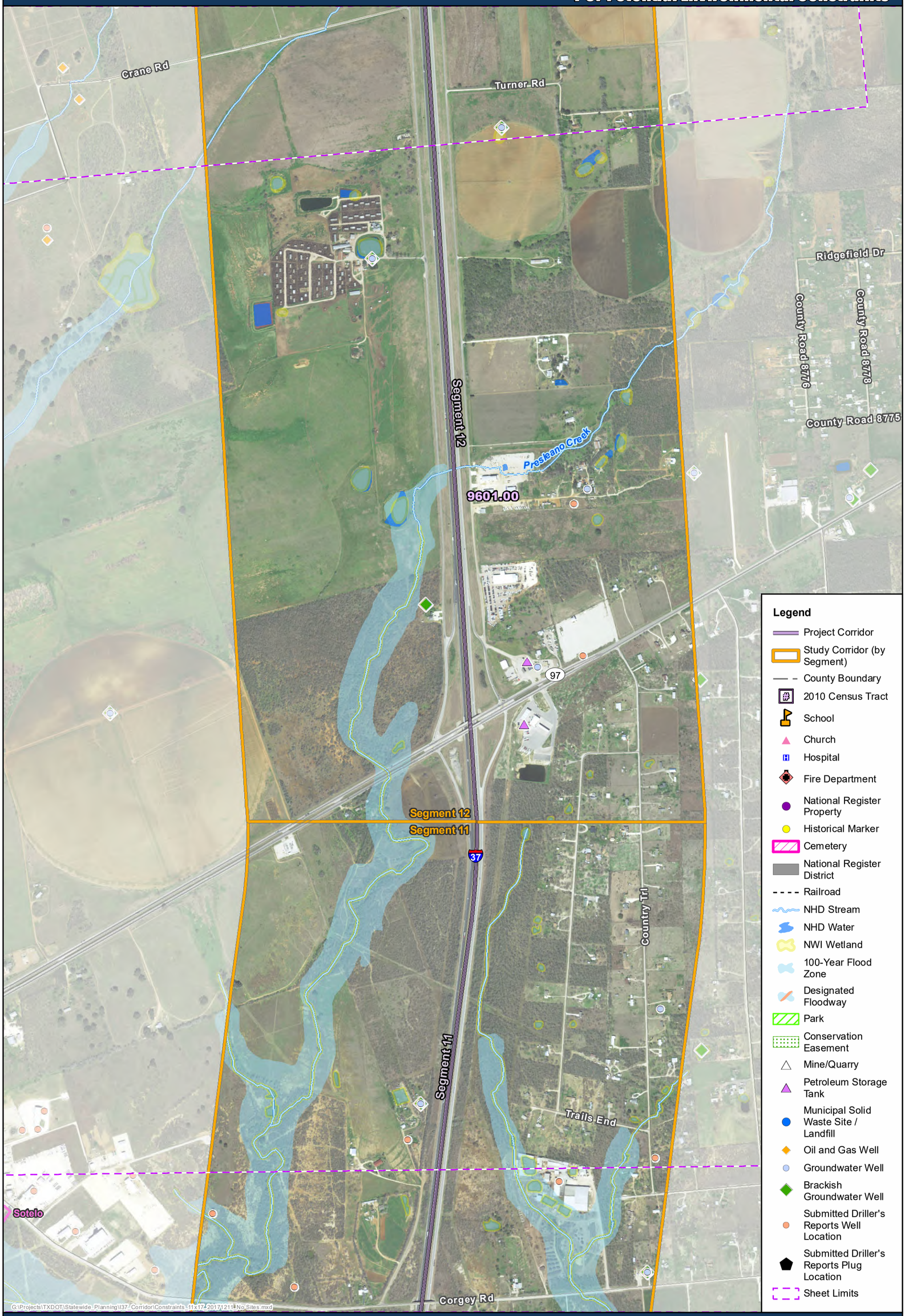

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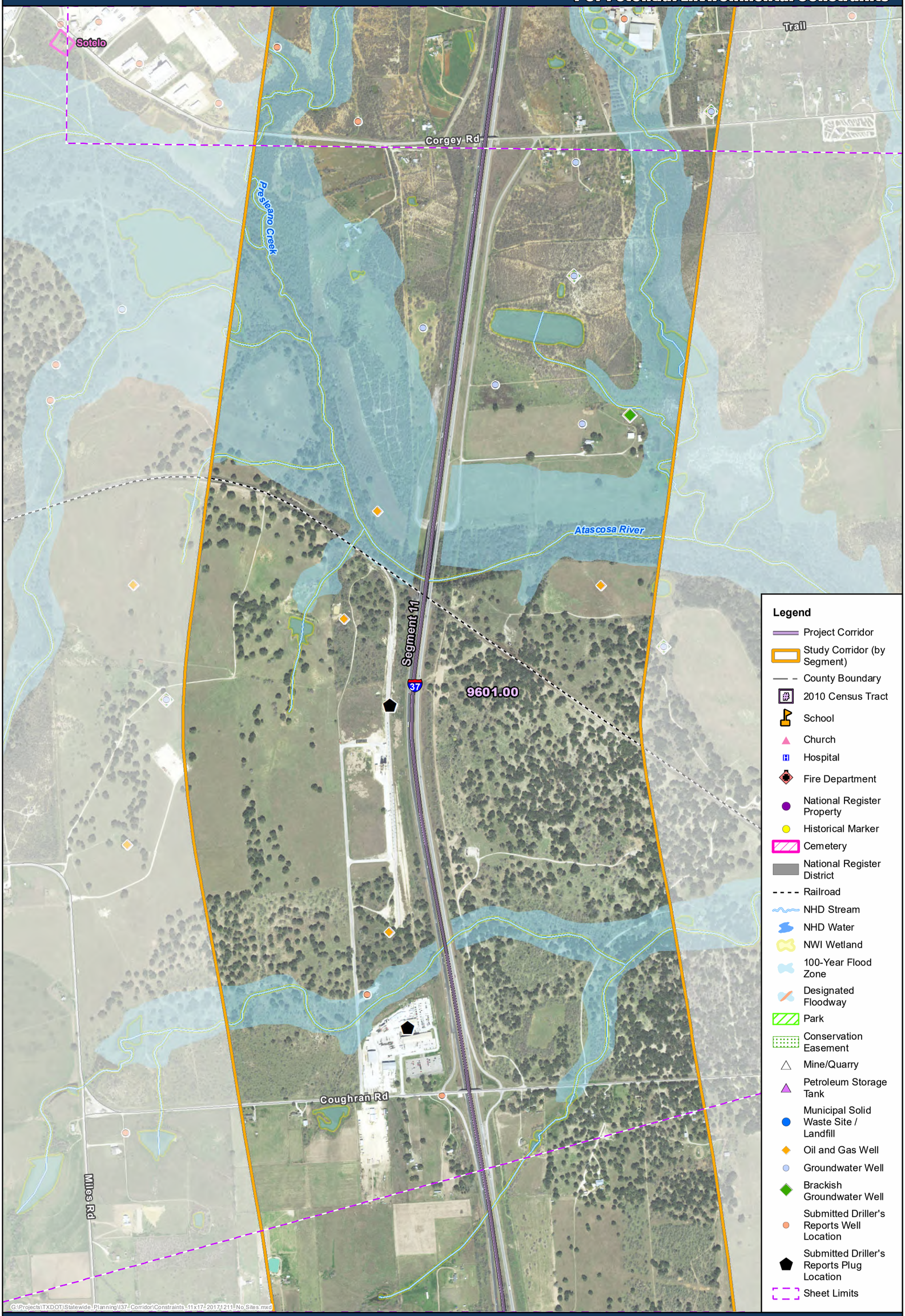

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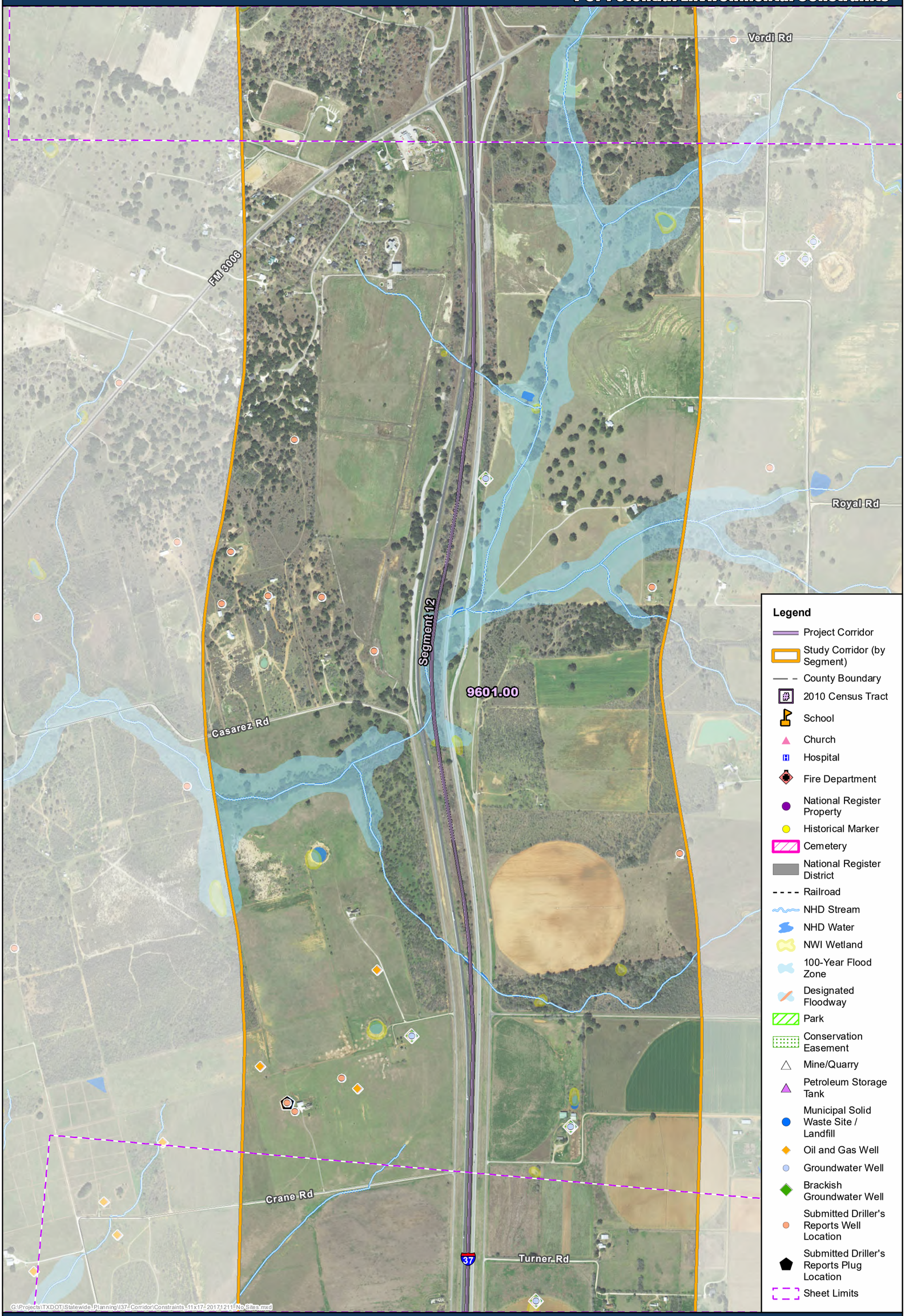

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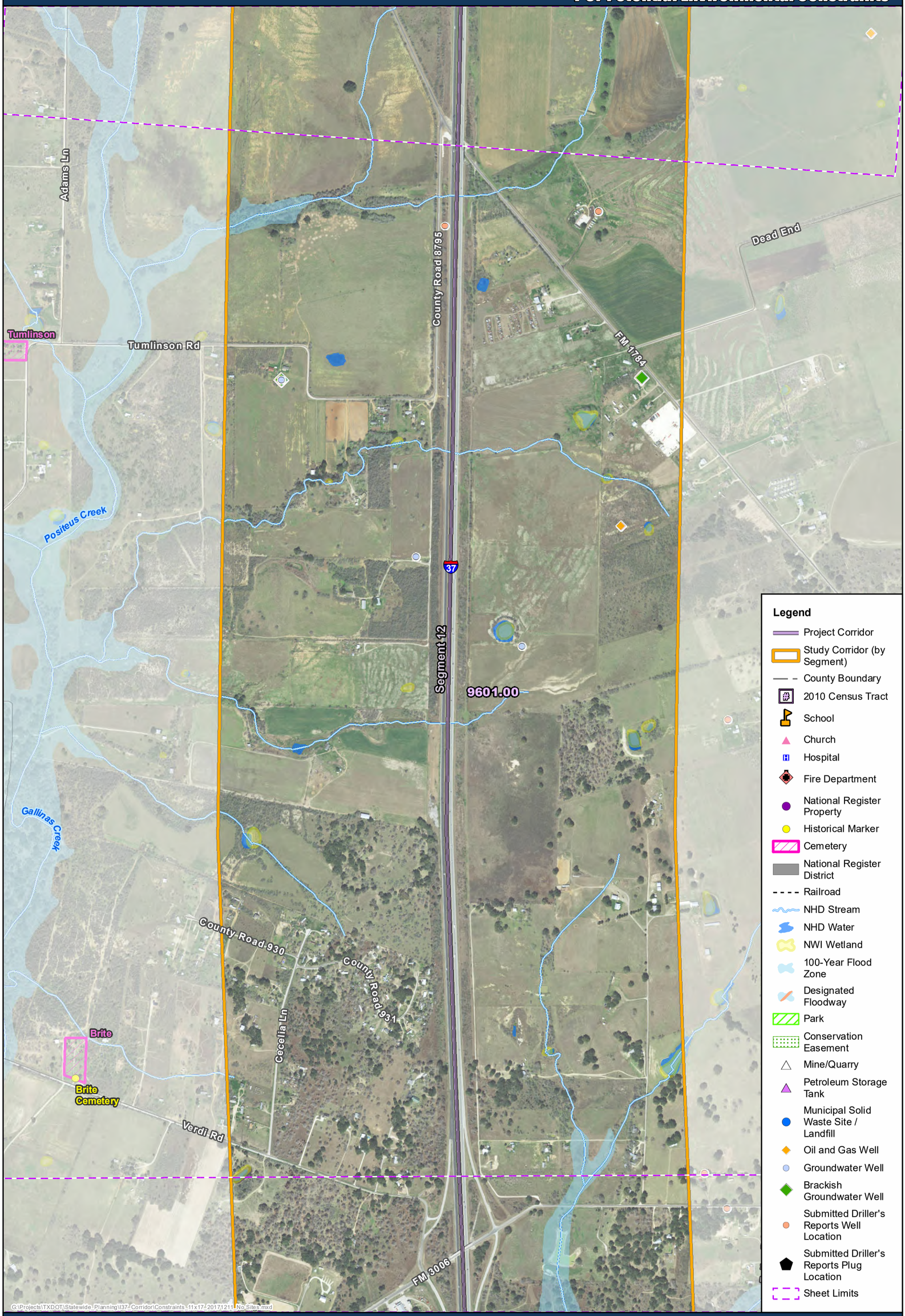

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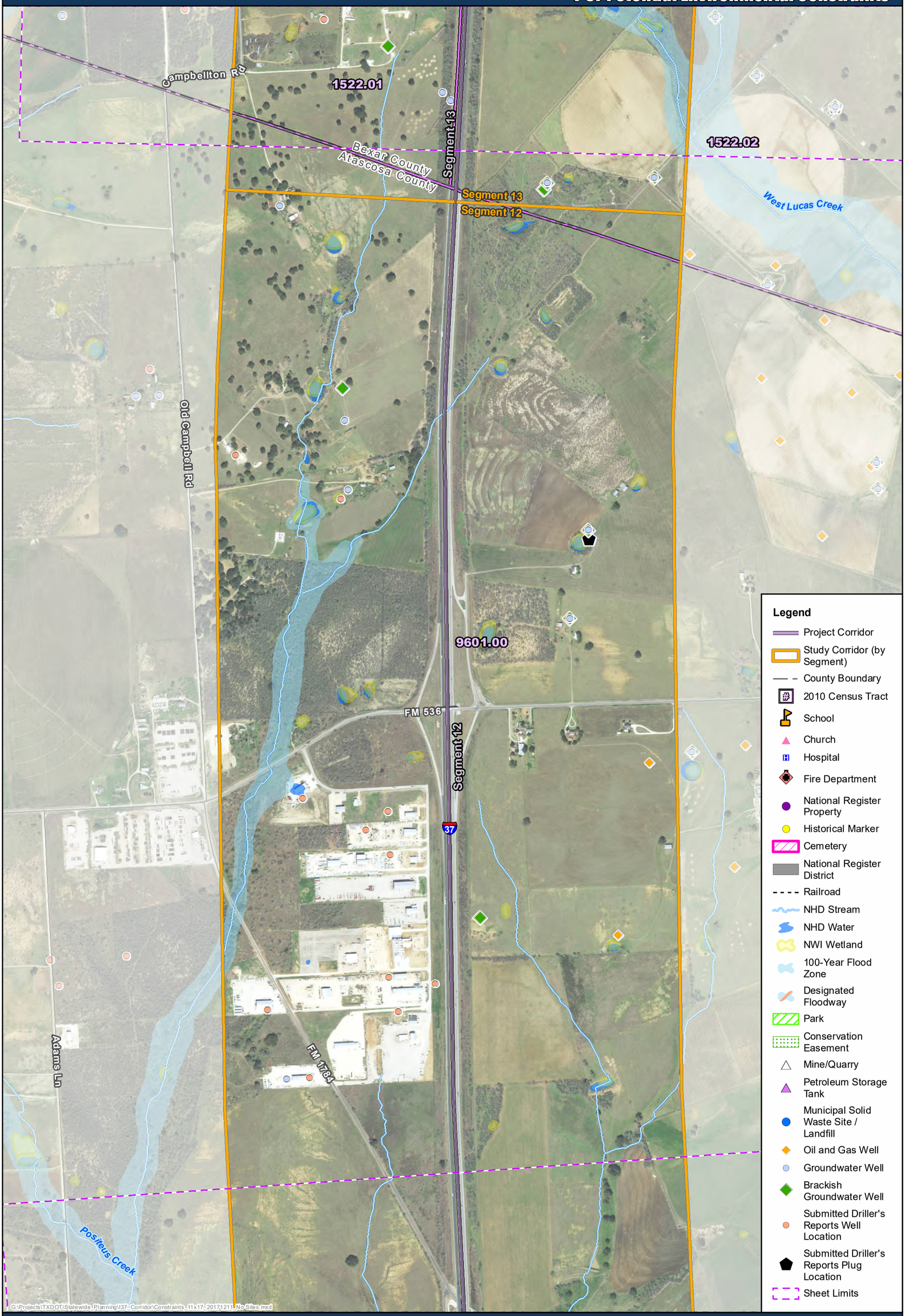

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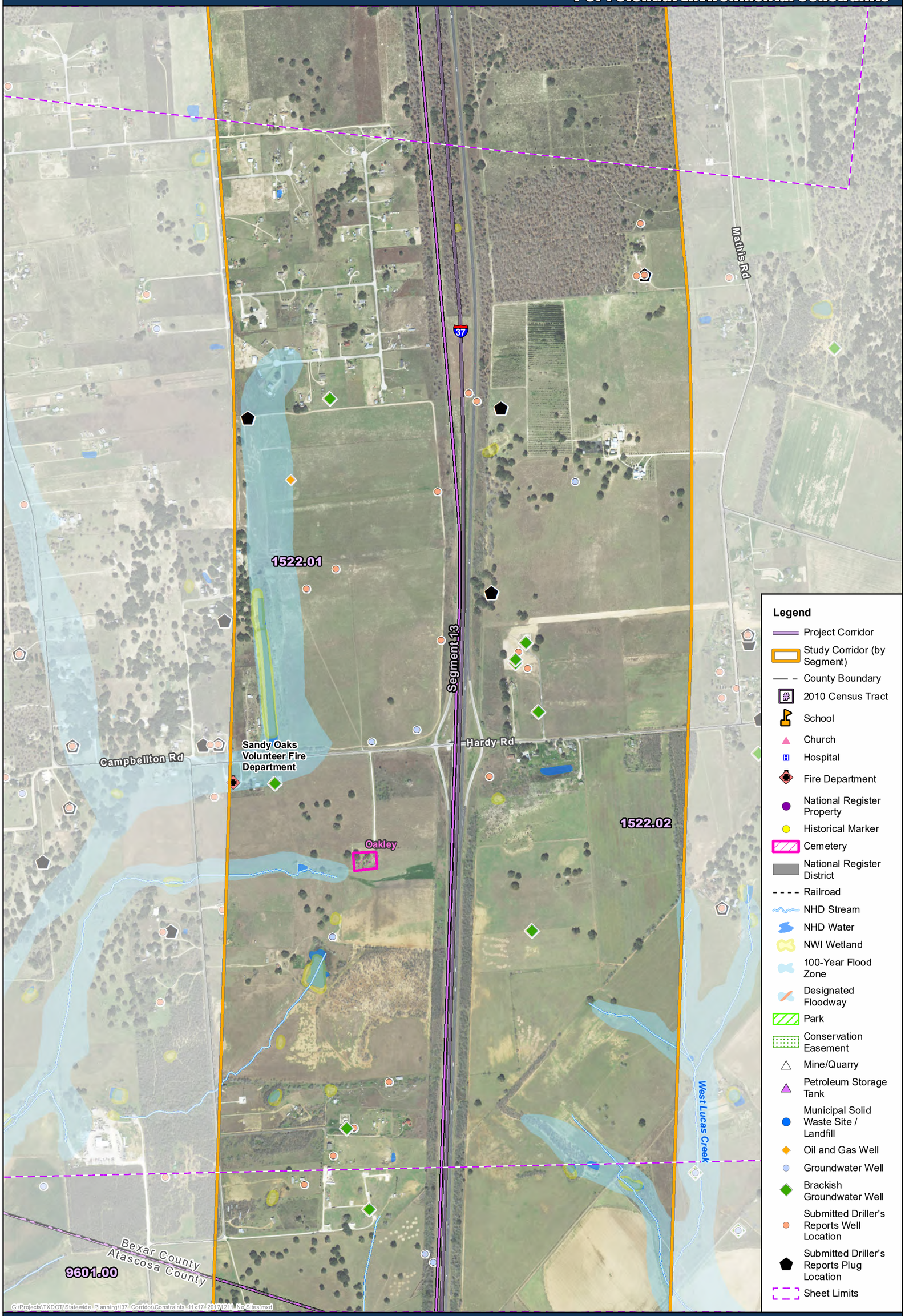

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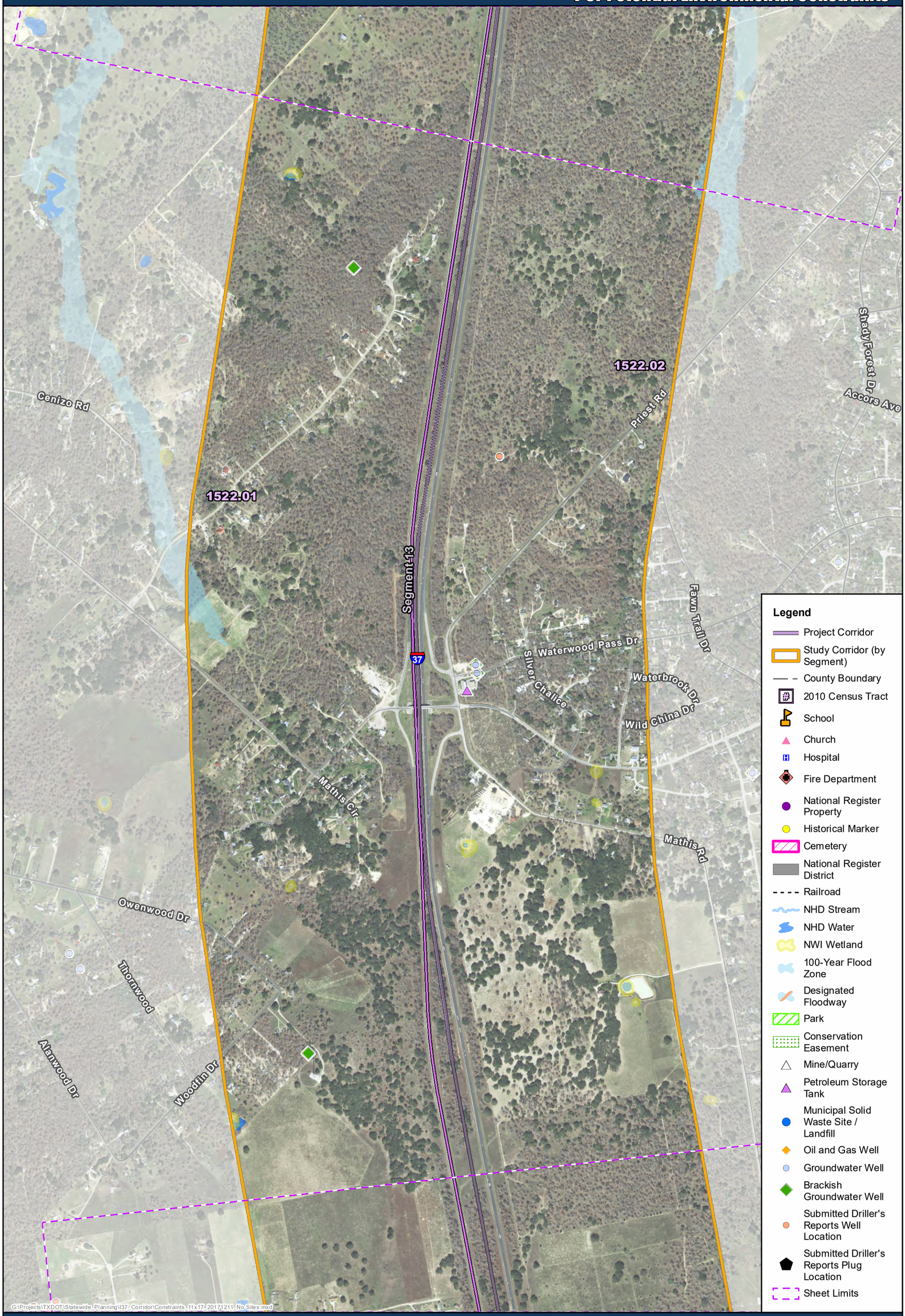

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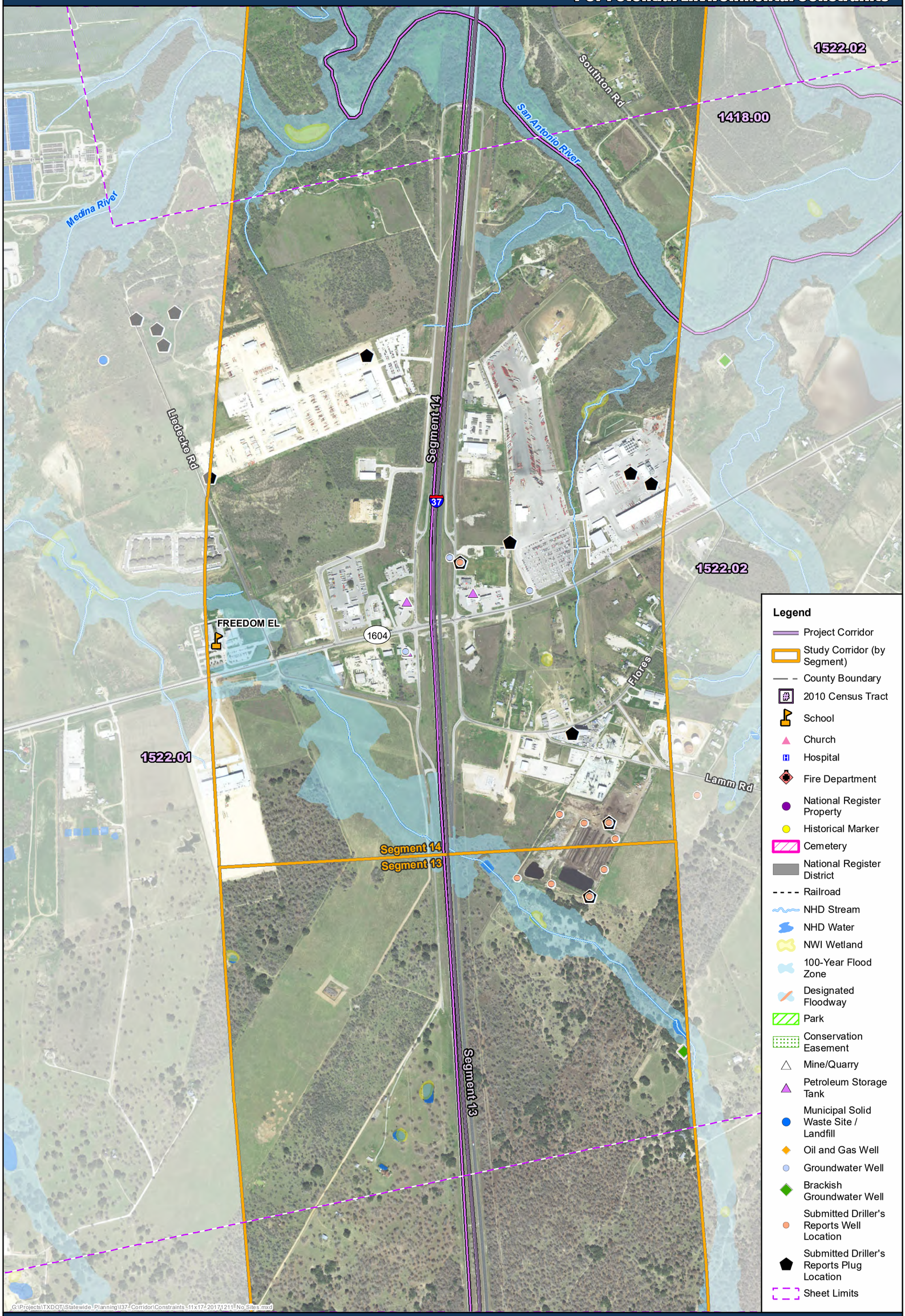

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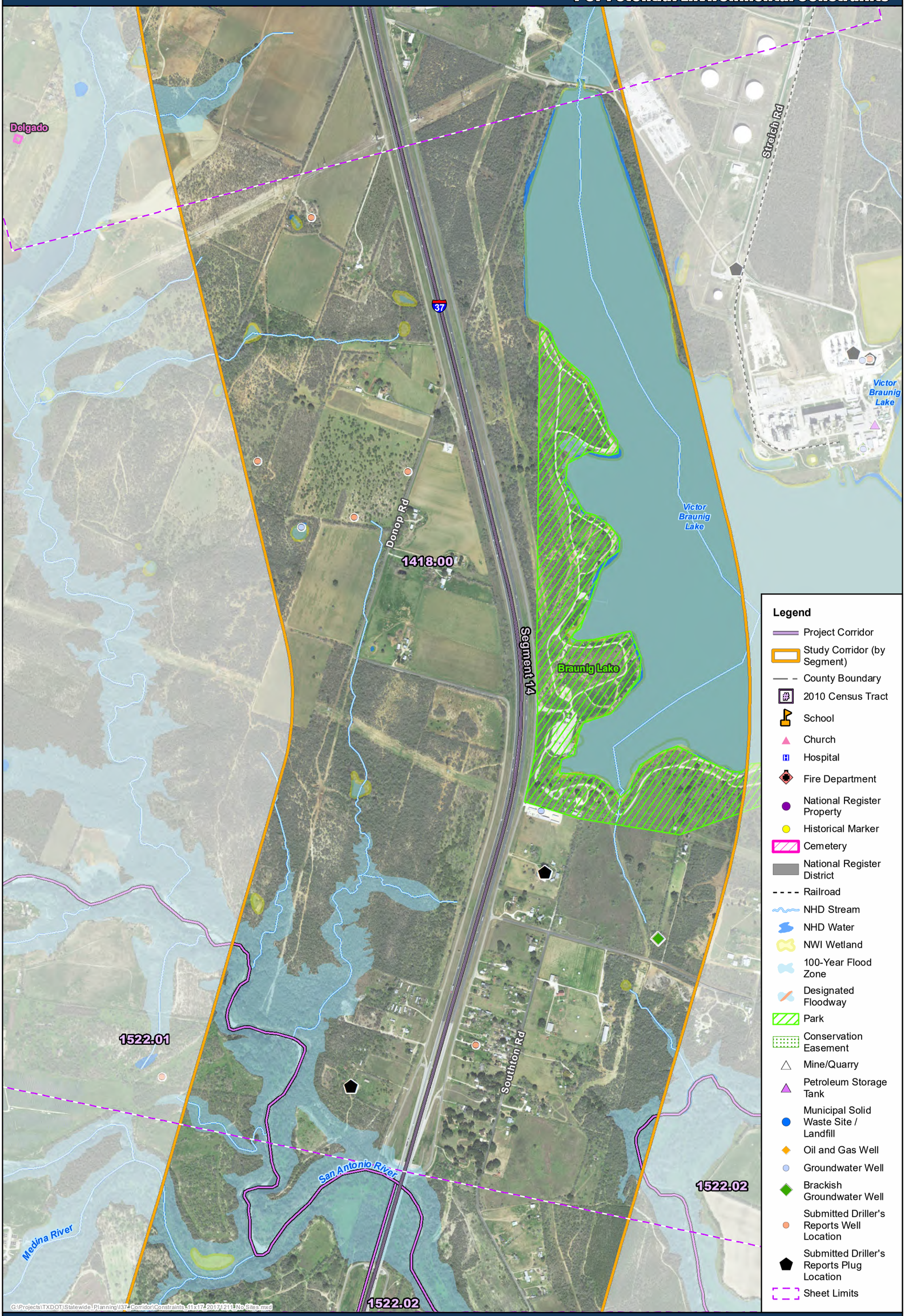

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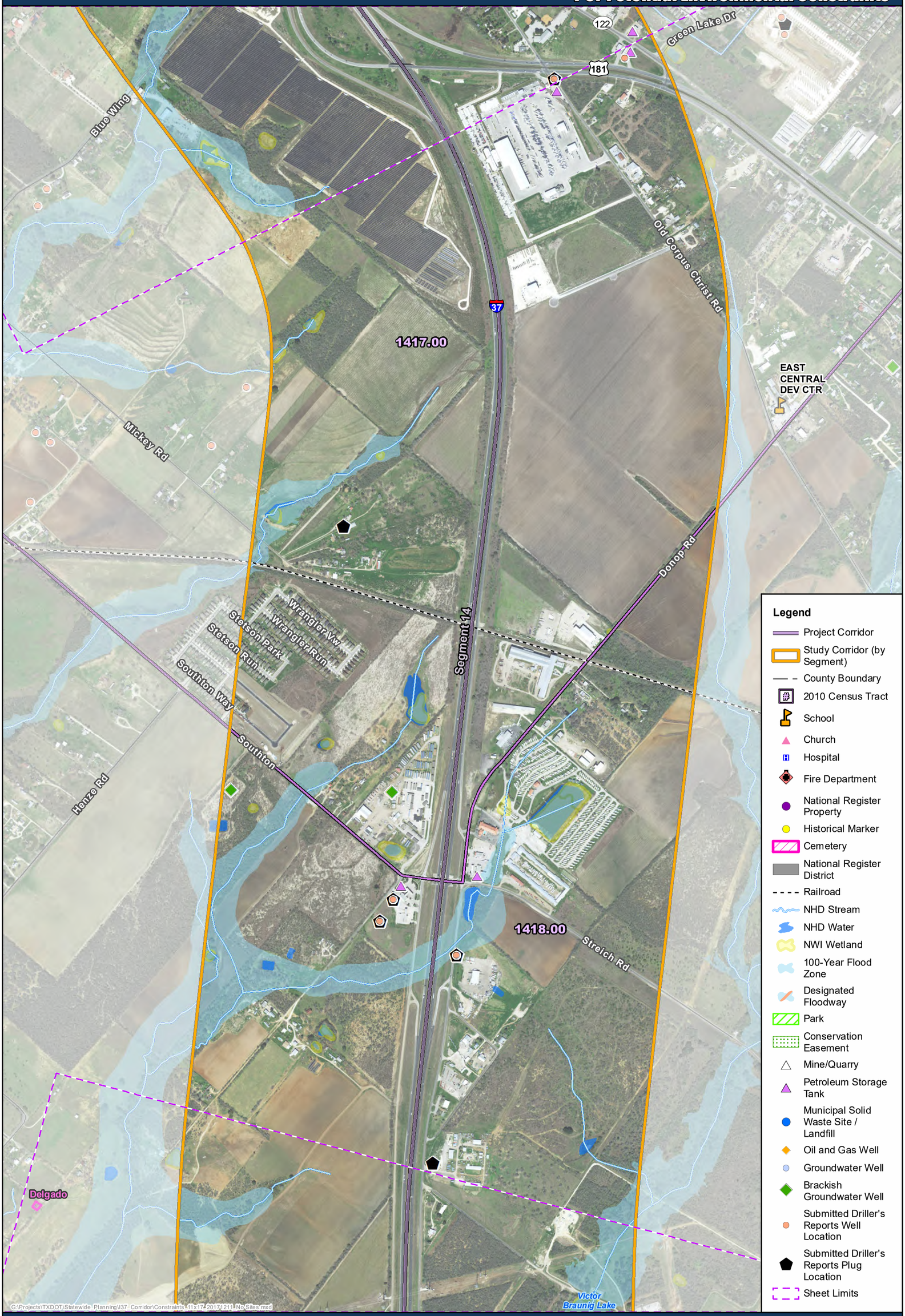

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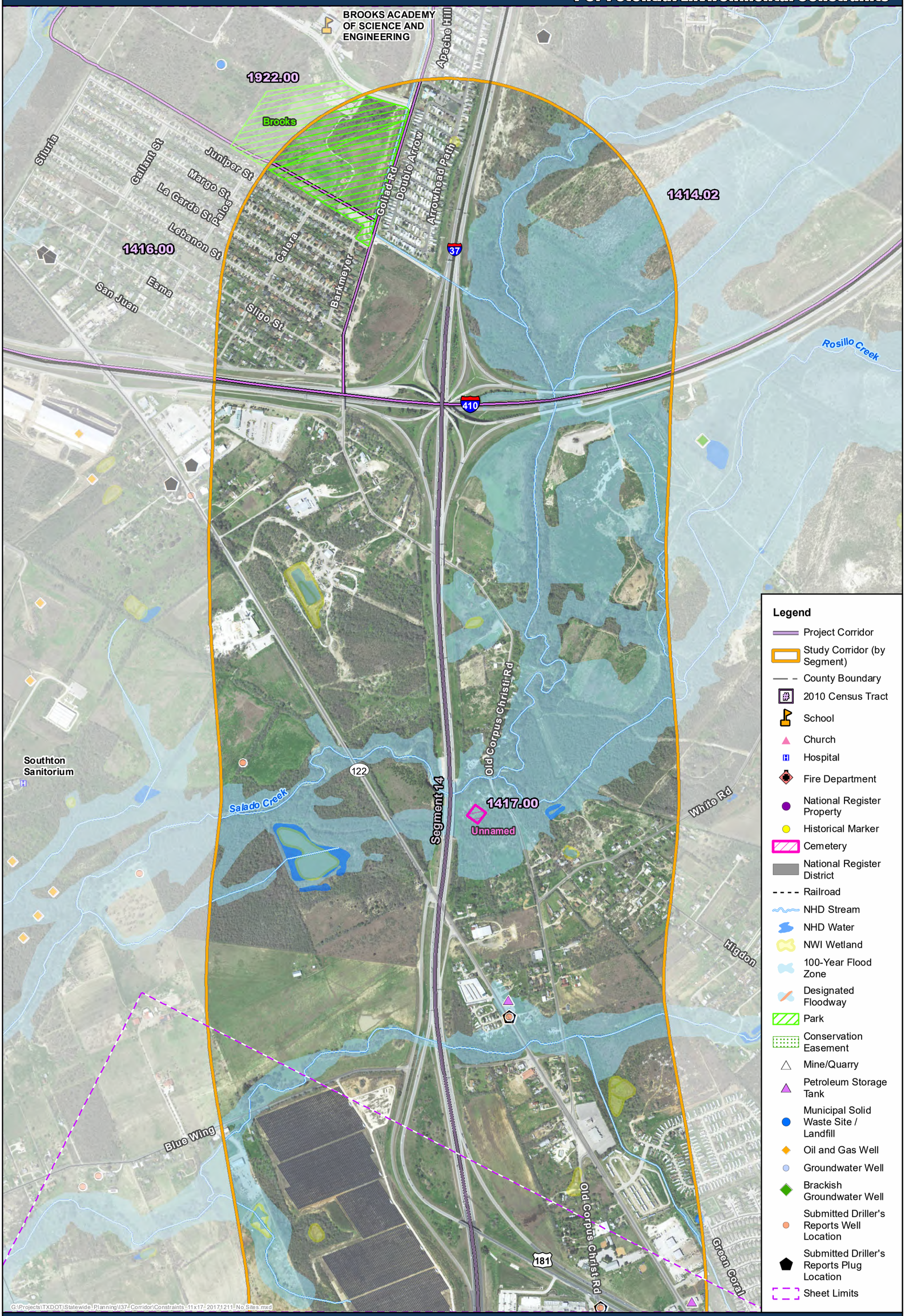

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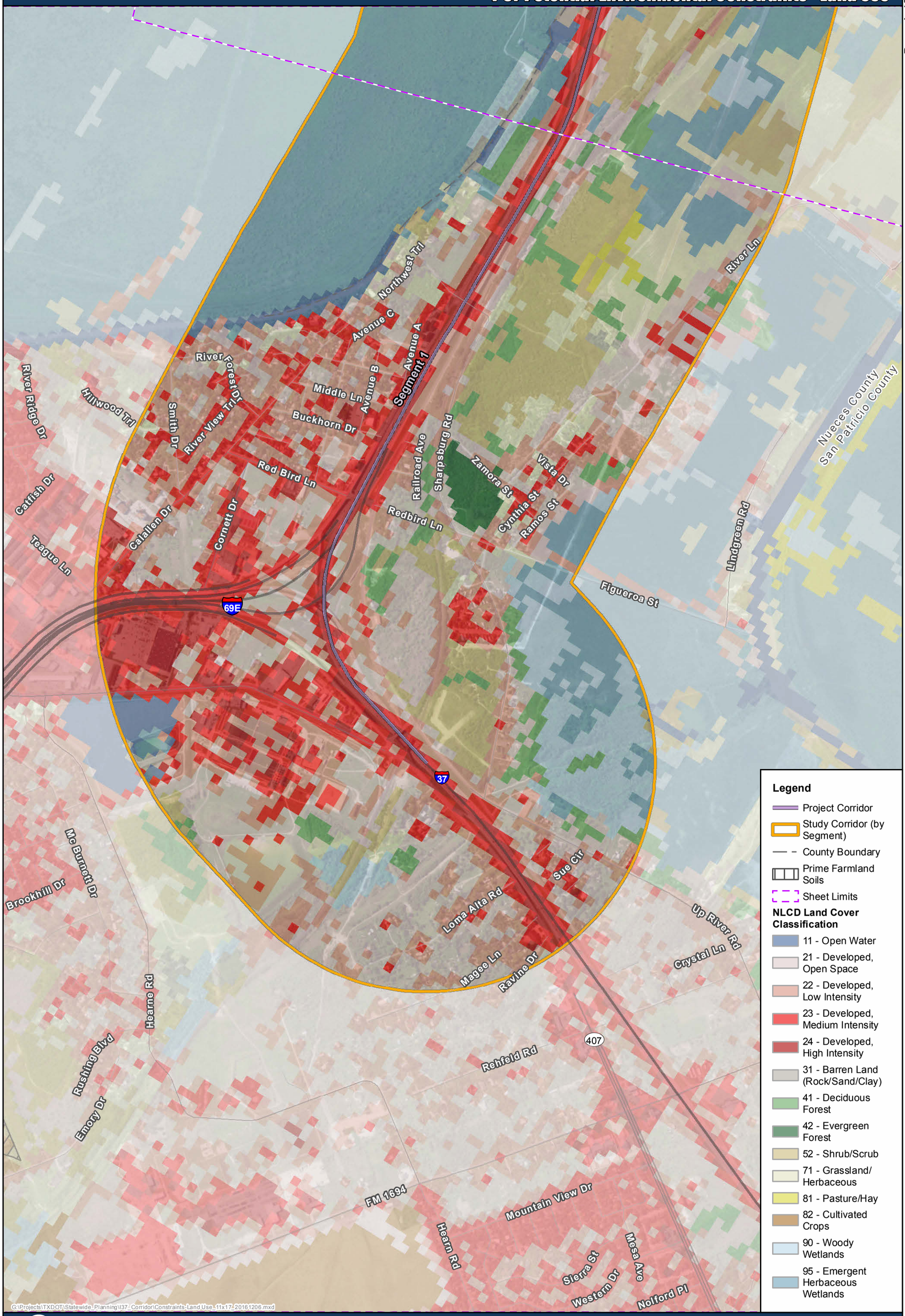

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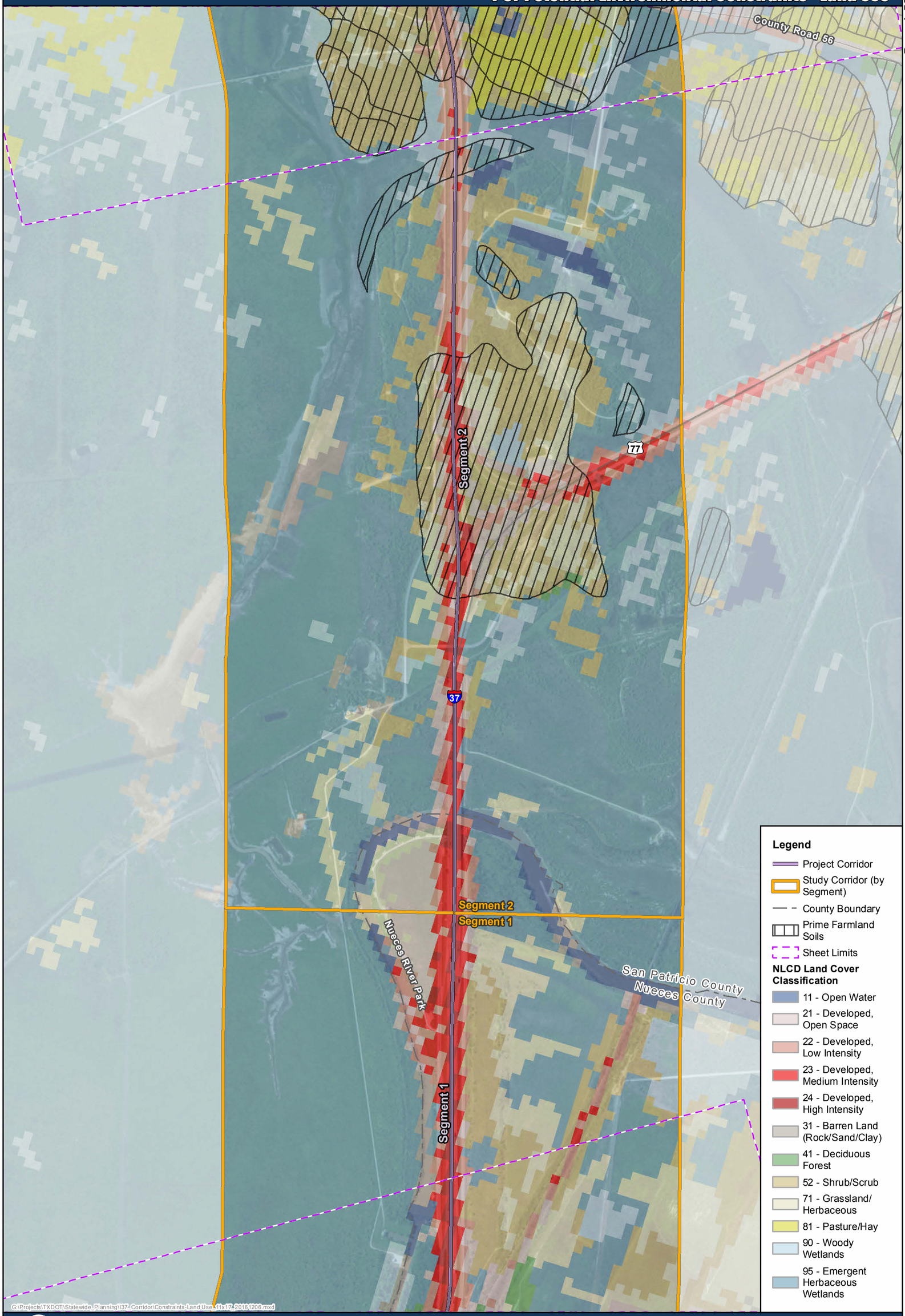

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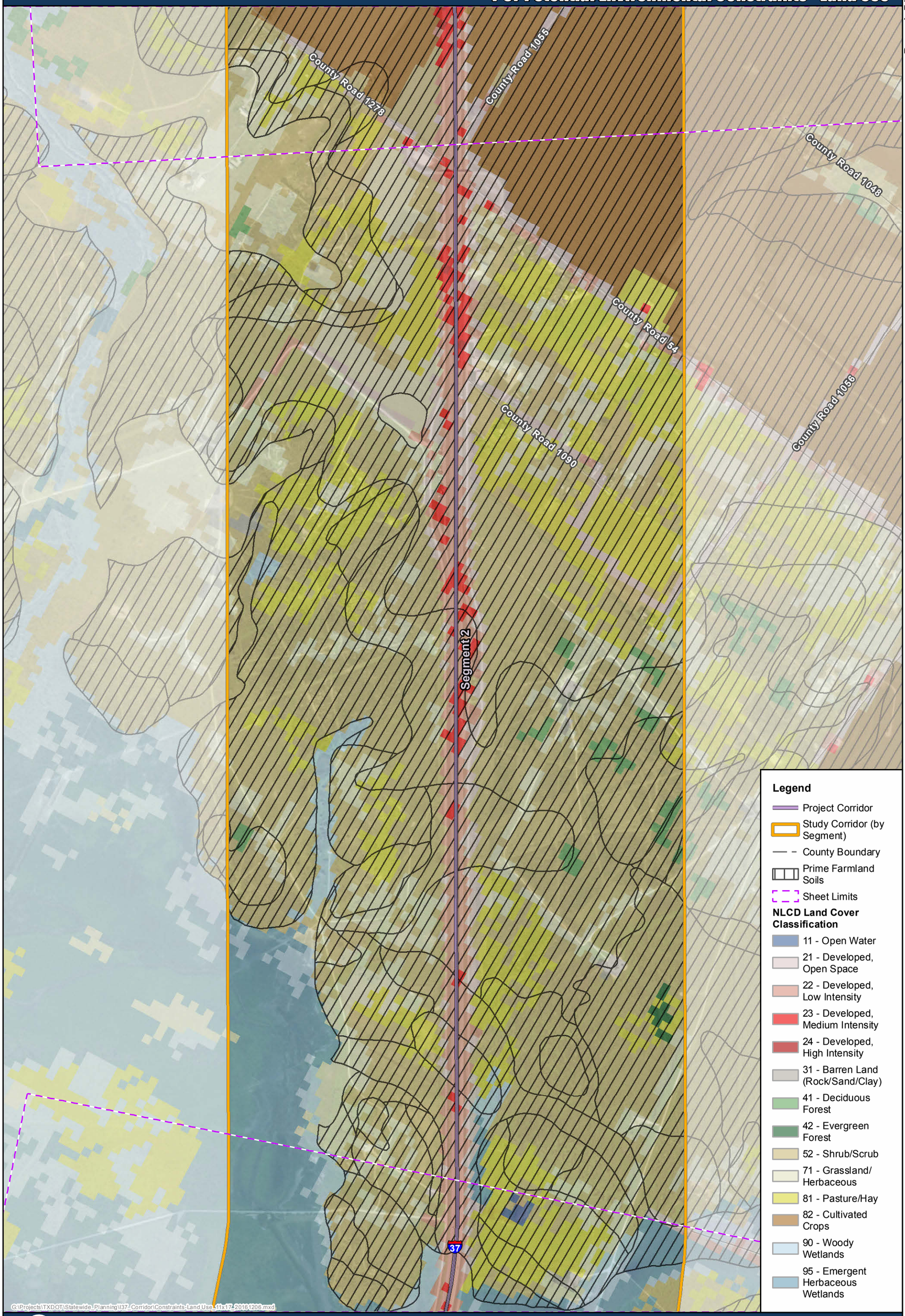

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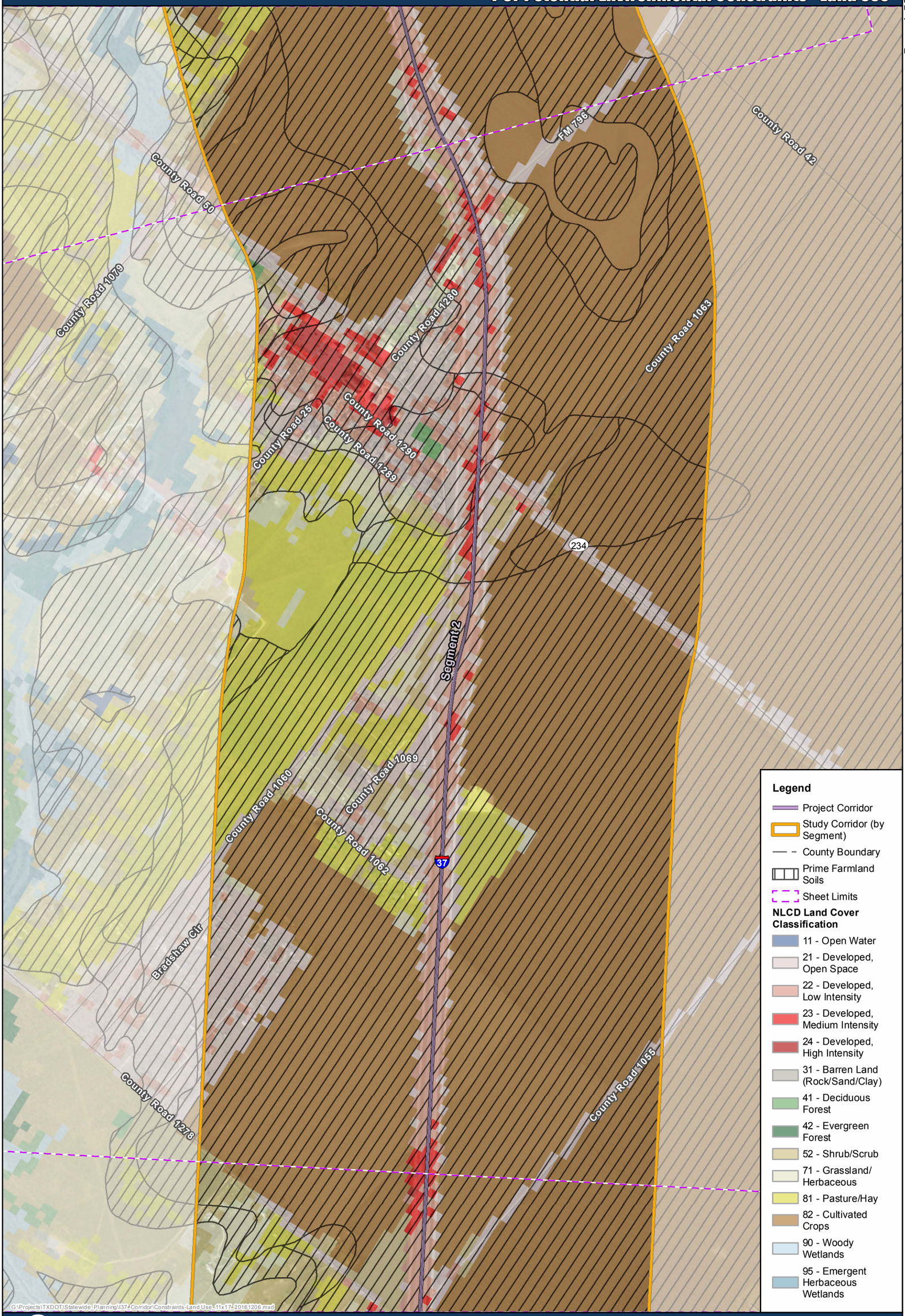

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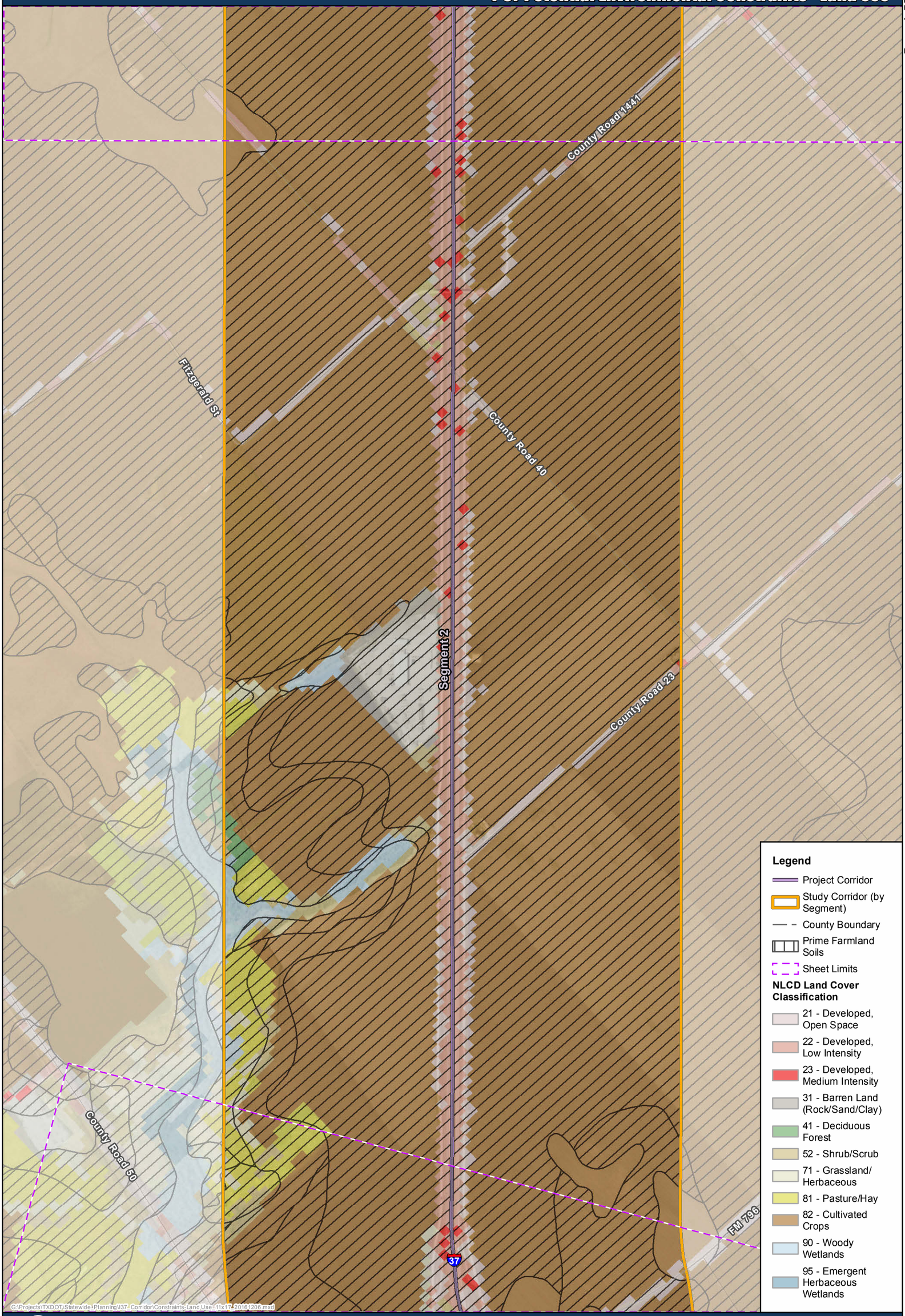

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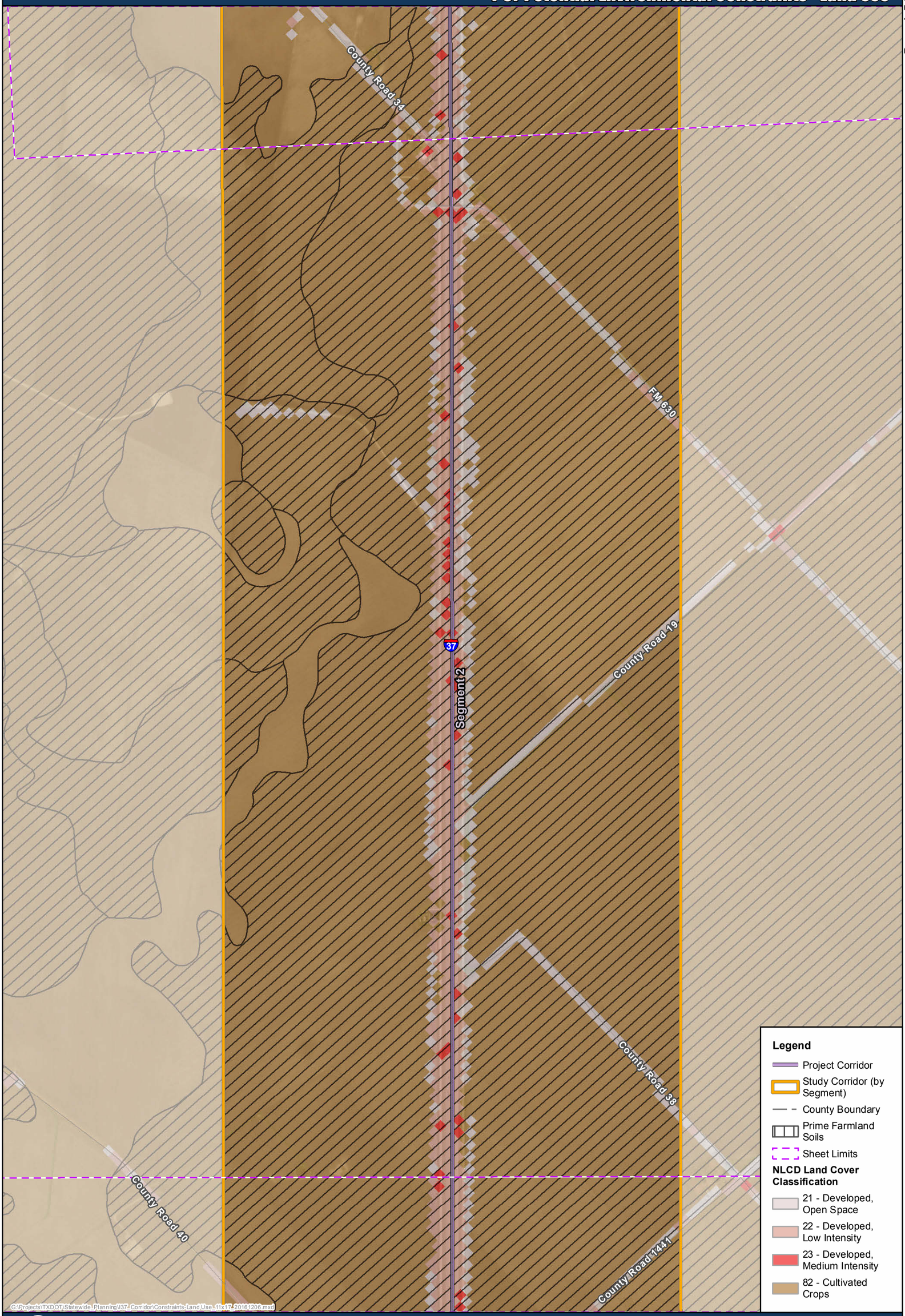

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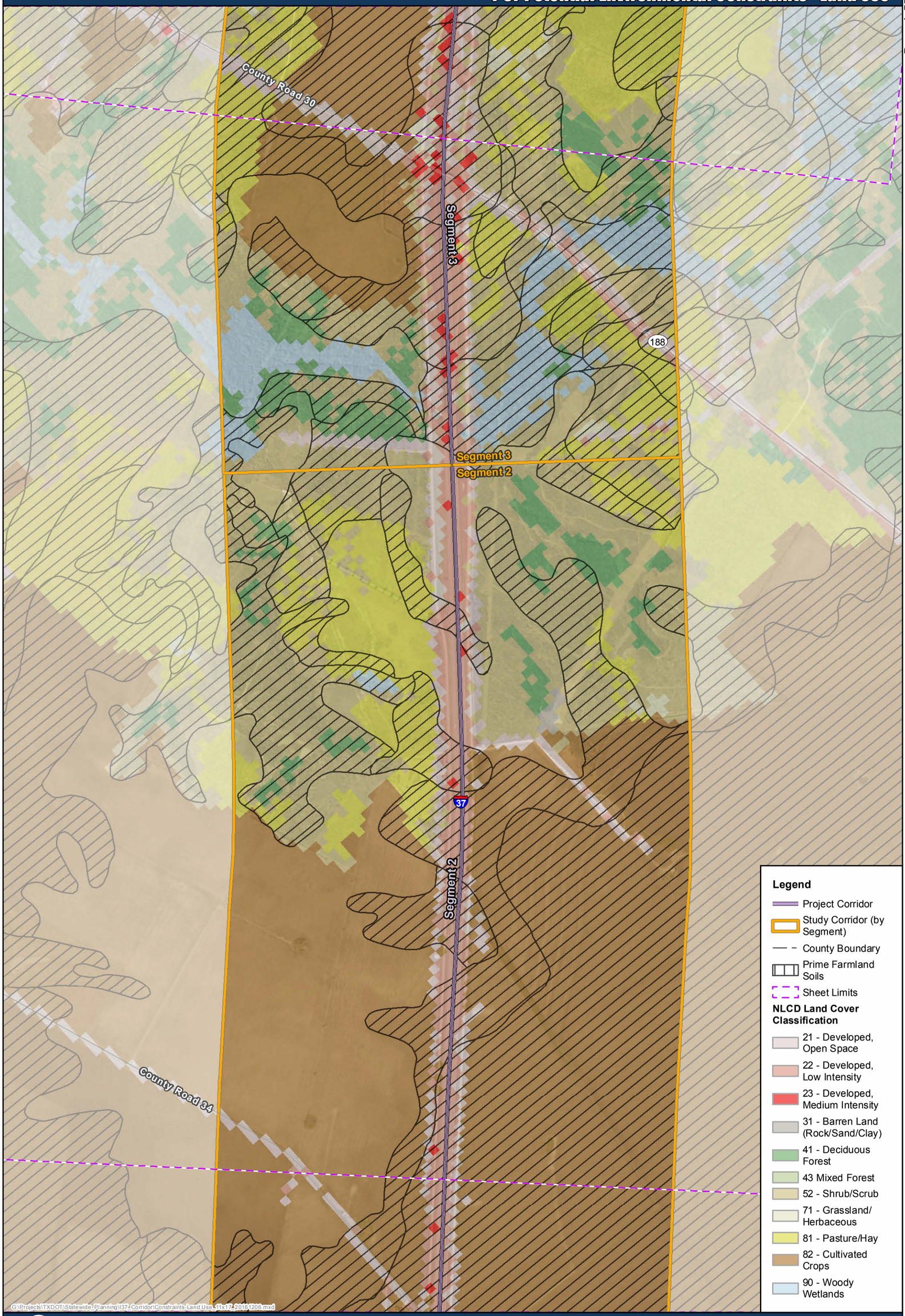

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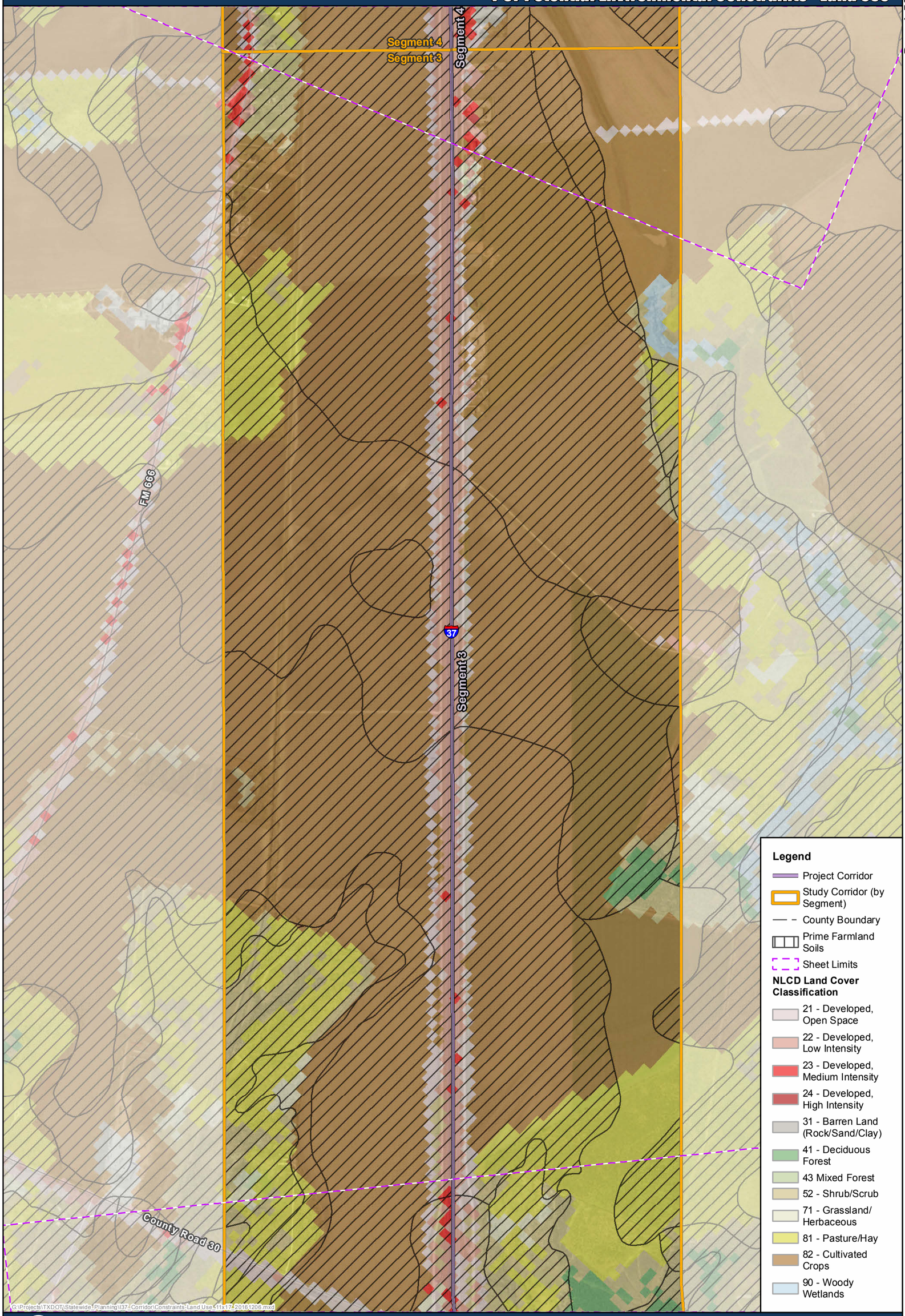

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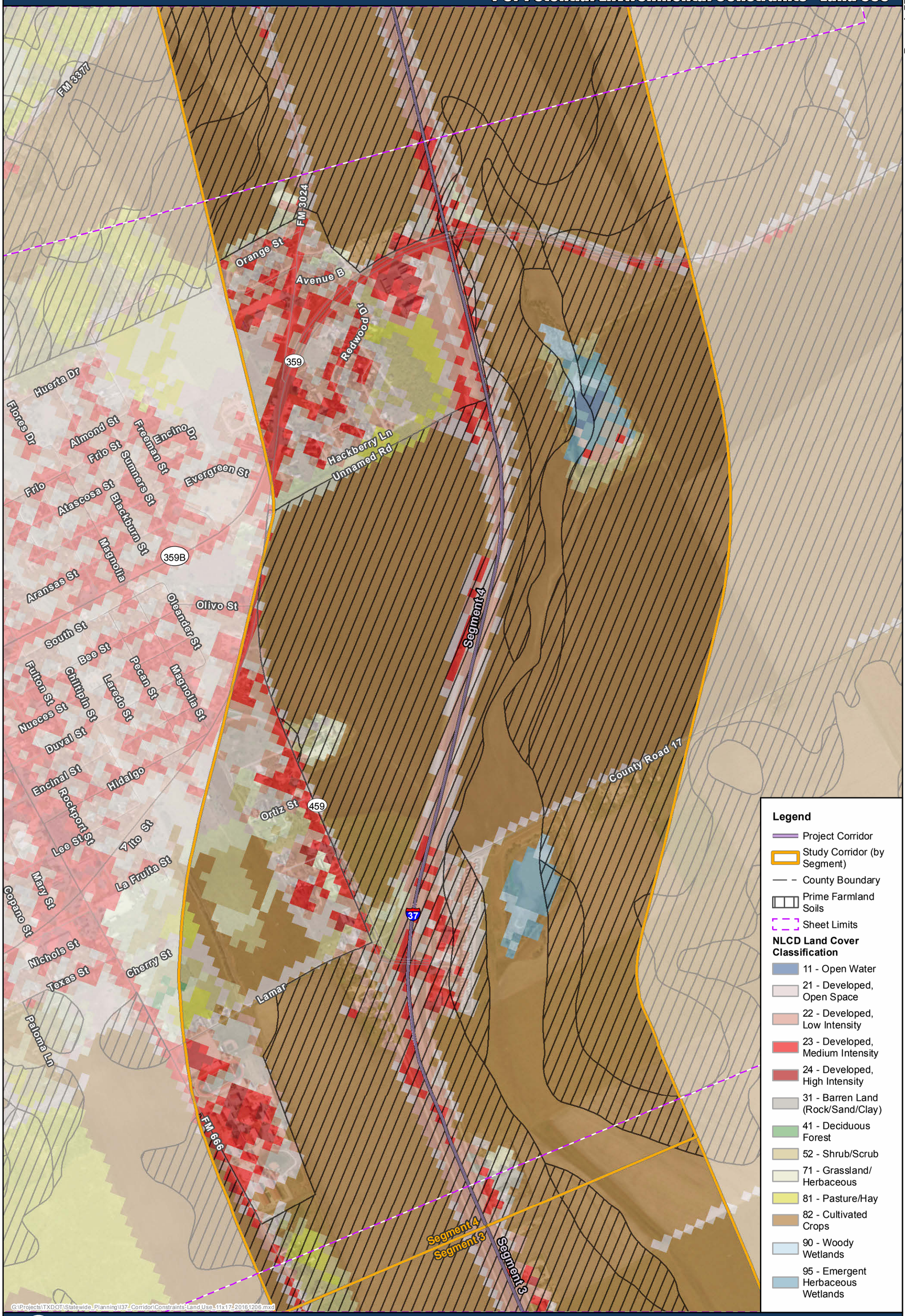

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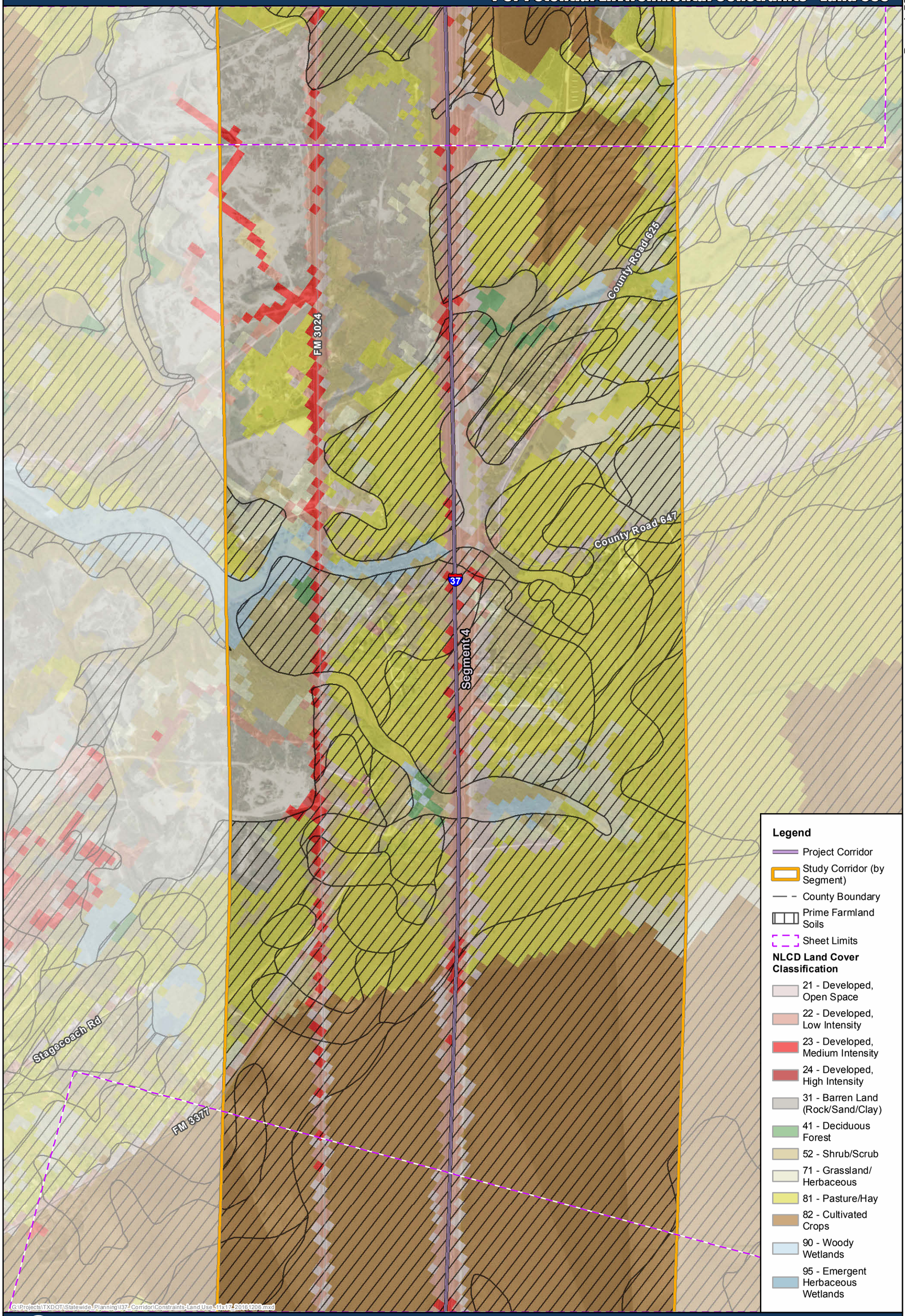

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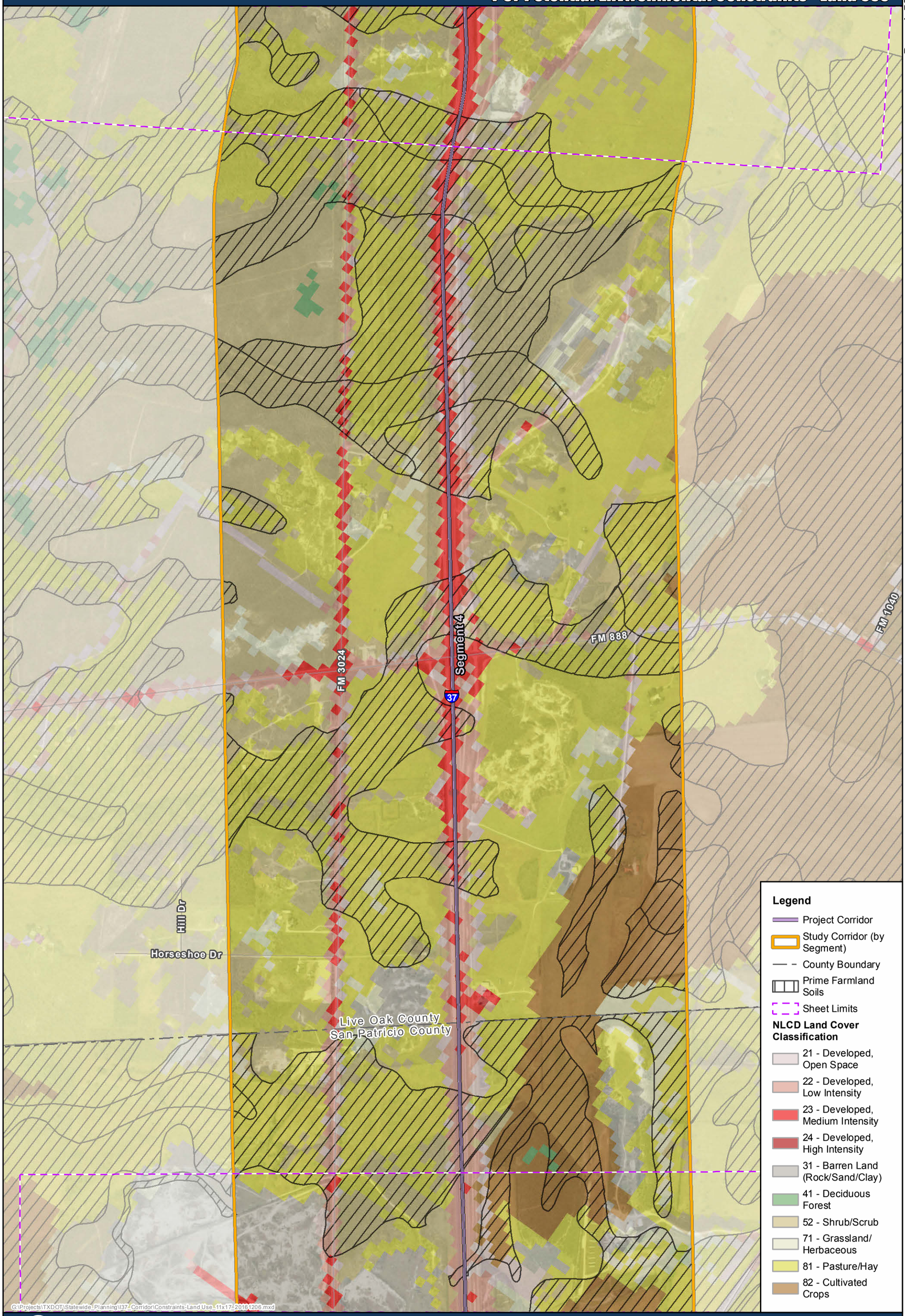

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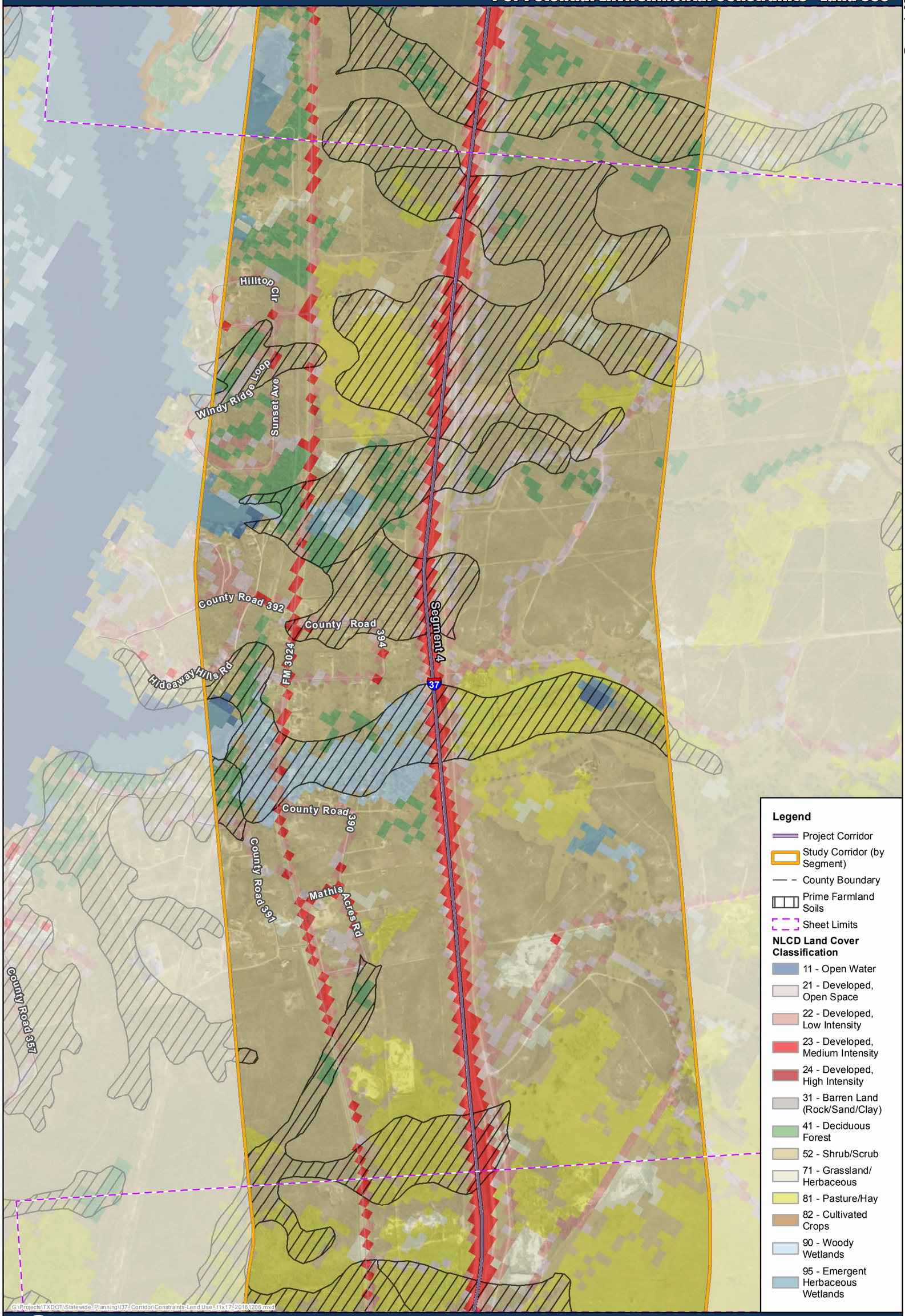

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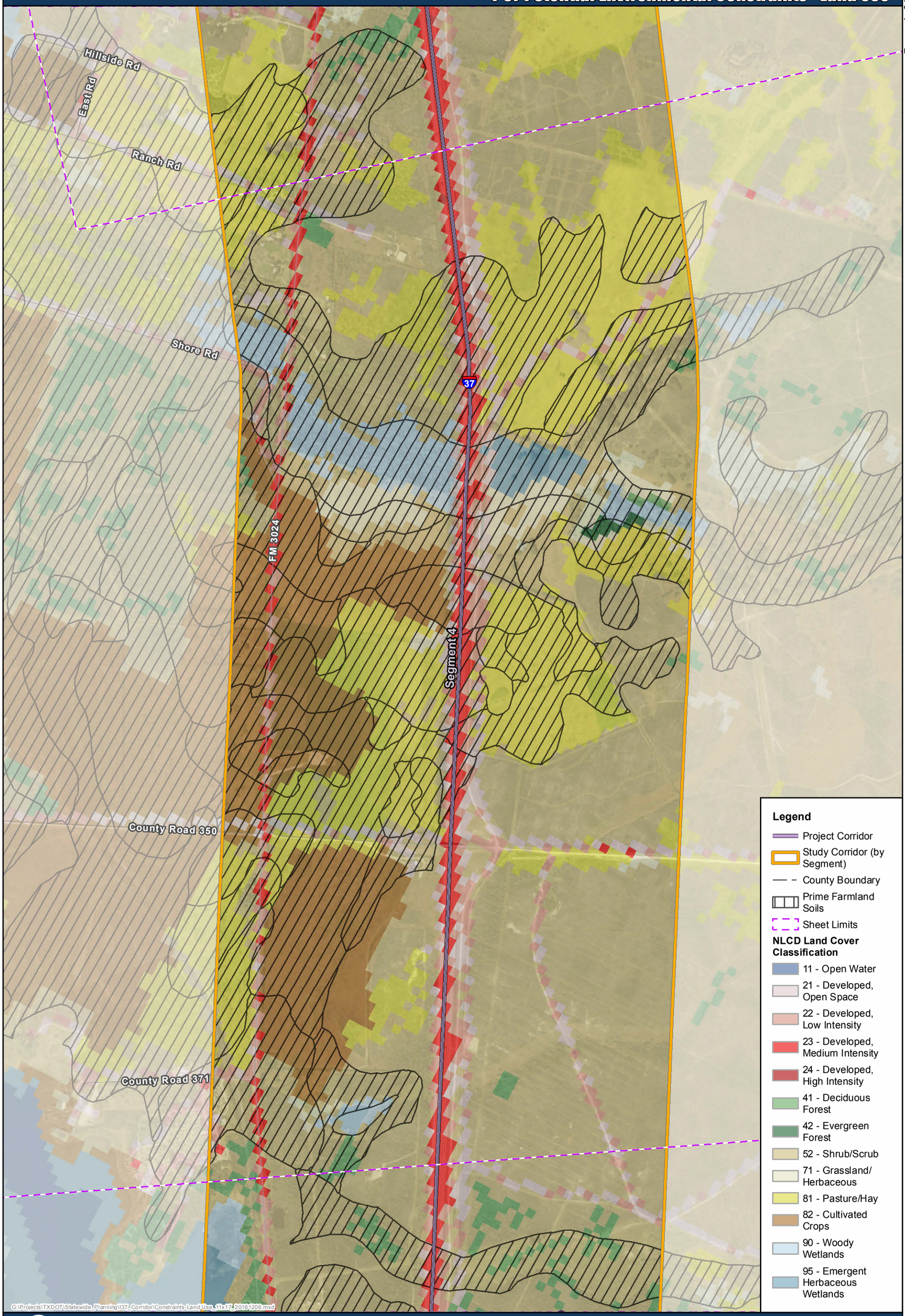

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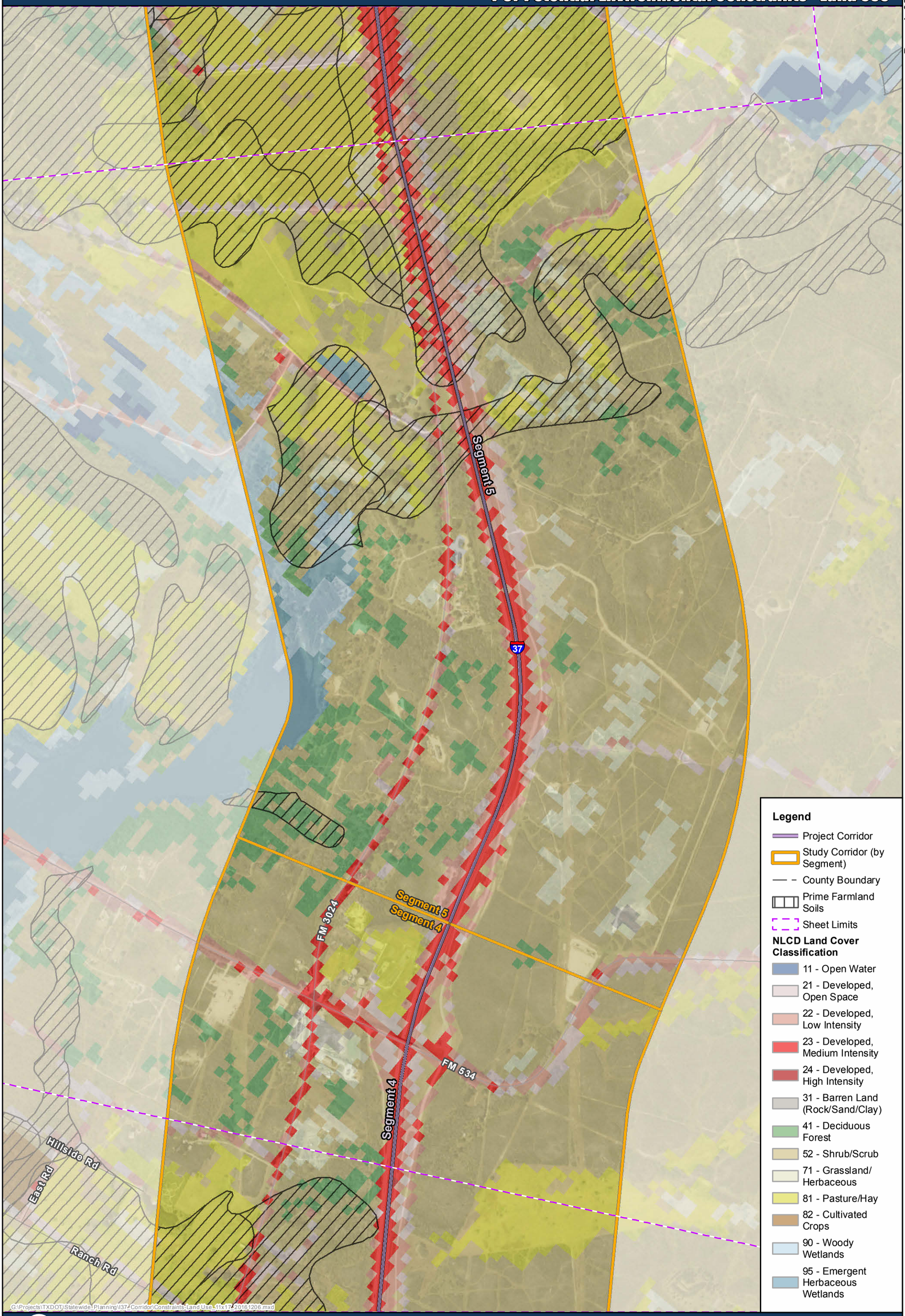

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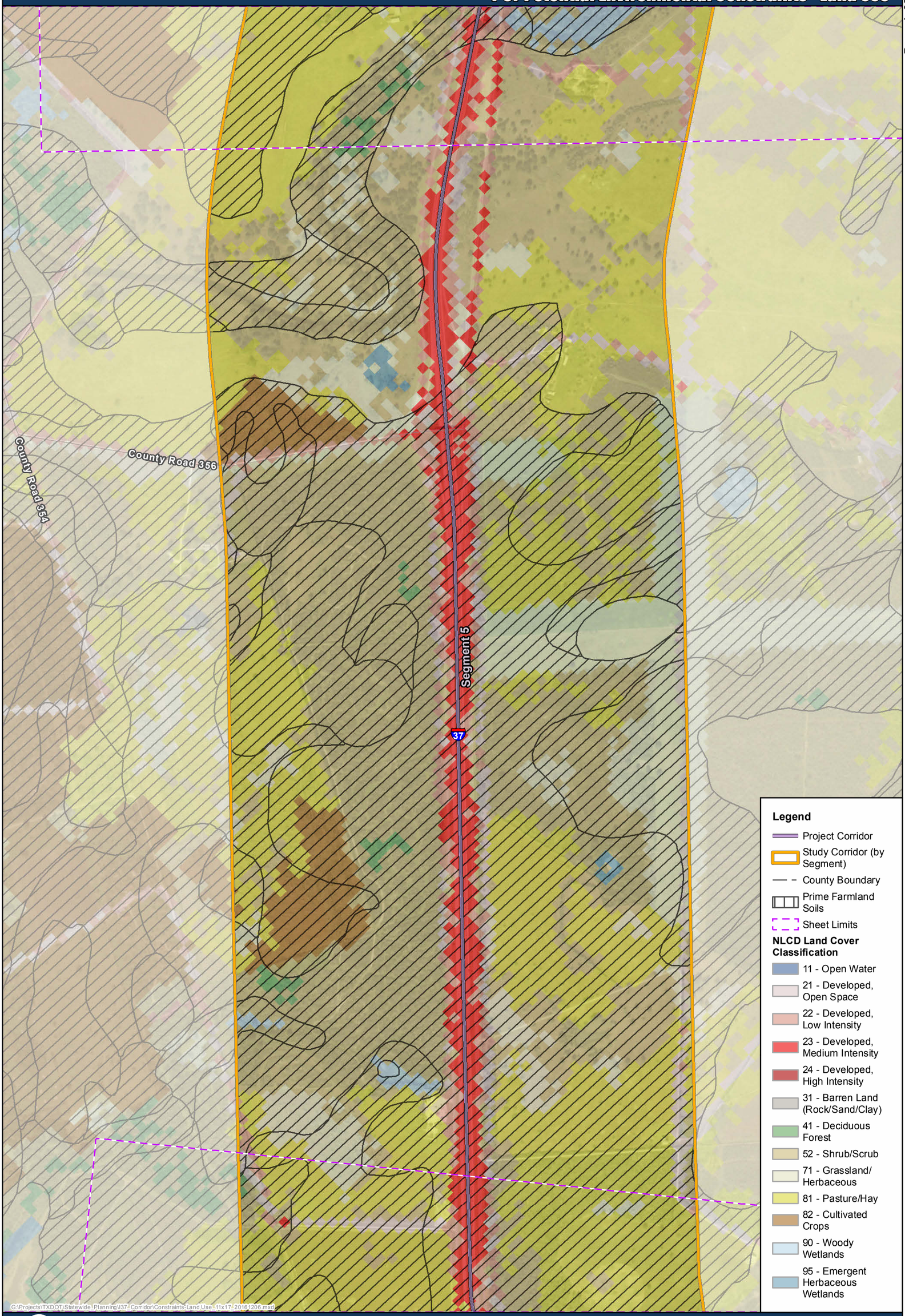

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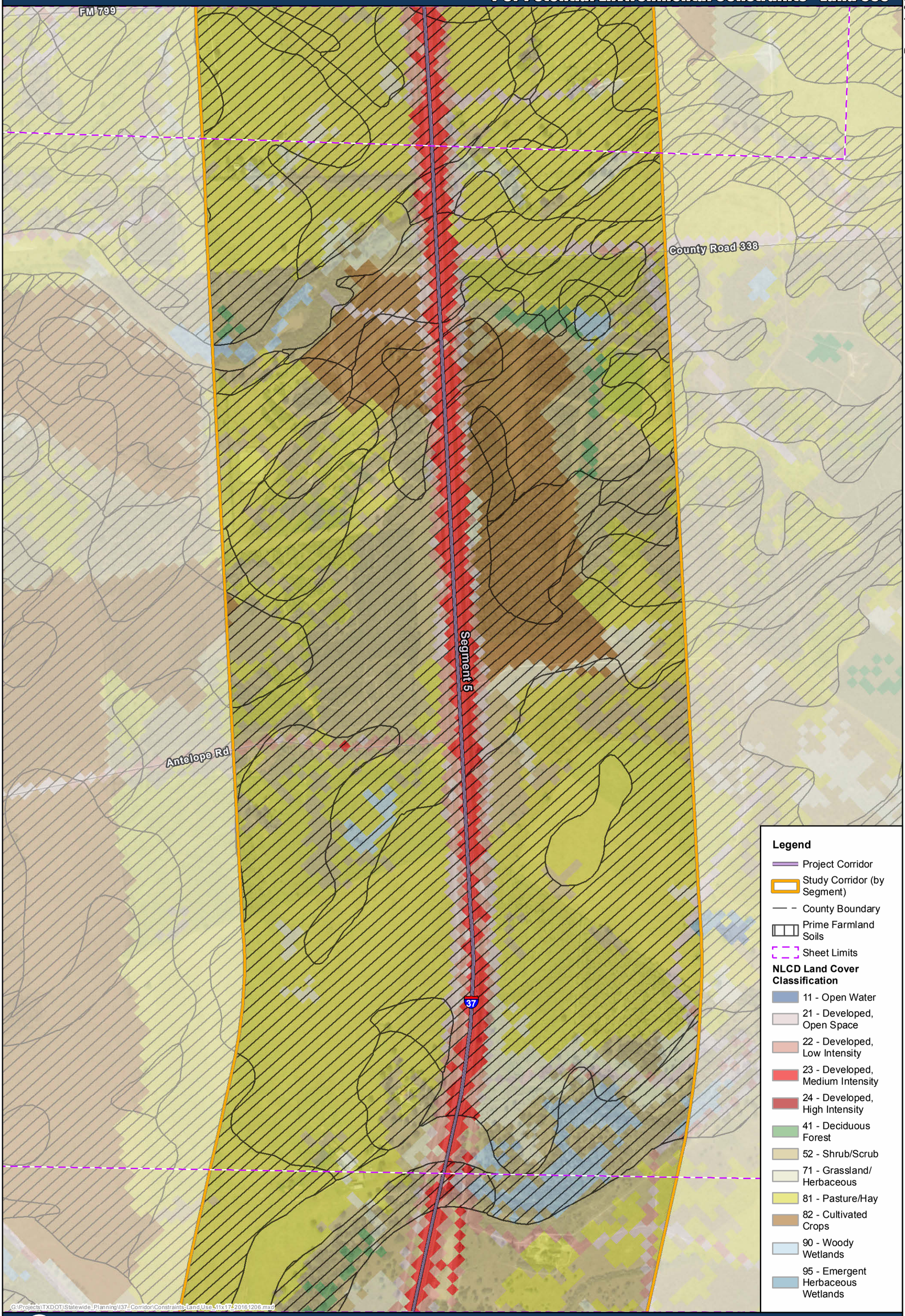

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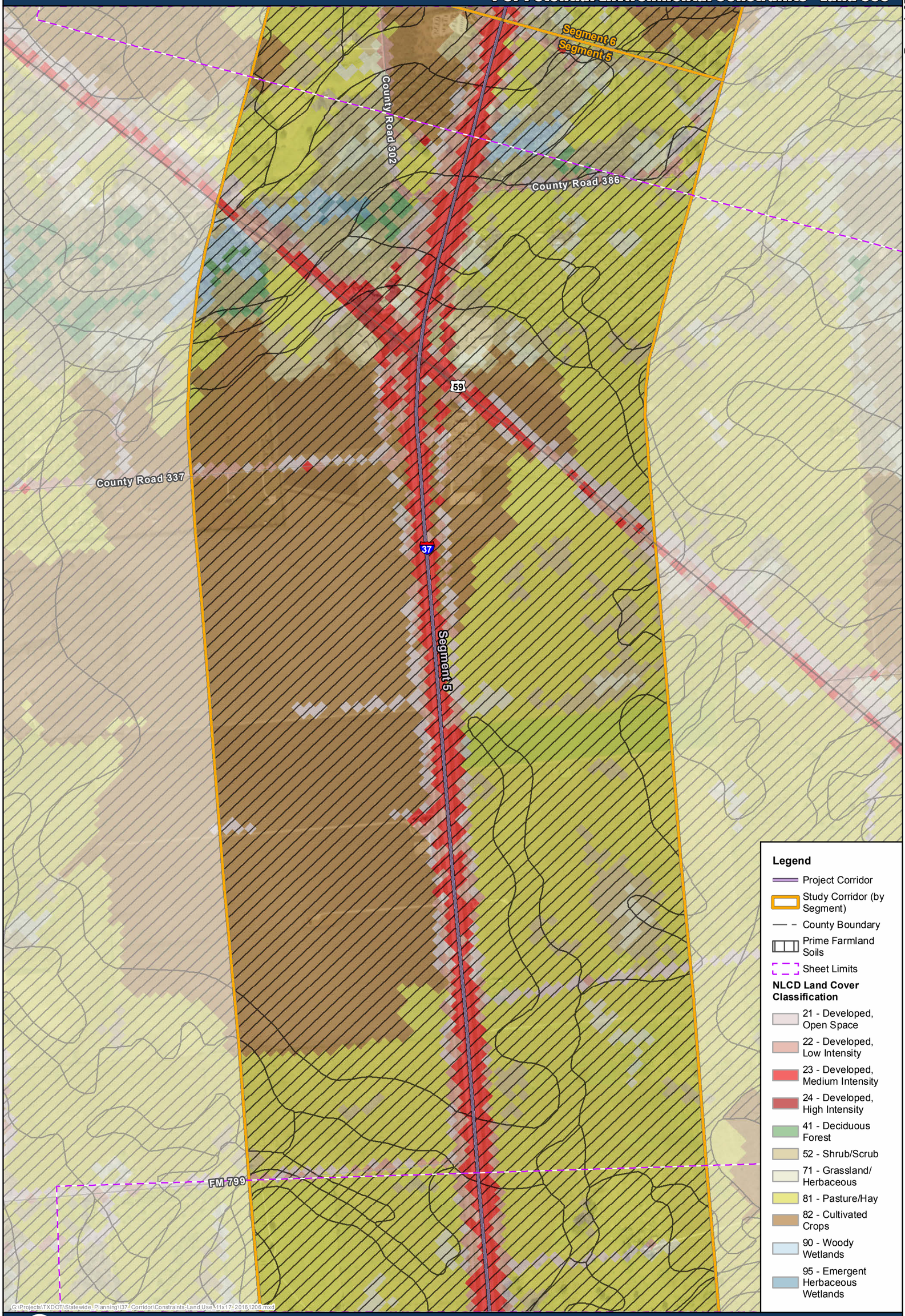

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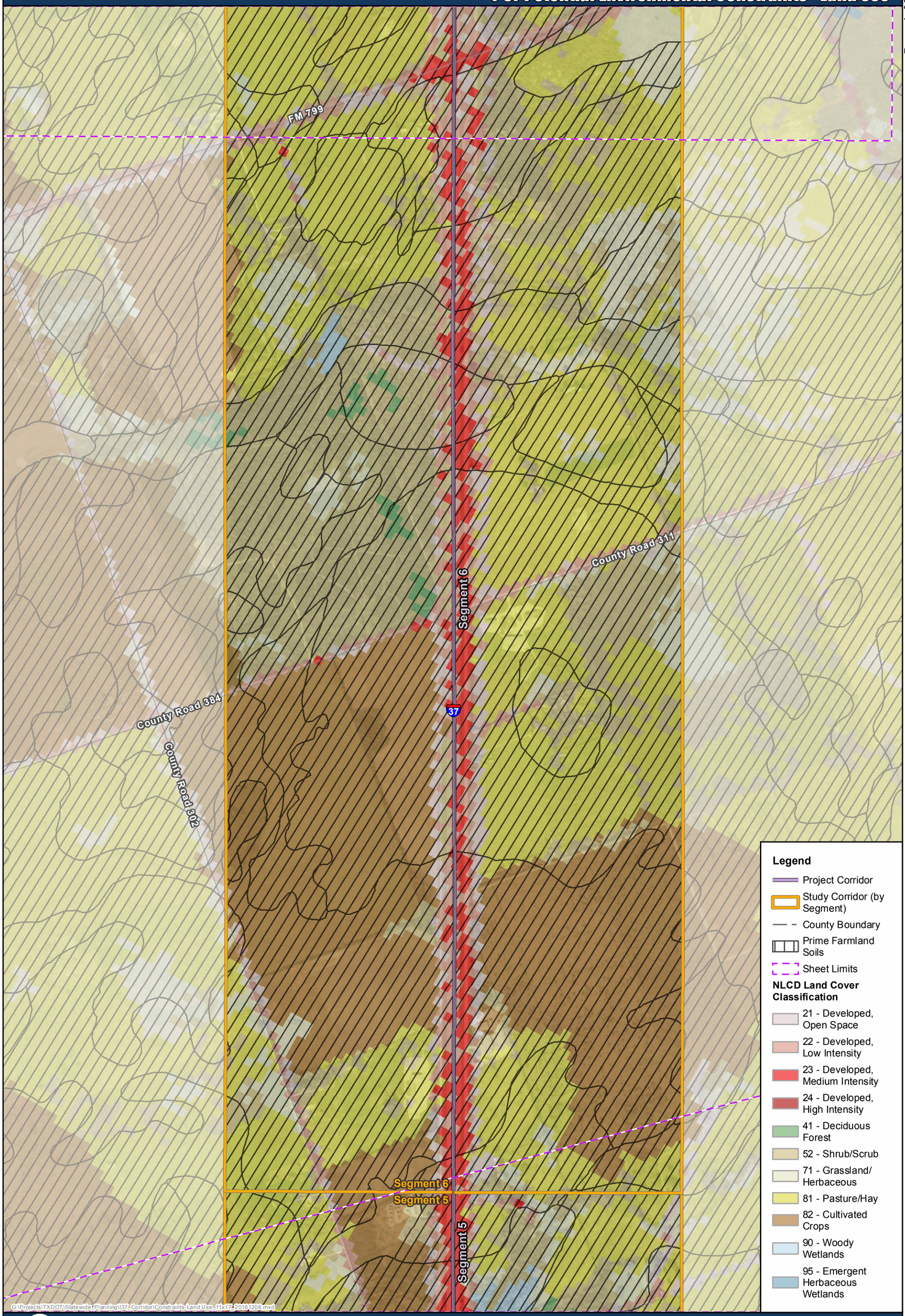

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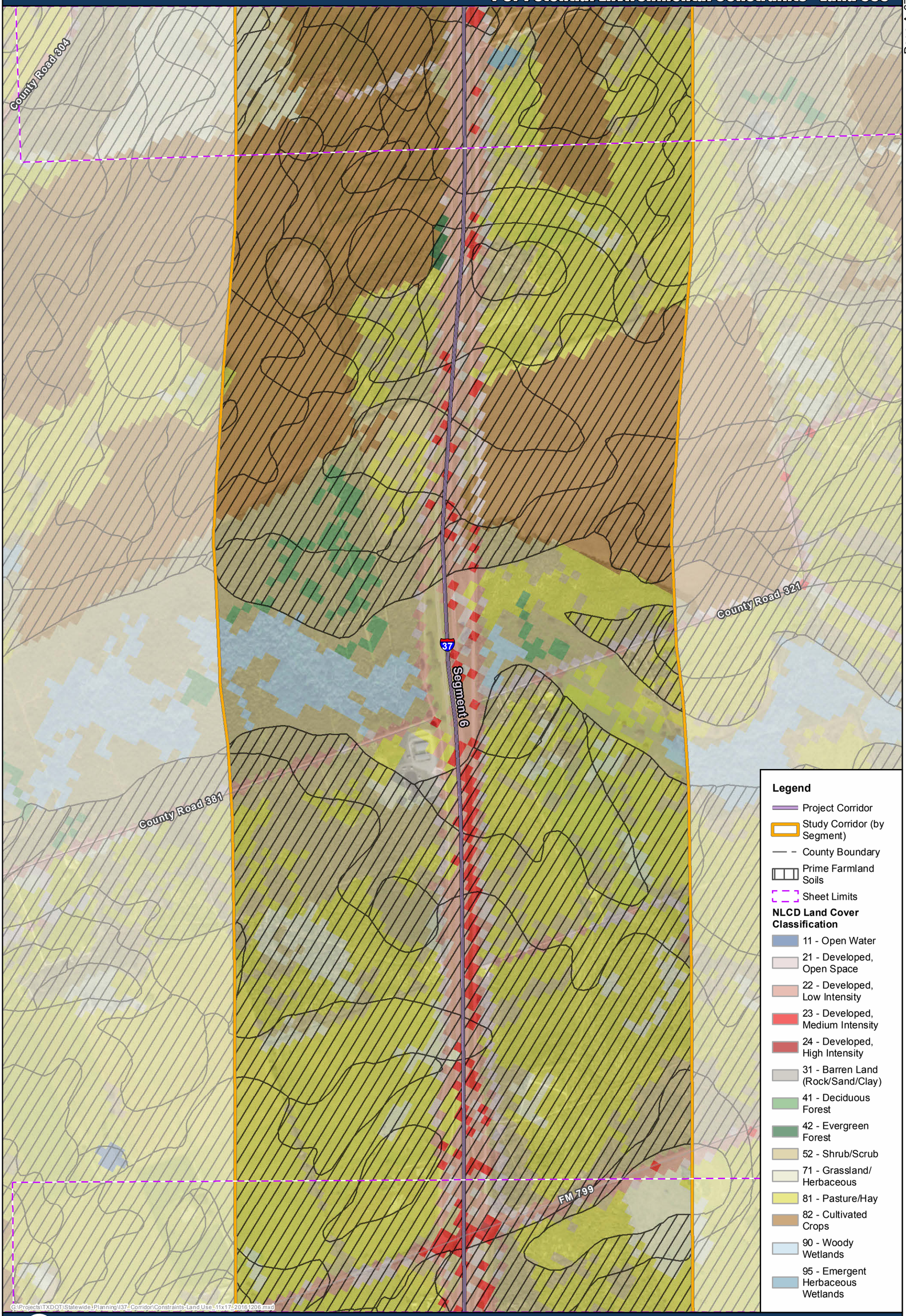

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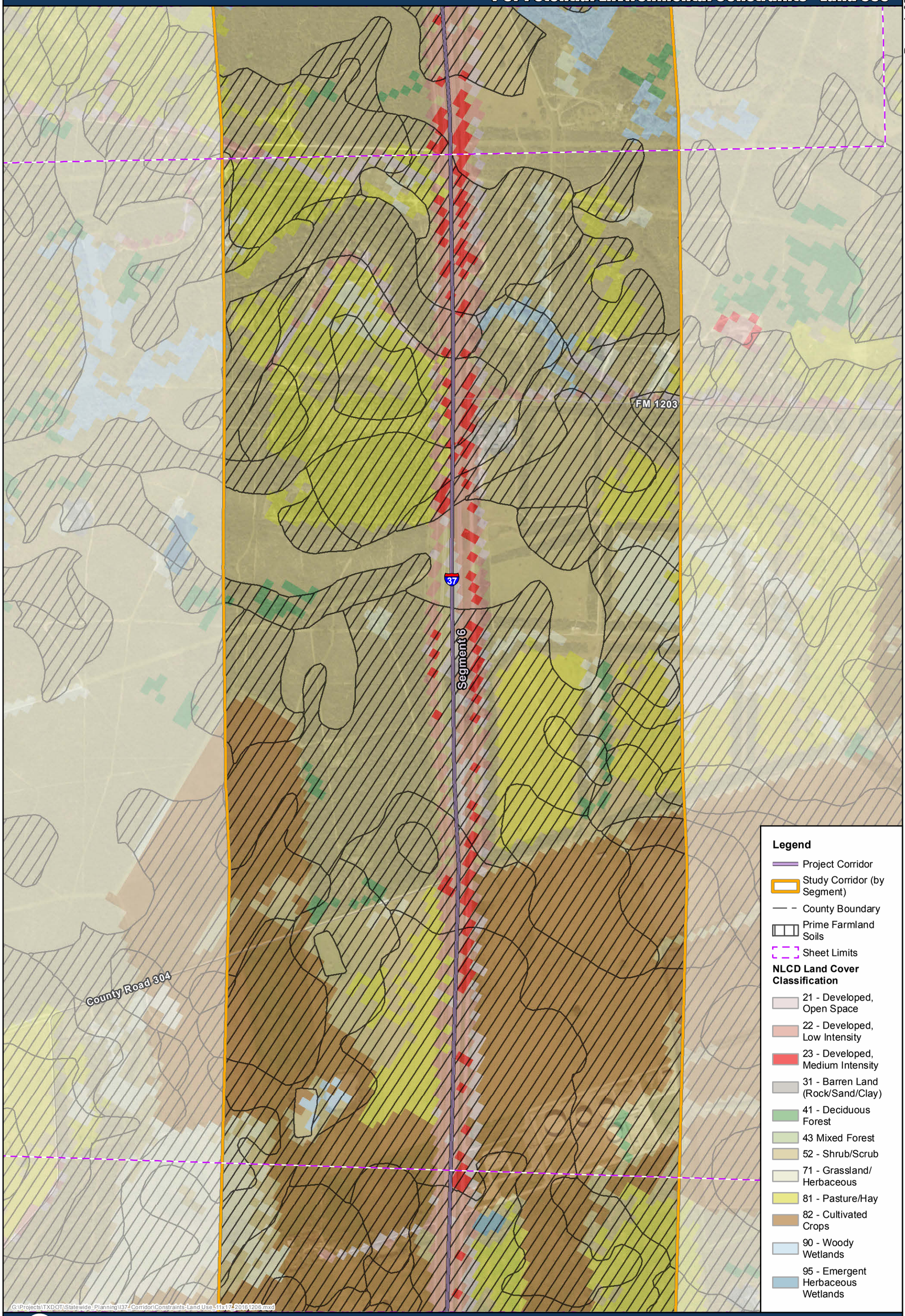

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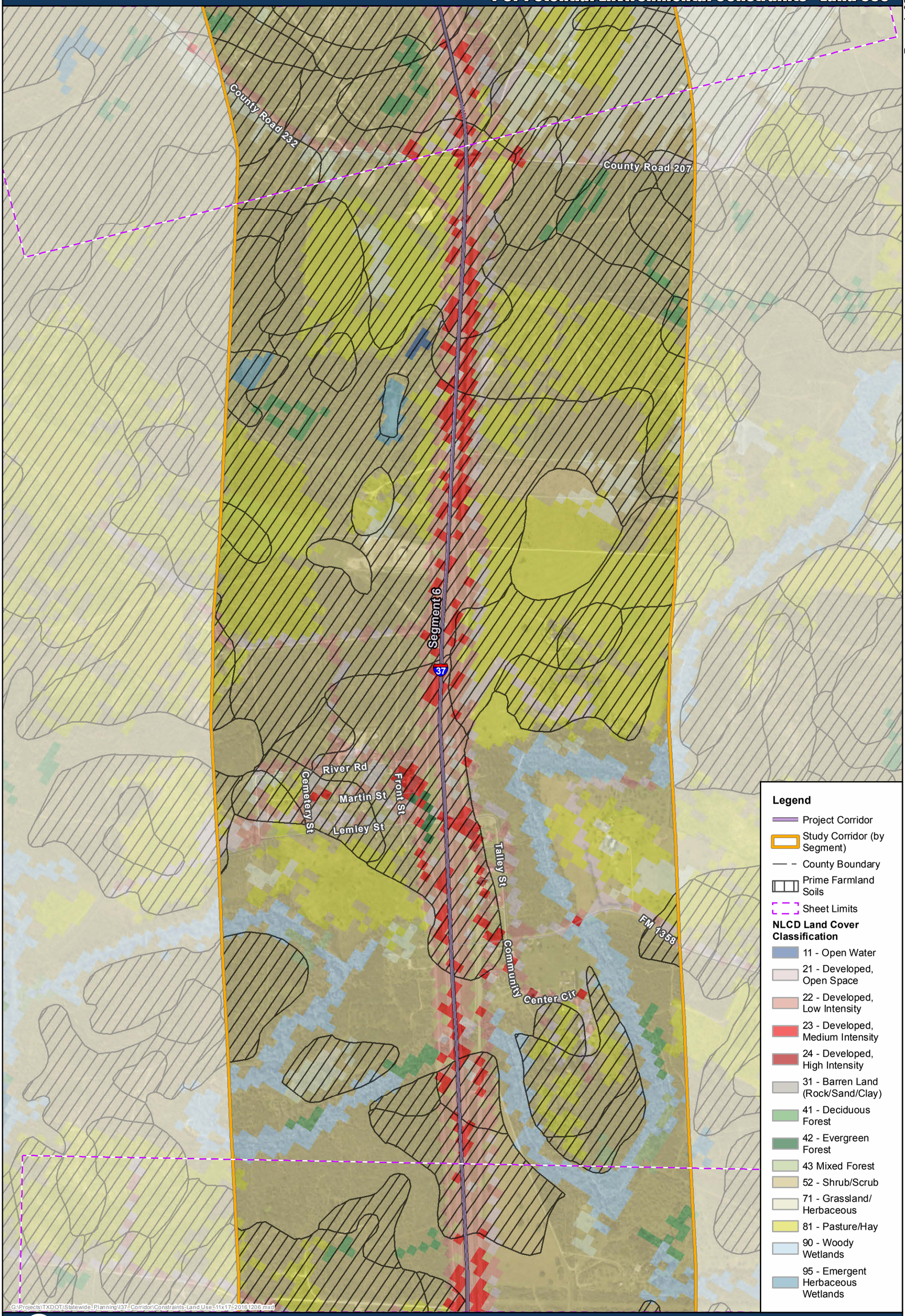

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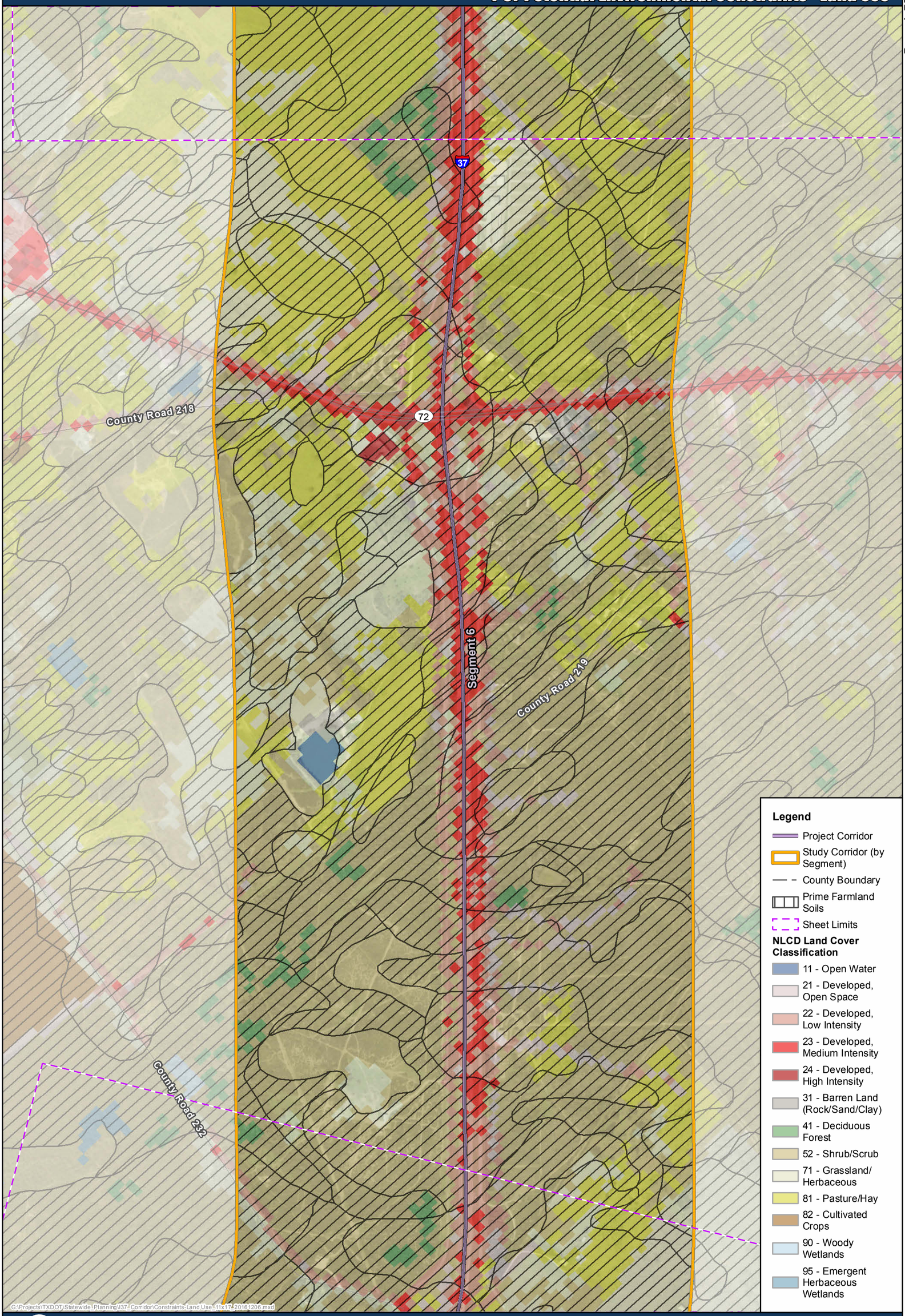
I-37 Potential Environmental Constraints - Land Use



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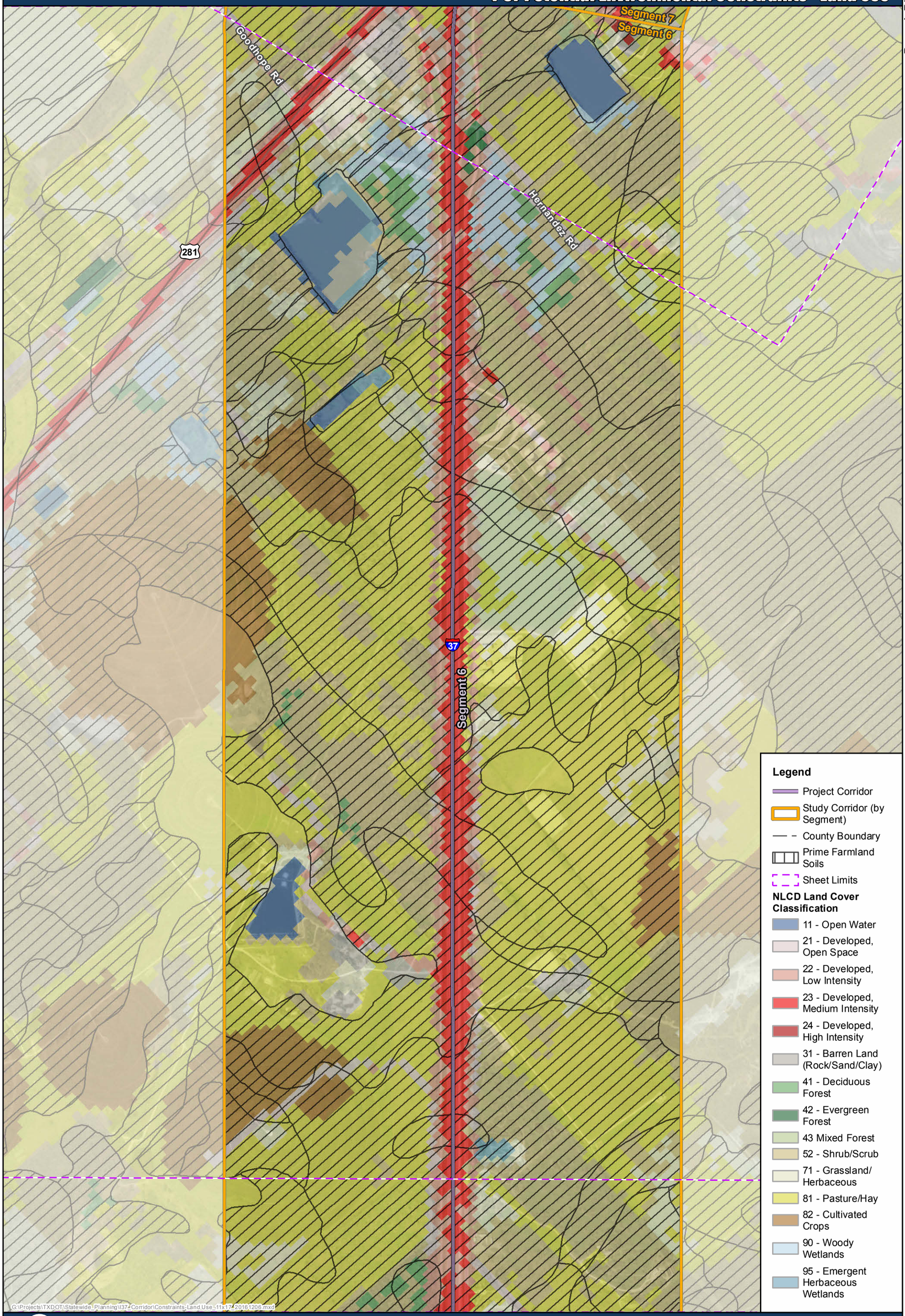
I-37 Potential Environmental Constraints - Land Use



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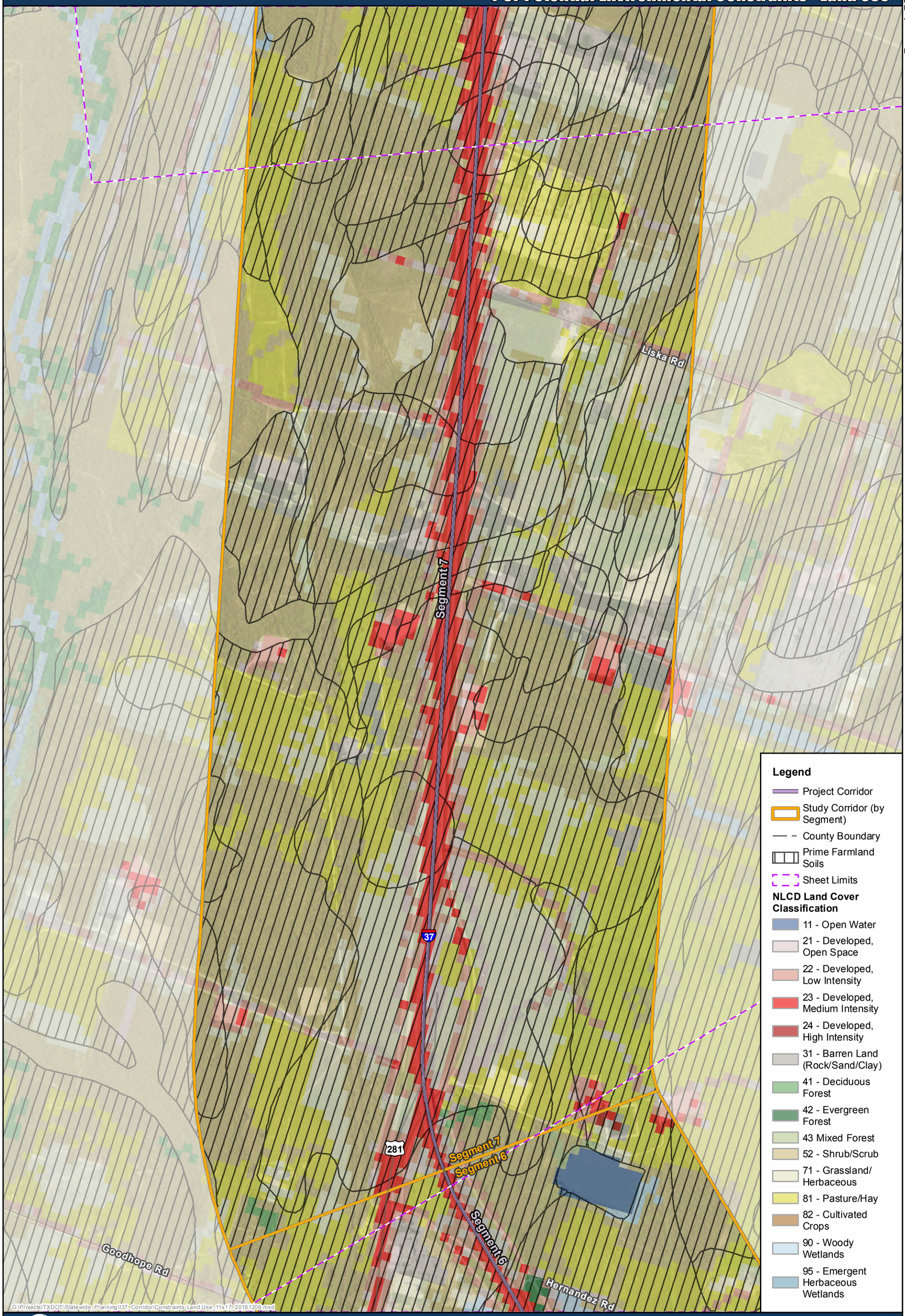

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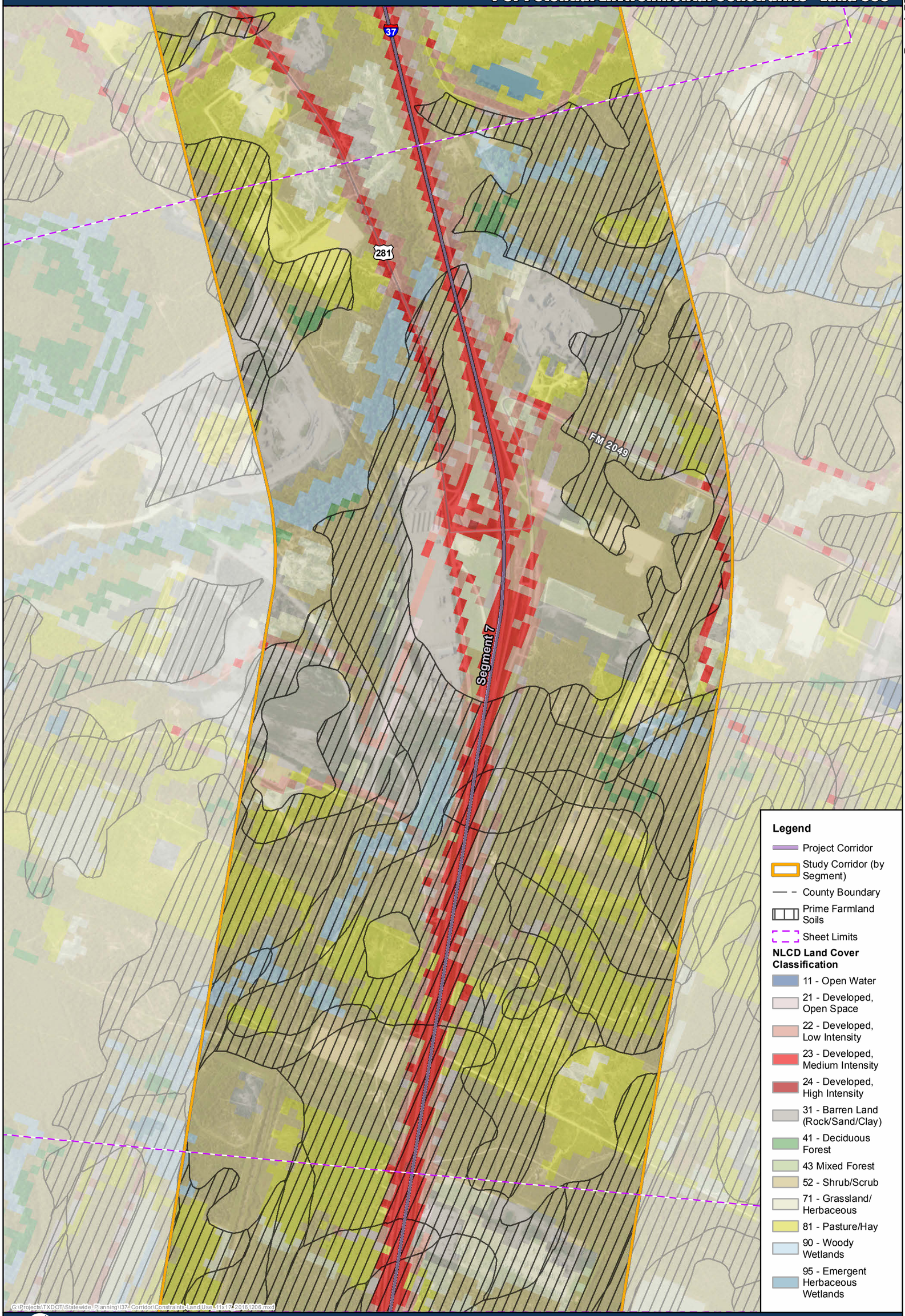

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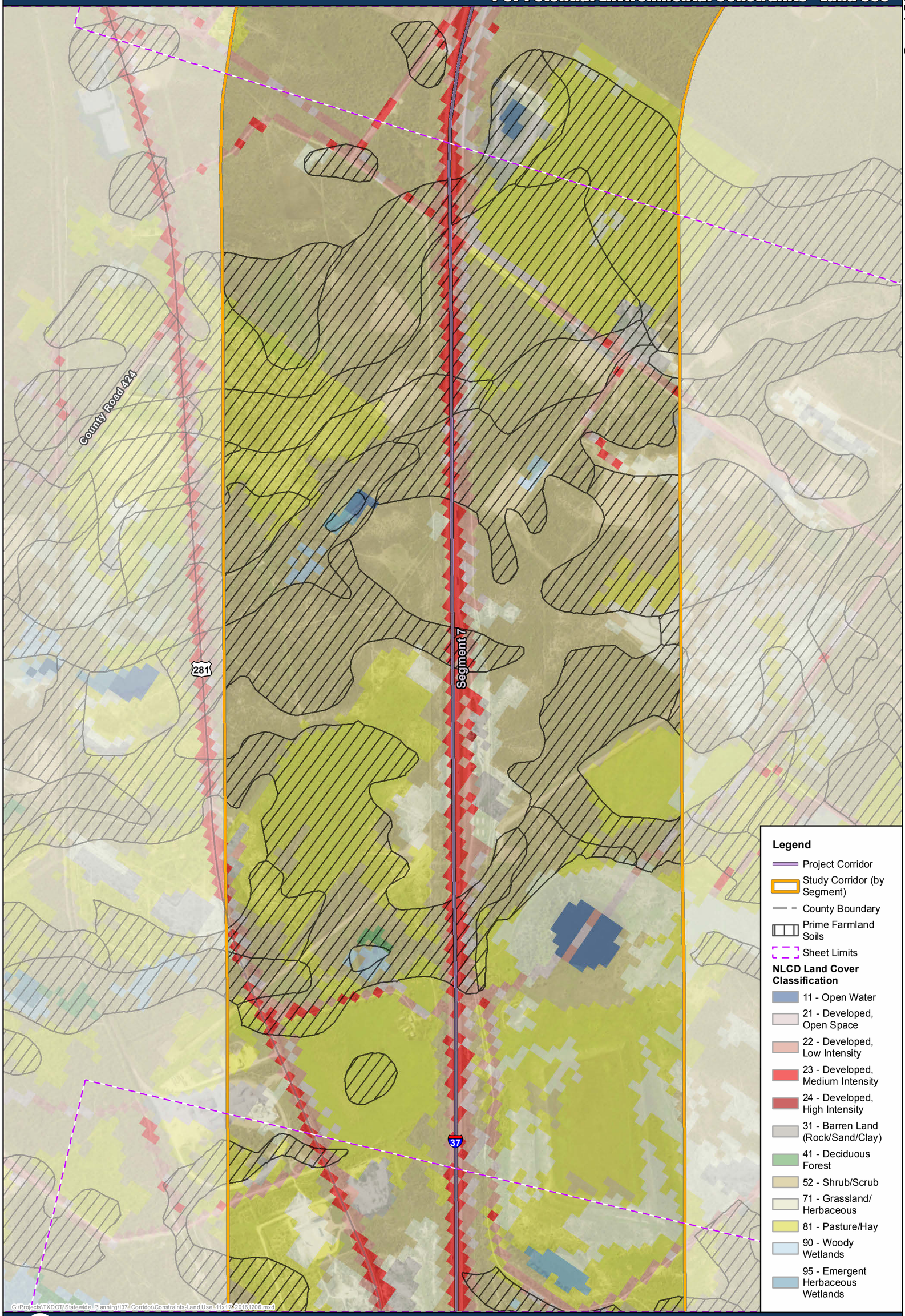

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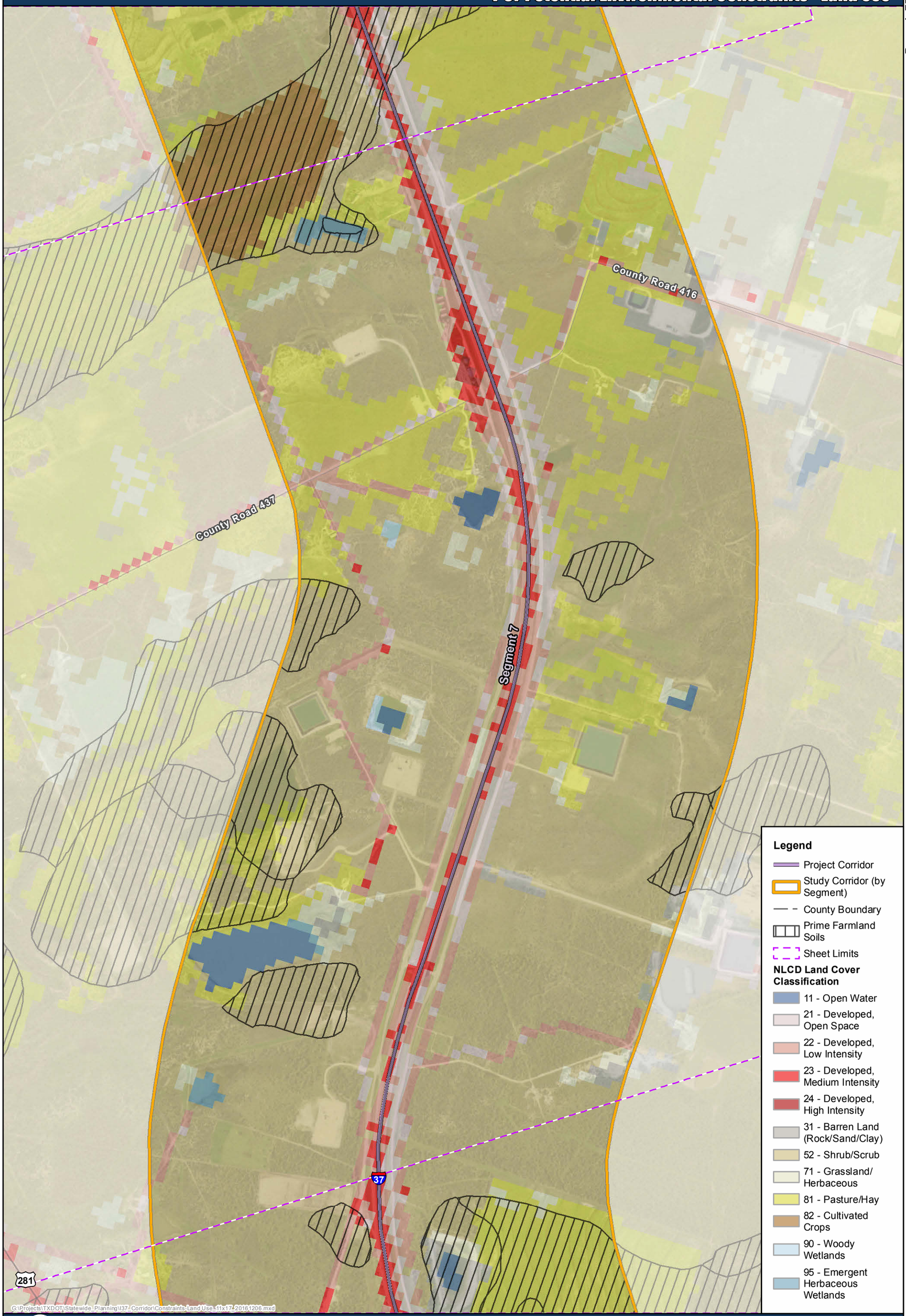

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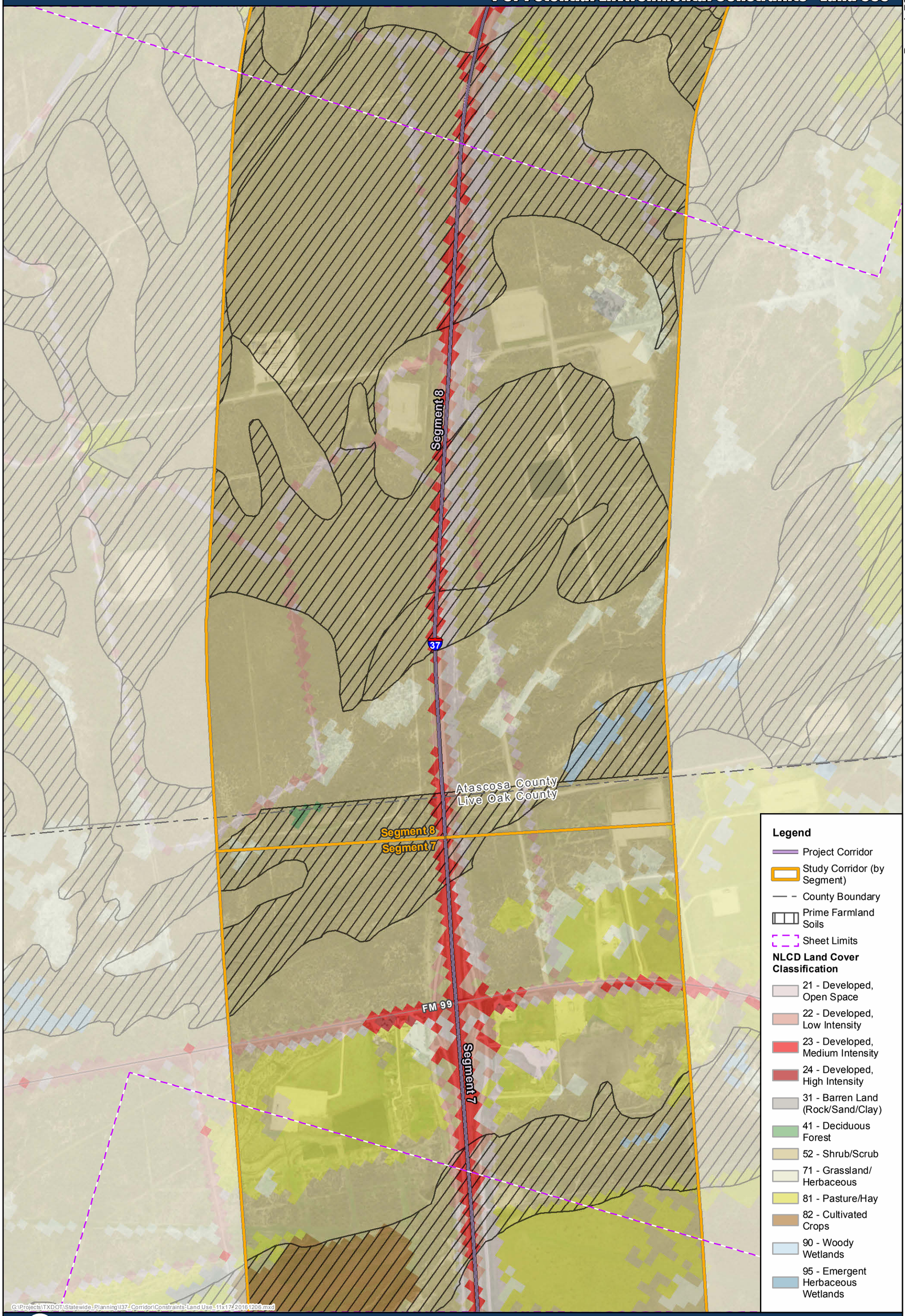

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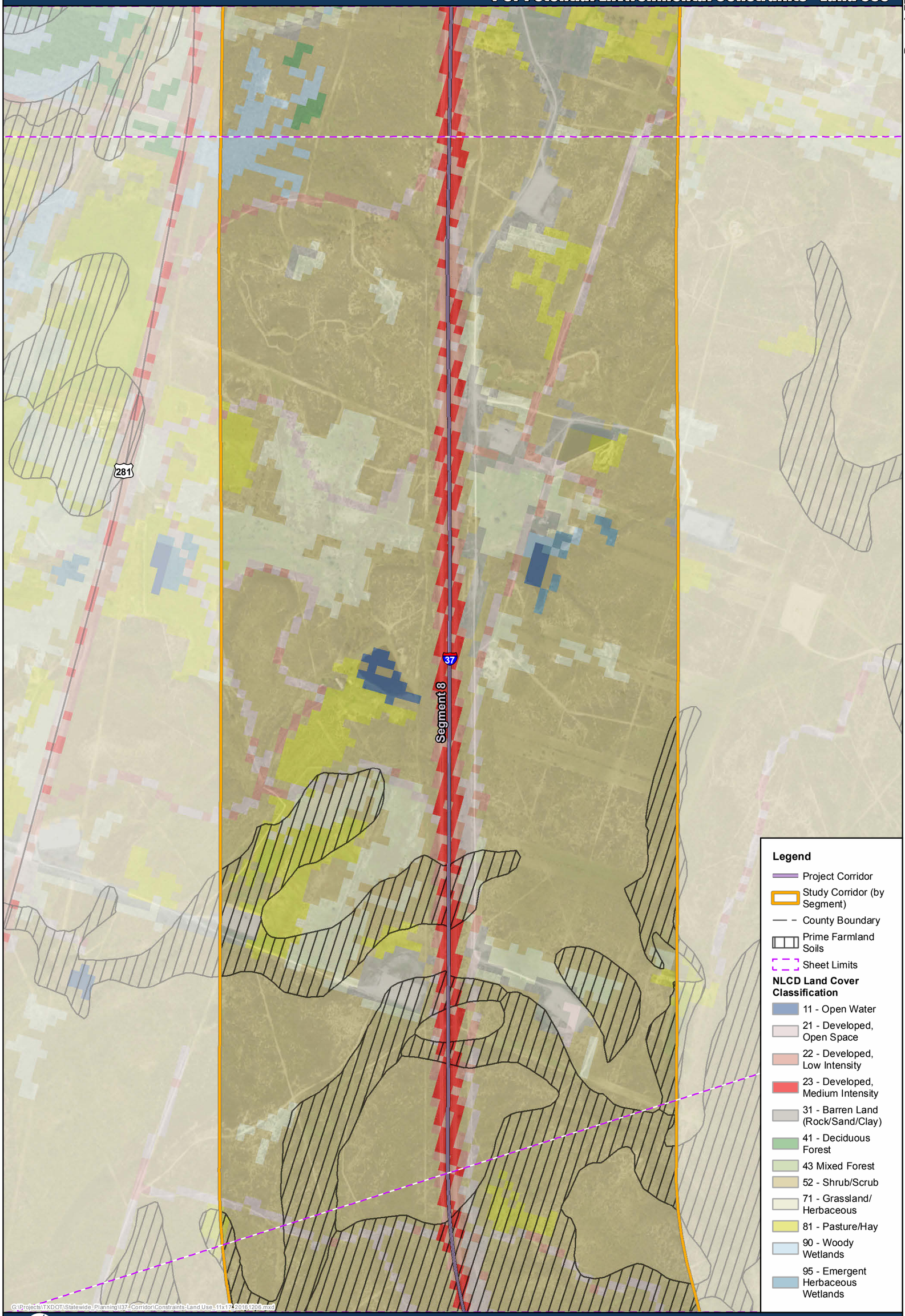

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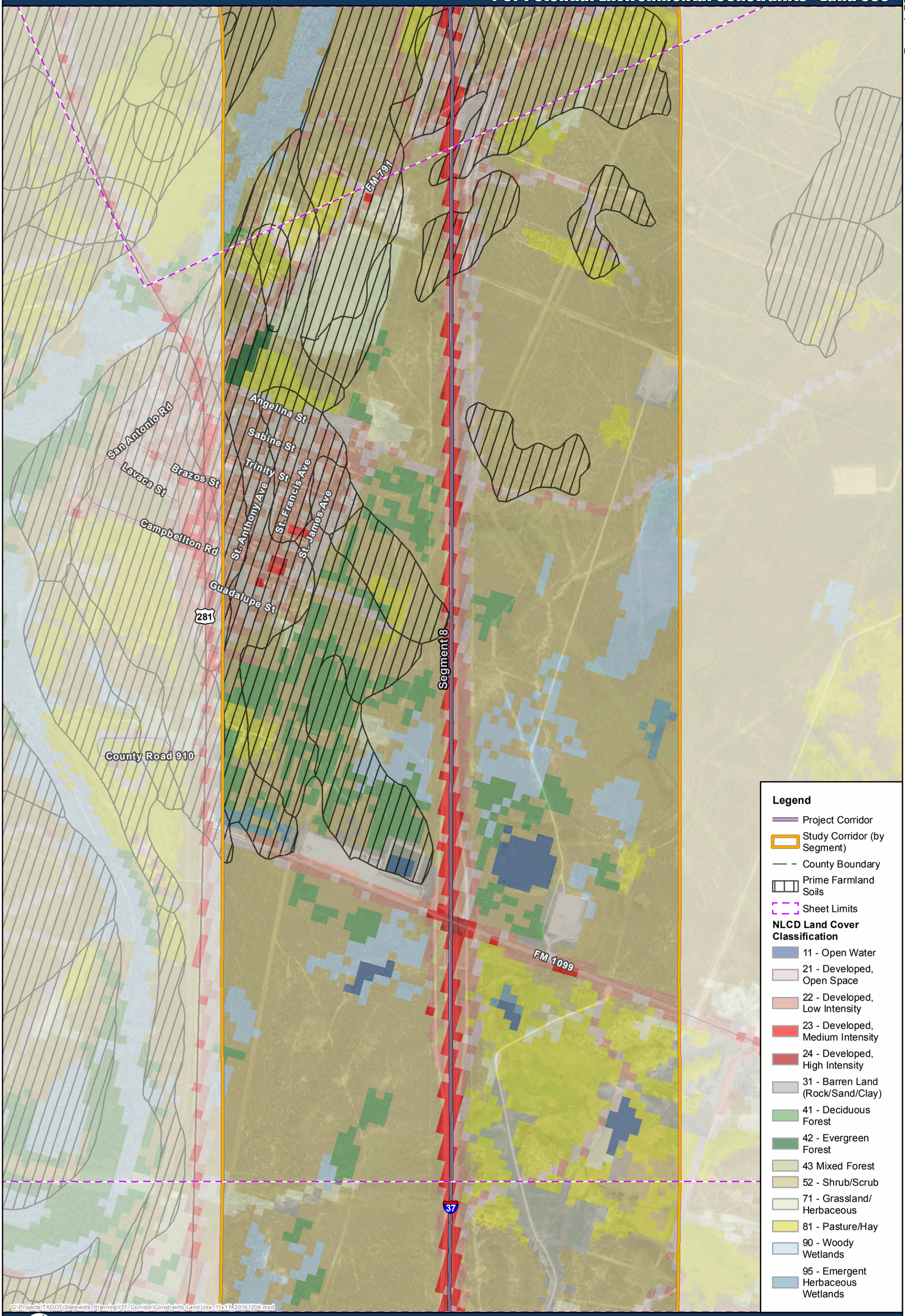

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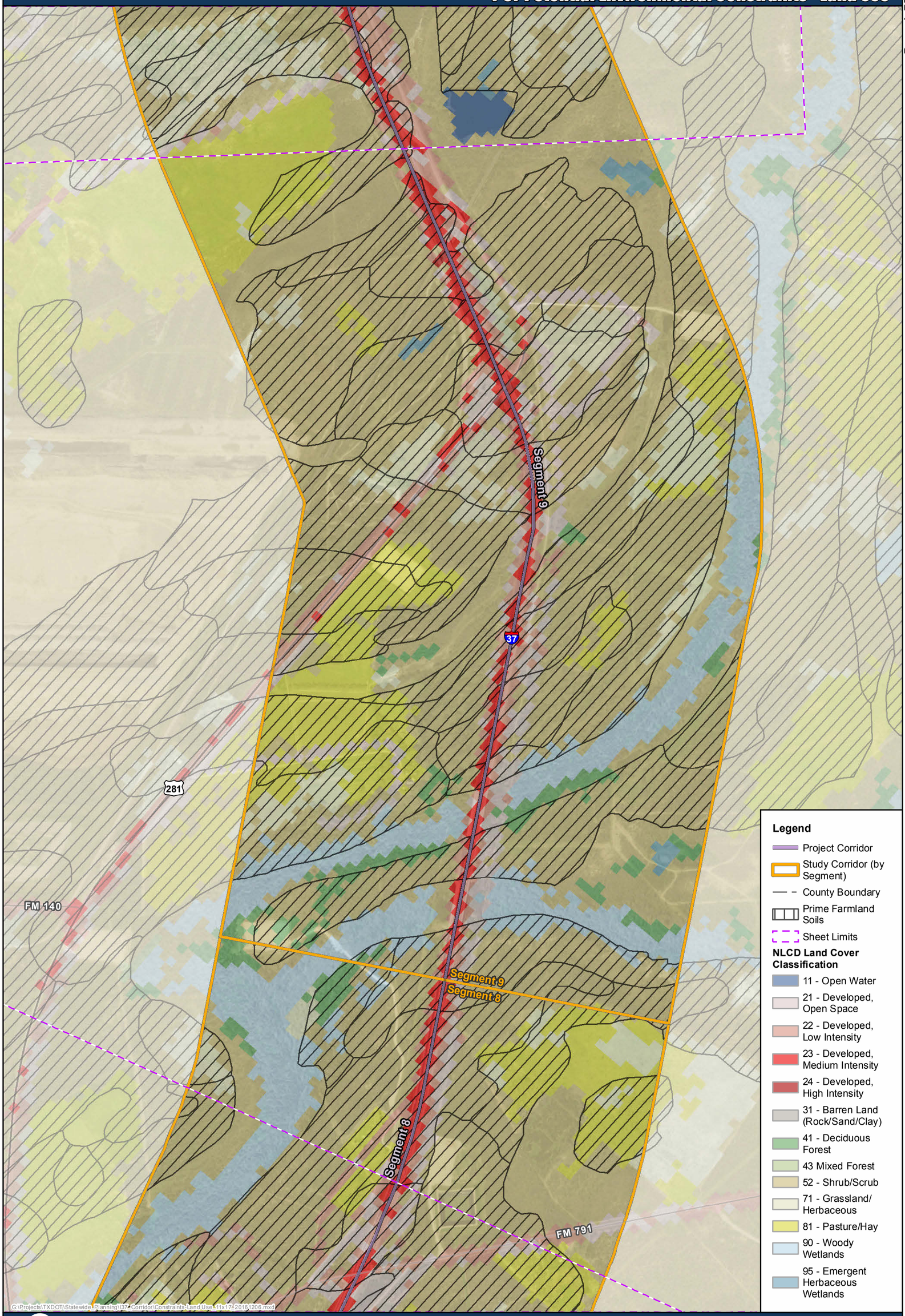

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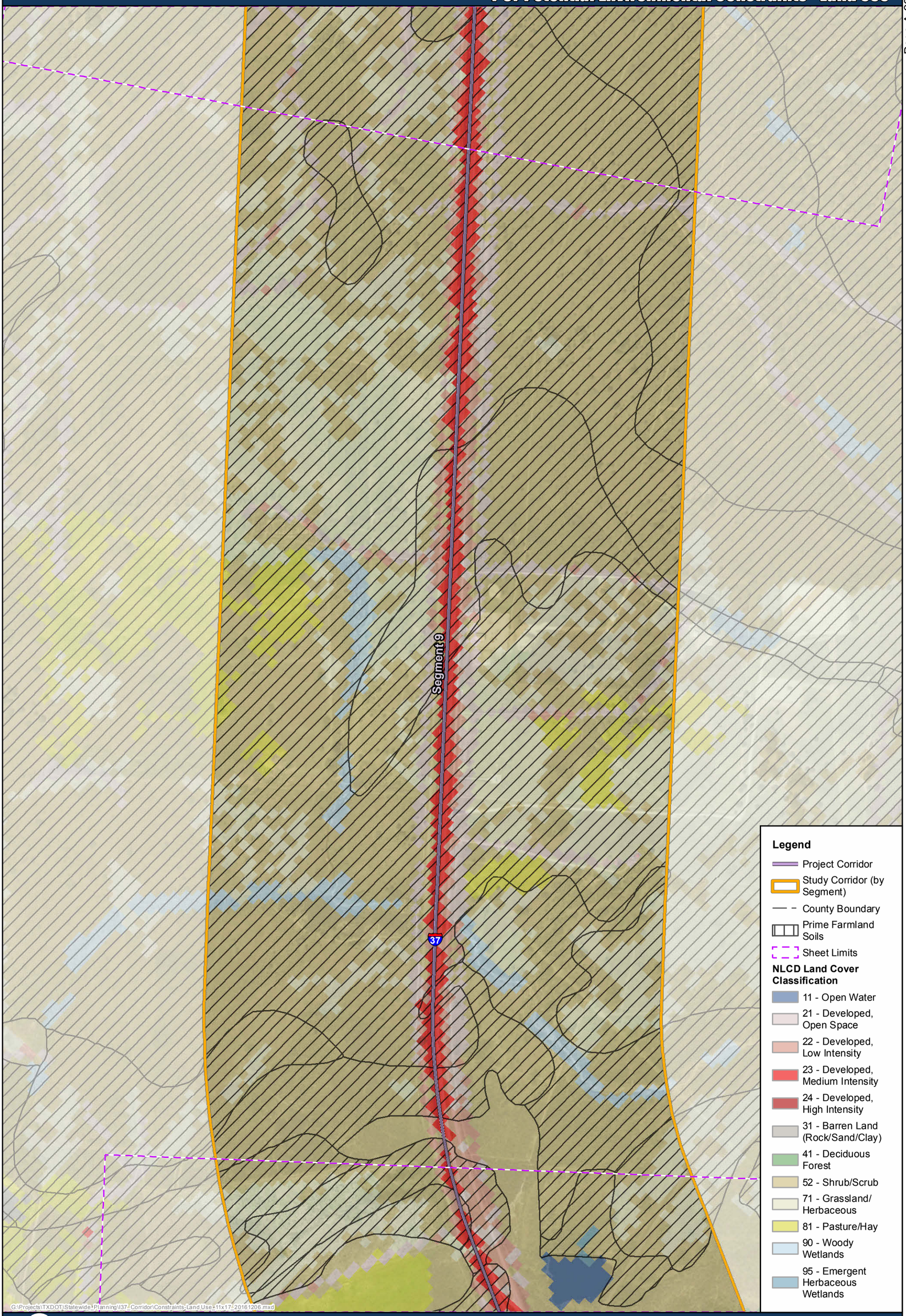

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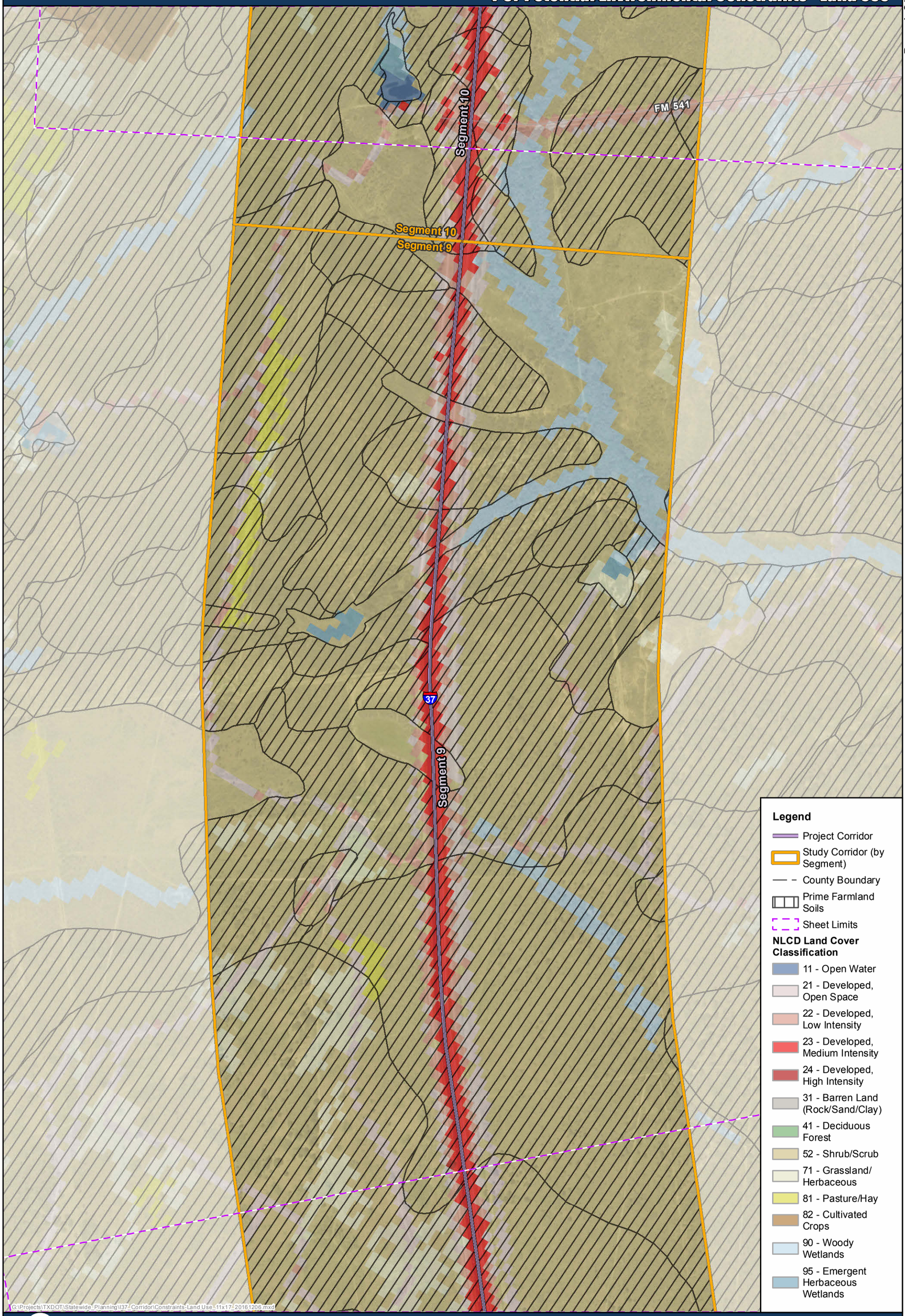

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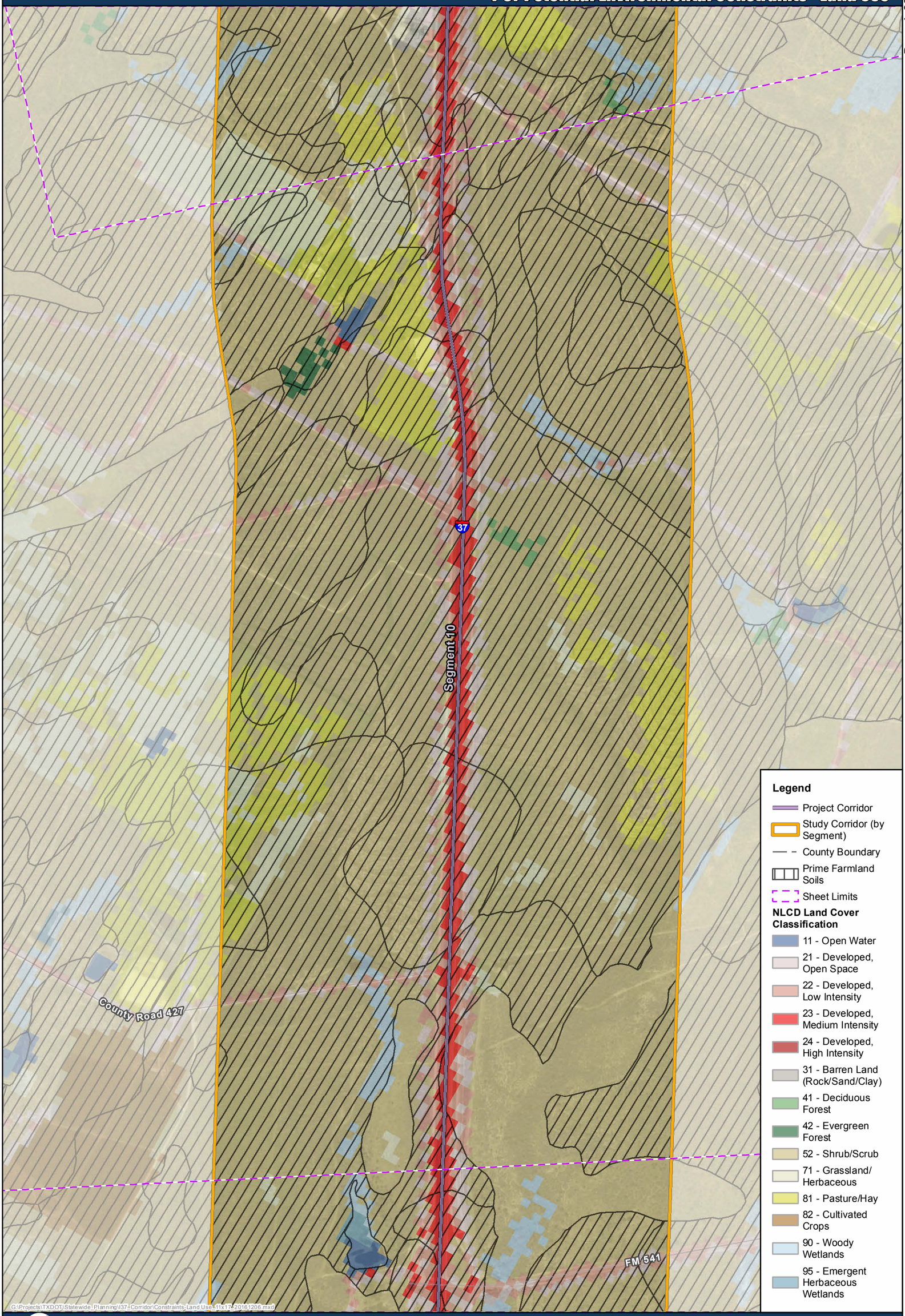

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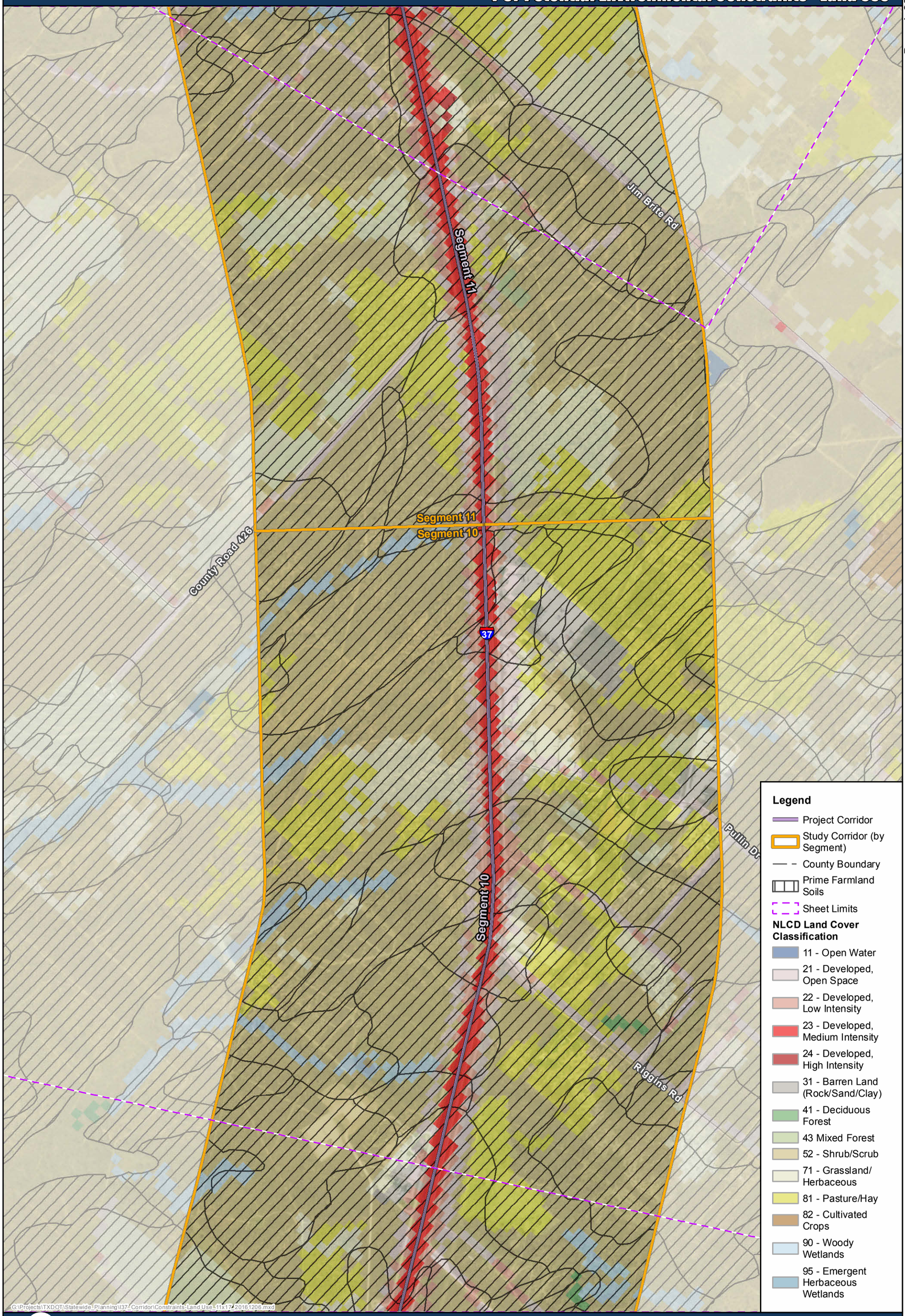

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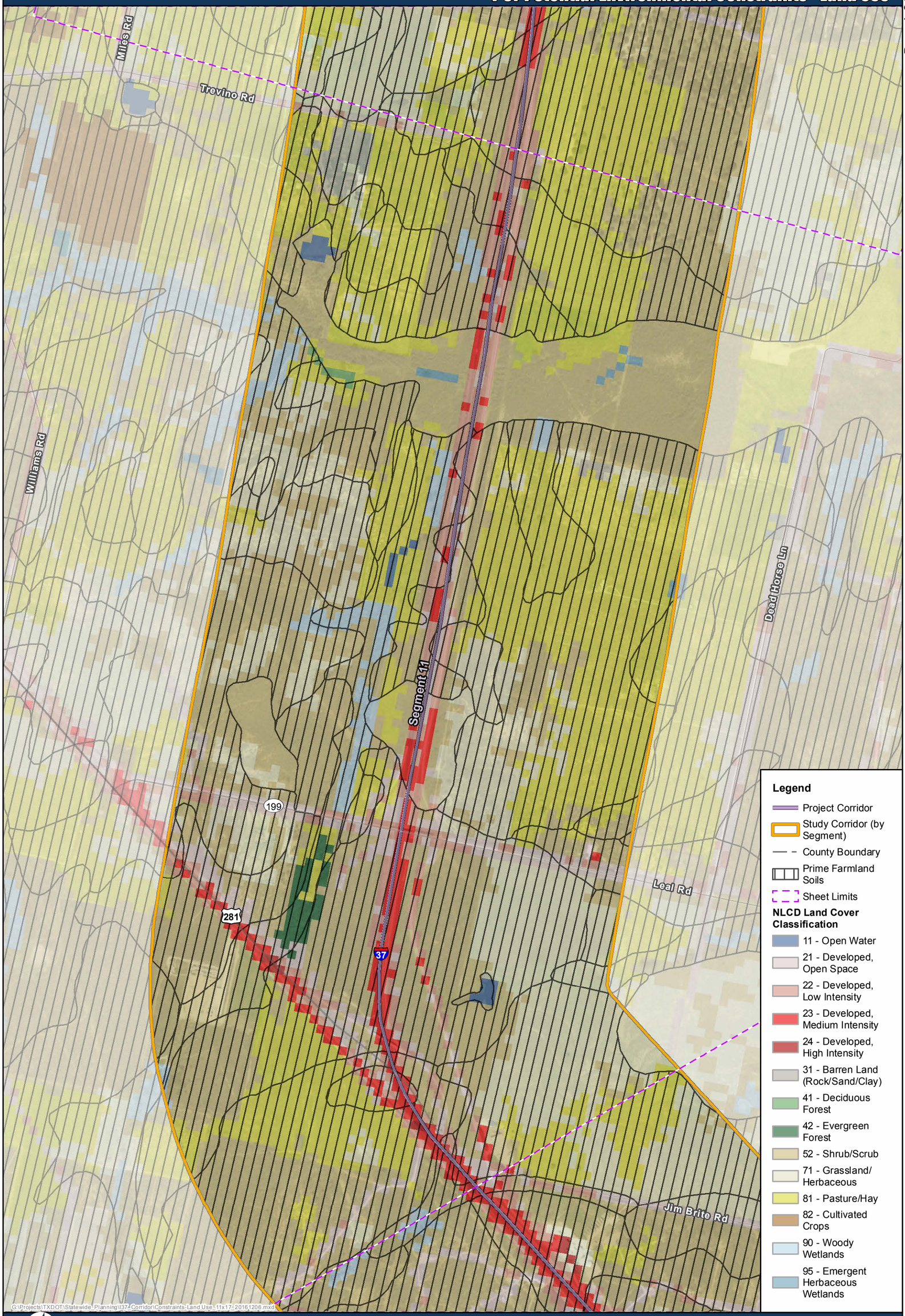

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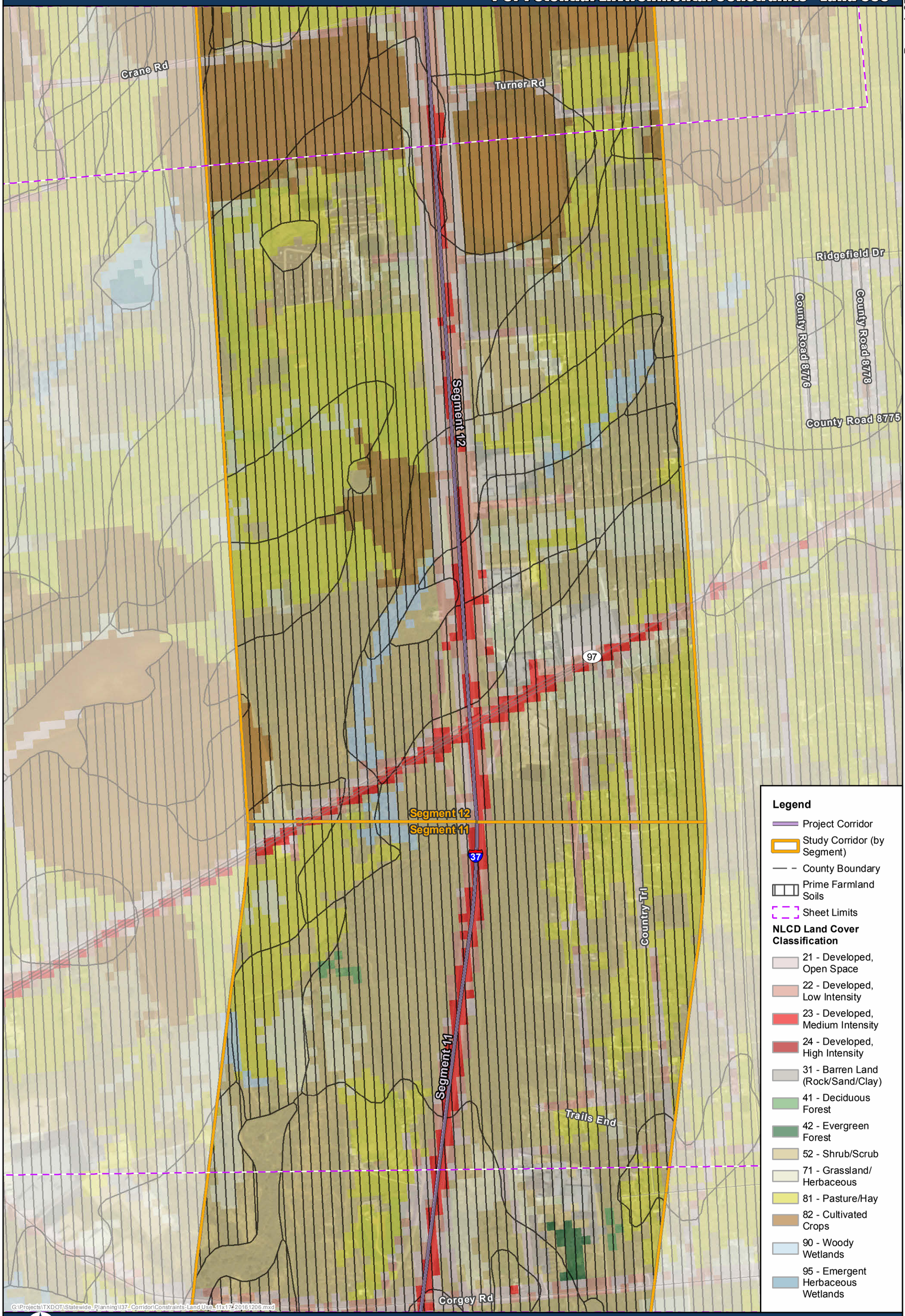

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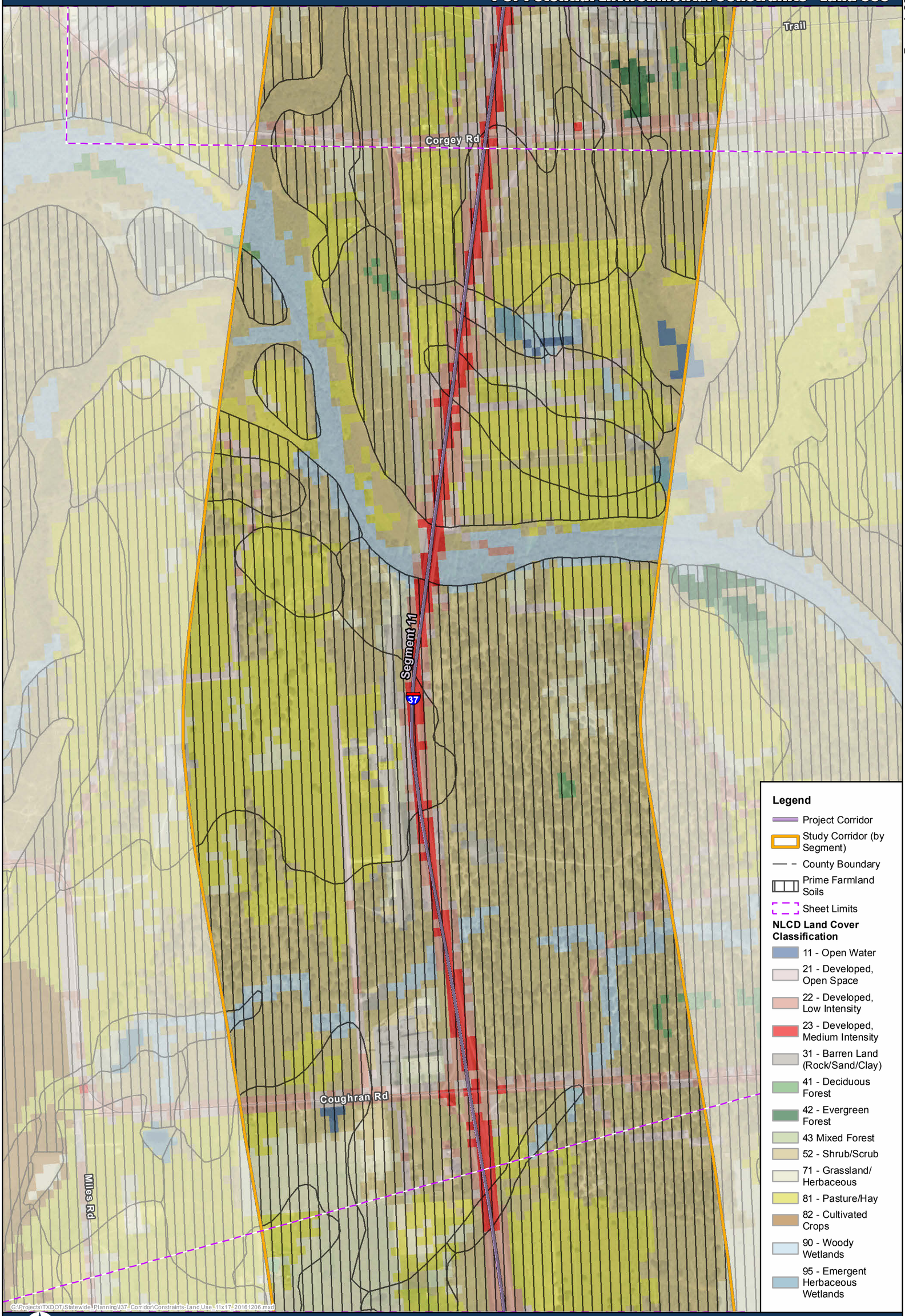

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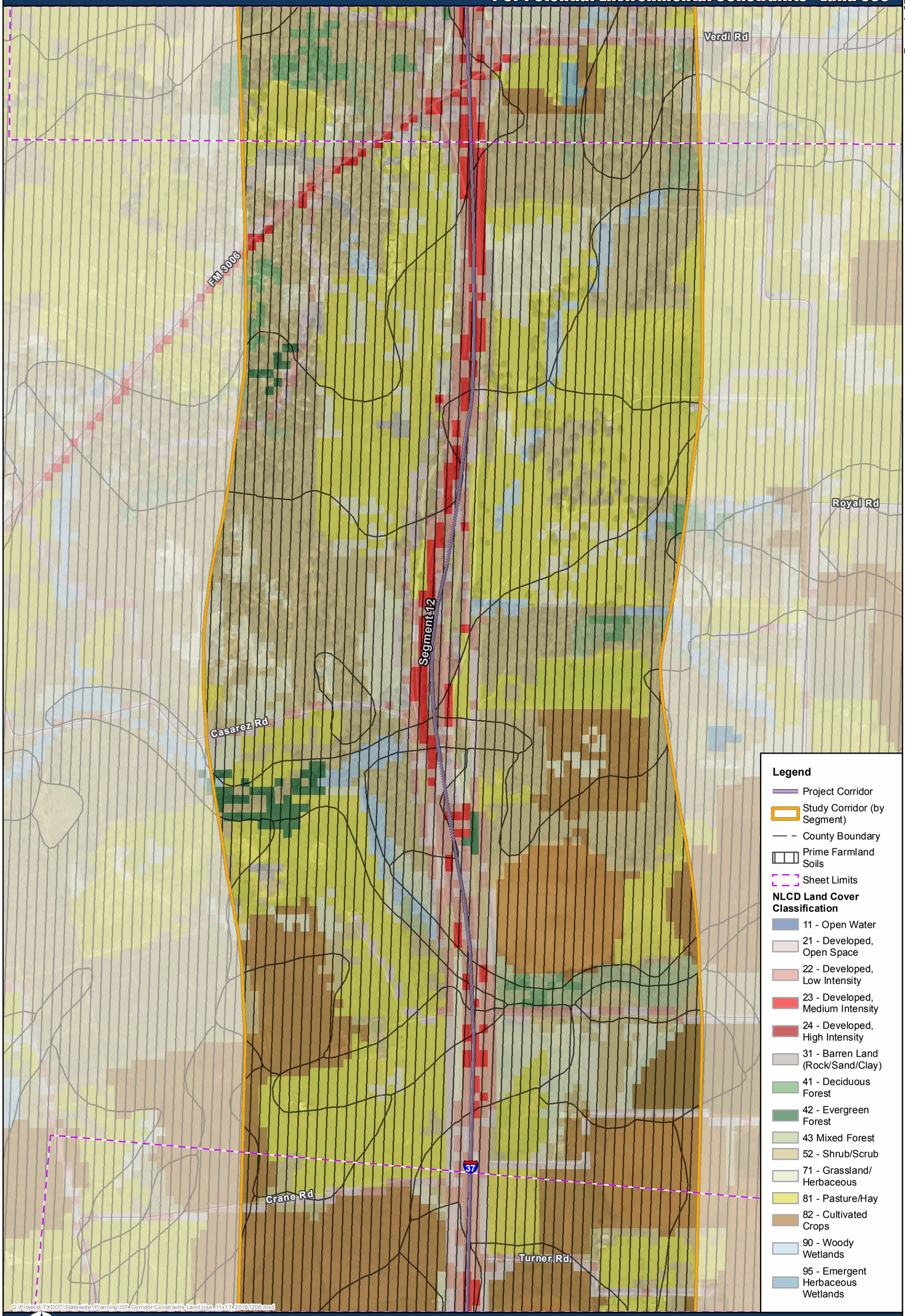

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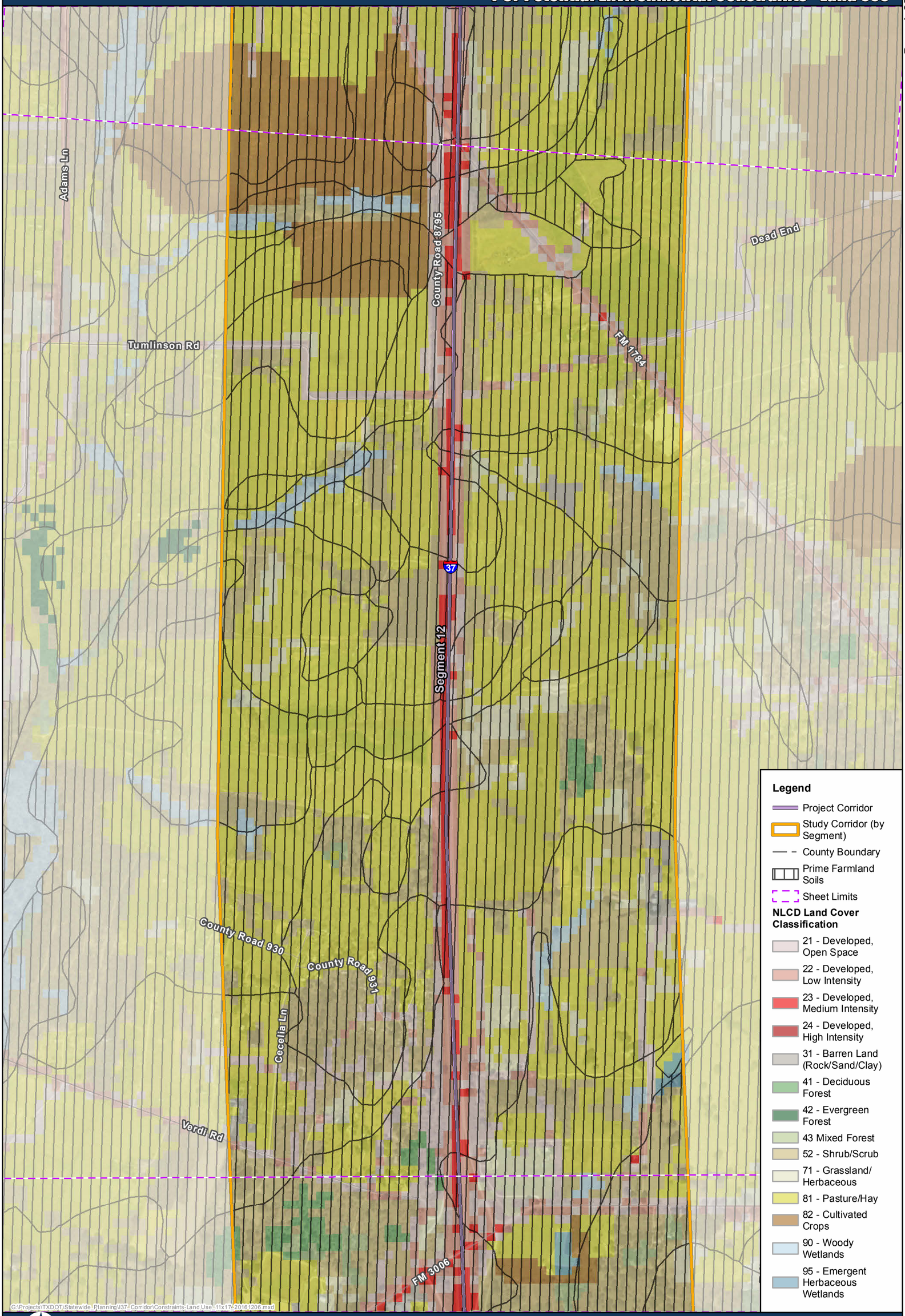

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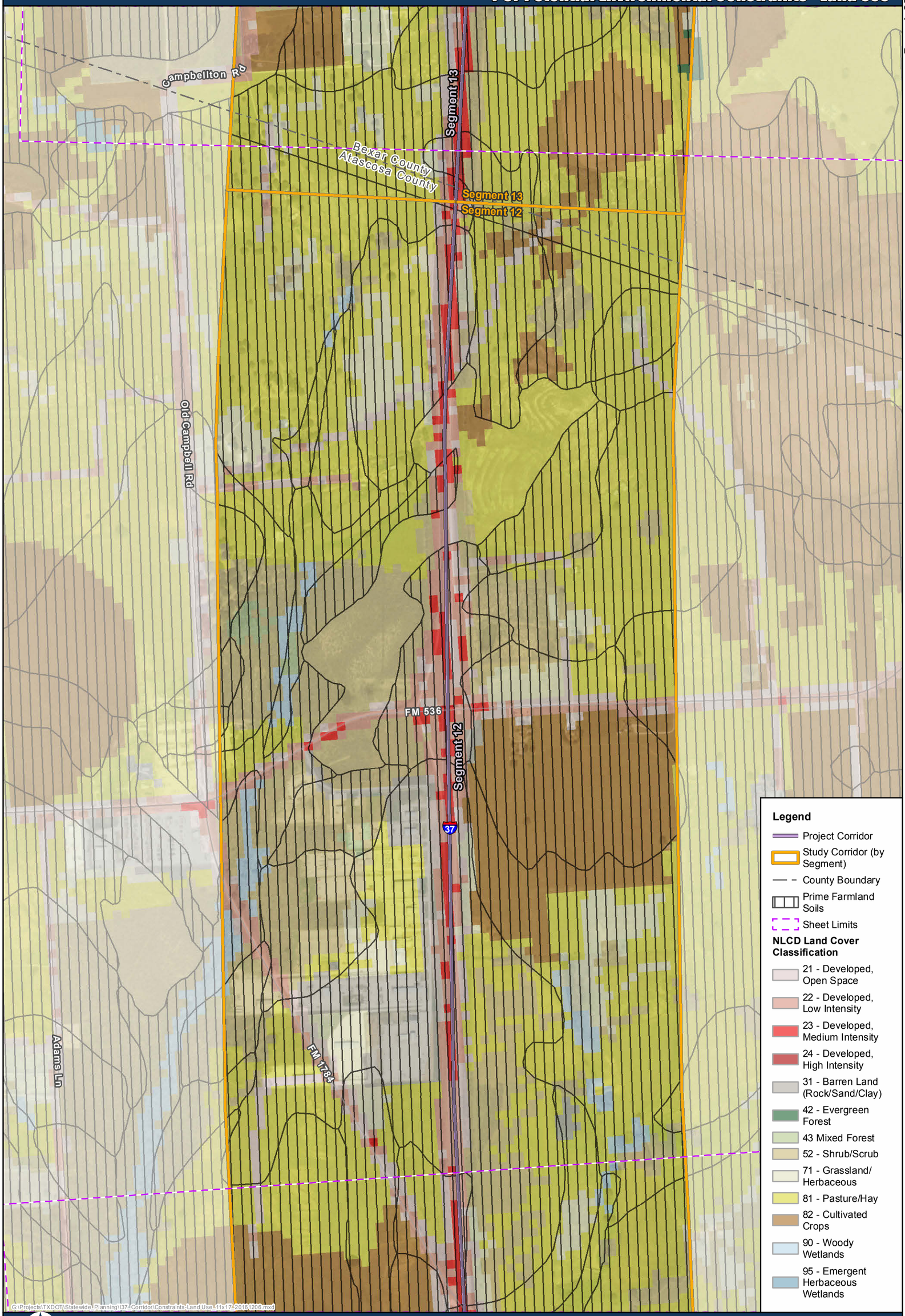

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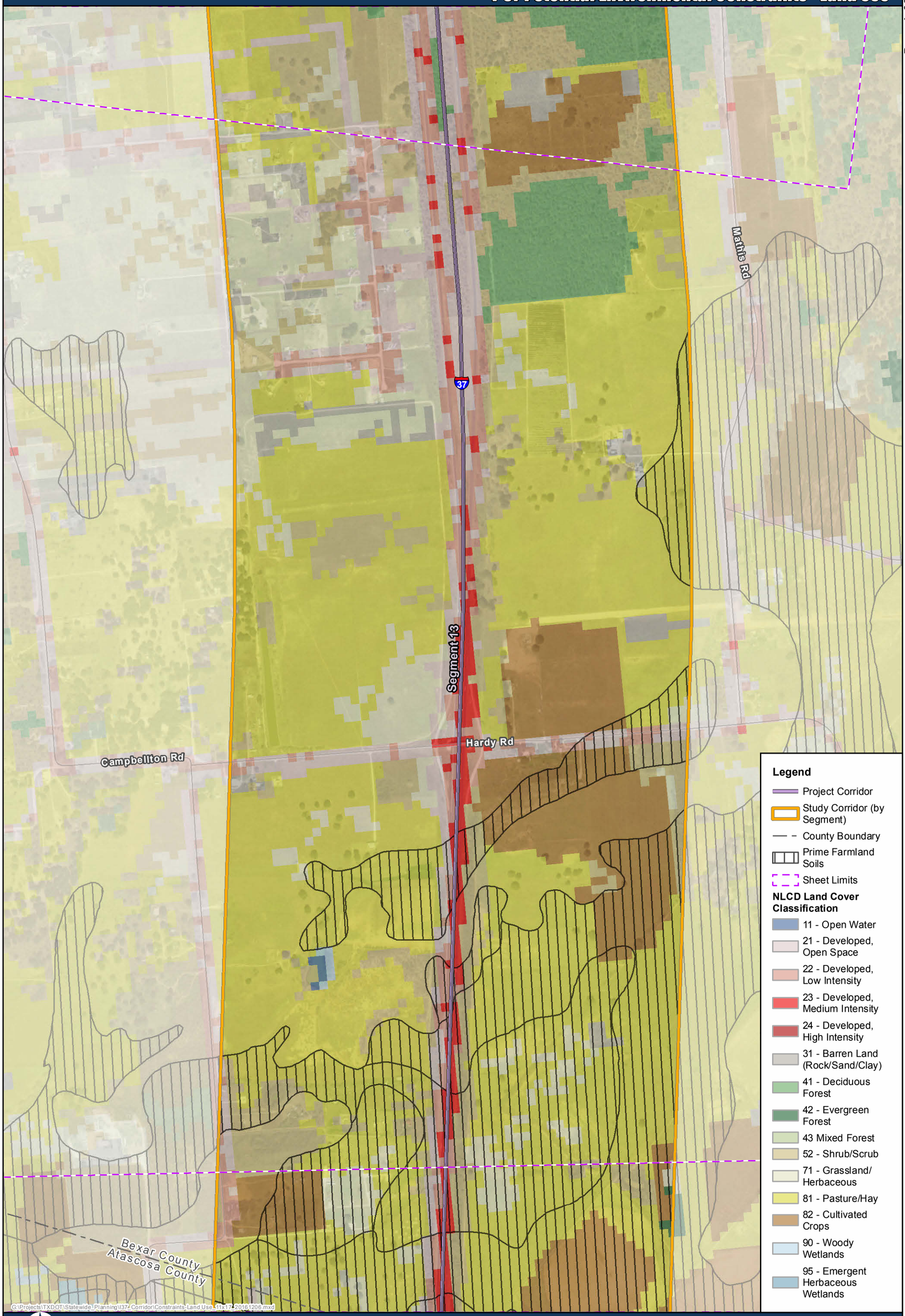

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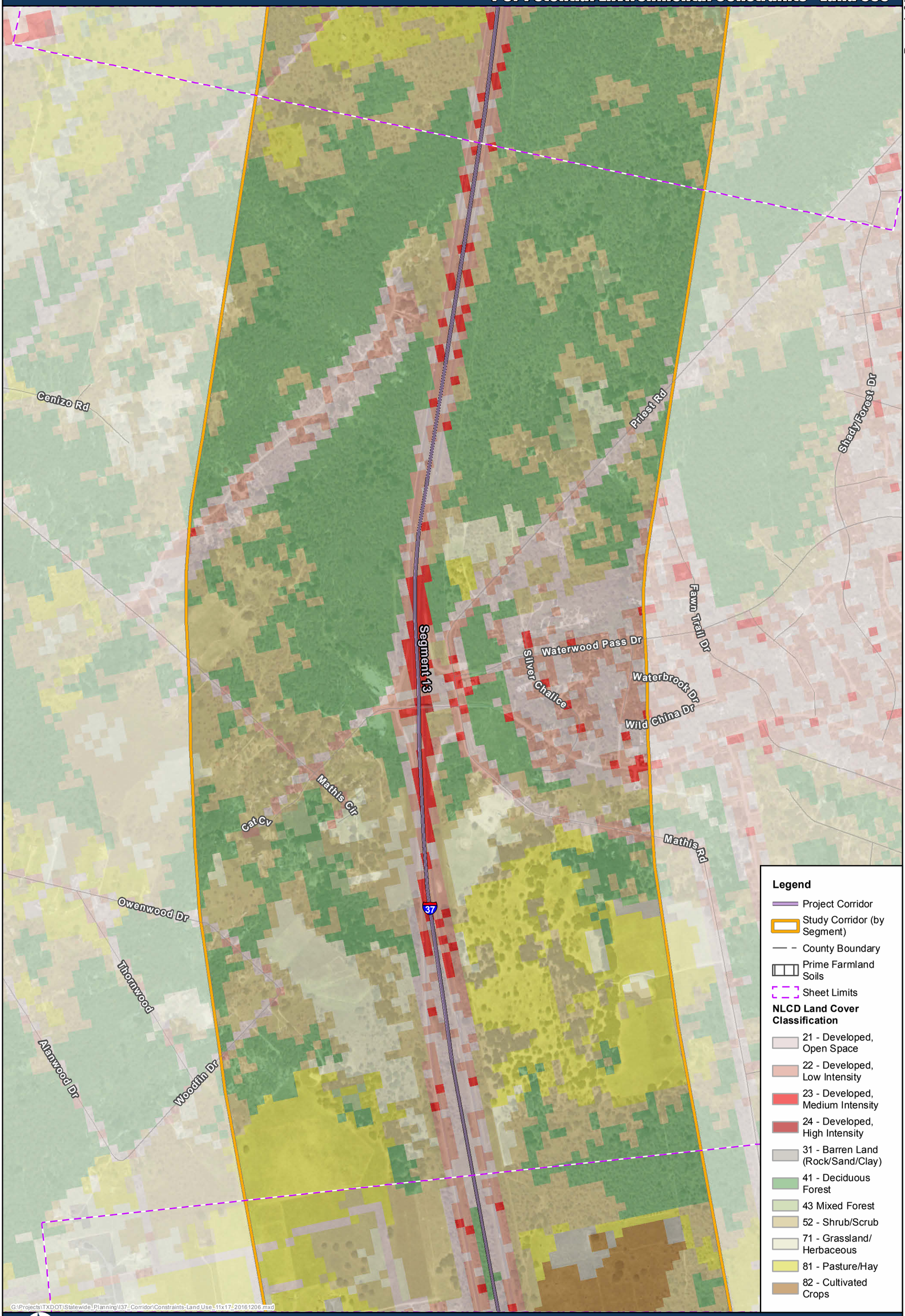

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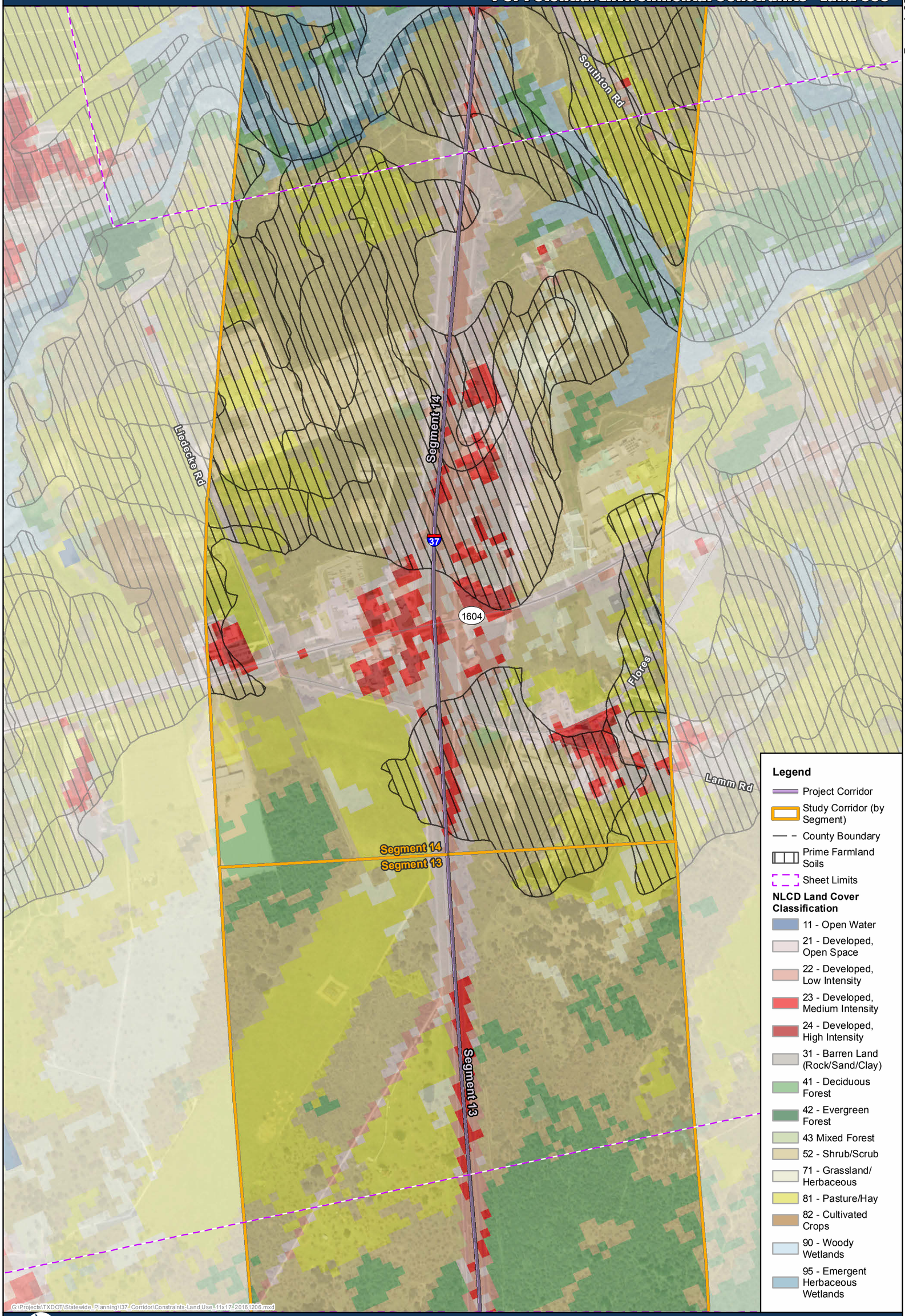

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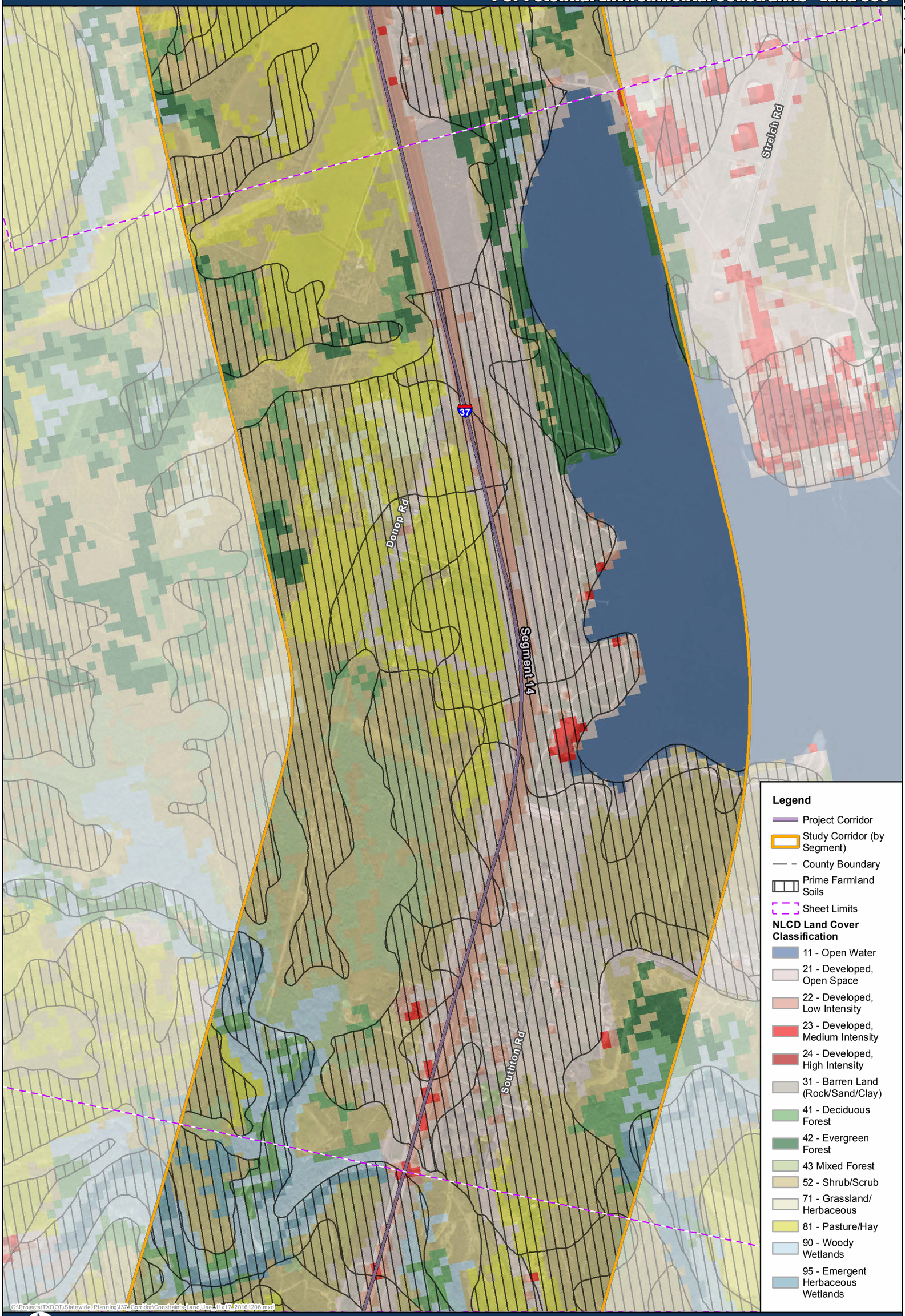

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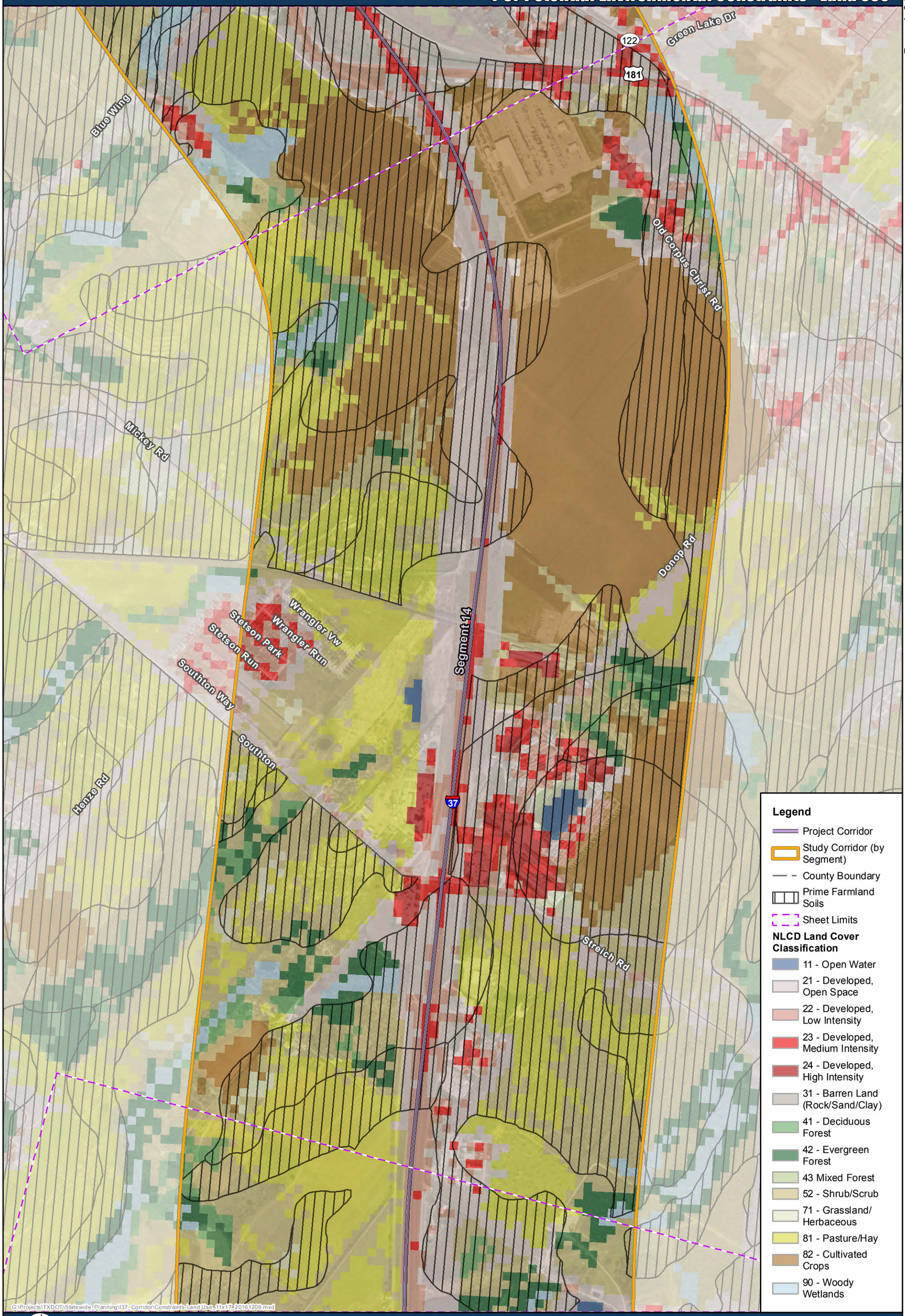

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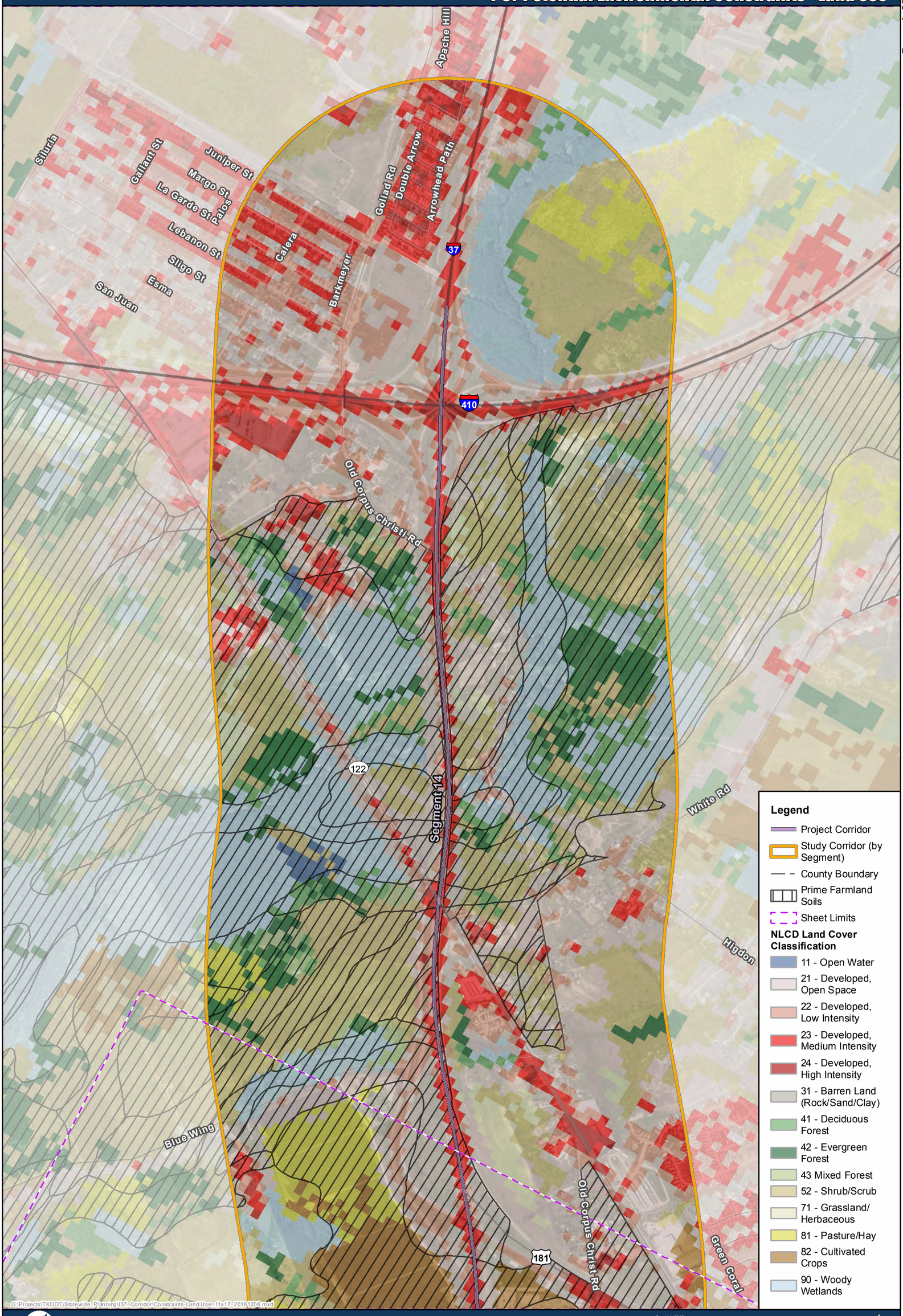

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APPENDIX B

STAKEHOLDER OUTREACH

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Amee	Serna	General Services Administration	Federal Courthouse		1131 North Shoreline Blvd.	Corpus Christi	TX	78401
William	Mayness		U.S. Coast Guard		555 N Caranacuha	Corpus Christi	TX	70408
Dawn	Gardiner	Corpus Christi Ecol. Services Office	U.S. Fish and Wildlife Service		4444 Corona Drive	Corpus Christi	TX	78411
Jesse	Solis		GLO-Coastal - Tx A&M Corpus Christi		6300 Ocean Drive, NRC Bldg, Ste 2800	Corpus Christi	TX	78412-5847
Susan	Clewis		Texas Commission on Environmental Quality		6300 Ocean Drive, NRC Suite 1200	Corpus Christi	TX	78412
Kendal	Keyes		Texas Parks and Wildlife Department		6300 Ocean Dr #2501	Corpus Christi	TX	78412
John	Buckner	Executive Director	Coastal Bend Council of Governments		2910 Leopard St.	Corpus Christi, TX		78408
Jeffrey	Pollack	Transportation Planning Director	Corpus Christi MPO		602 N. Staples St.	Corpus Christi	TX	78401
Christopher	Boyce	Coordinator	Nueces County Emergency Management		901 Leopard St., Rm 303.05	Corpus Christi	TX	78401
			Nueces County Farm Bureau		643 S. Highway 77	Robstown	Tx	78380
Anita	Eisenhauer	President	Nueces County Historical Commission		11753 Up River Rd	Corpus Christi	TX	78410
Billy	Delgado	Emergency Management Coordinator	City of Corpus Christi		2406 Leopard St., Suite 400	Corpus Christi	TX	78408
Kimberly	Jacobs-Lindsey	BACC Executive Officer	Builders Association Corpus Christi		5325 Yorktown Blvd.	Corpus Christi	TX	78413
Jace	Tunnell	Executive Director Pres.	Coastal Bend Bays Foundation		1231 Agnes St. Ste A-5	Corpus Christi	TX	78401
Paulette	Kluge	CEO	Corpus Christi Convention & Visitors Bureau		101 North Shoreline, Ste 430	Corpus Christi	TX	78401
Carrie	Robertson Meyer	President	North Beach Community Association		PO Box 2361	Corpus Christi	TX	78403
Kresten	Cook	Interim President & CEO	United Corpus Christi Chamber of Commerce		602 N. Staples St., Ste 150	Corpus Christi	TX	78401
Ken	Schrom	President	Corpus Christi Hooks Baseball		PO Box H	Corpus Christi	TX	78469
Gary	Allsup	CEO	Corpus Christi Housing Authority		3701 Ayers	Corpus Christi	TX	78415
Roland	Hernandez	Superintendent of Schools	Corpus Christi ISD		801 Leopard St.	Corpus Christi	TX	78401
Iain	Vasey	President/CEO	Corpus Christi Regional E.D.C.		800 N. Shoreline Blvd Ste 1300 South	Corpus Christi	TX	78401
Jorge	Cruz-Aedo	CEO	Corpus Christi Regional Transportation Authority		602 N. Staples St.	Corpus Christi	TX	78401
Terry	Sweeney	Executive Director	Downtown Management District		223 N. Chaparral St	Corpus Christi	TX	78401
Rocco	Montesano		Lexington Museum		2914 N Shoreline	Corpus Christi	TX	78402
Terry			NAACP		4337 St. George Dr.	Corpus Christi	TX	78413
Rudy	Cantu		NCCAA		101 SPID	Corpus Christi	TX	78405
John	LaRue	Executive Director	Port of Corpus Christi Authority		P.O. Box 1541	Corpus Christi	TX	78403
Lois	Huff	Chair	Sierra Club - Coastal Bend Group		PO Box 3512	Corpus Christi	TX	78404
Tom	Schmid	Executive Director	Texas State Aquarium		2710 N. Shoreline Blvd.	Corpus Christi	TX	78402
Foster	Edwards	Executive Director	San Patricio County EDC		P.O. Box 238	Gregory	TX	78359
William	Zagorski	San Patricio County Emergency Management			313 North Rachal	Sinton	TX	78387
Randy	Wright	City Manager	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Colette	Walls	CEO President	Portland Chamber of Commerce		1512 Wildcat Dr.	Portland	TX	78374
Benny	Hernandez	Superintendent of Schools	Mathis ISD		602 E San Patricio Ave	Mathis	TX	78368
Doug	Dowler	Economic Development Director	City of Mathis		111 E. San Patricio Avenue	Mathis	TX	78368

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Judge Janis	Jack		U.S. Southern District Court		1133 N. Shoreline Blvd., Rm 321	Corpus Christi	TX	78401
Blake	Farenthold	U.S. House District 27	U.S. House of Representatives		101 N. Shoreline Dr. Ste 300	Corpus Christi	TX	78401
Filemon	Vela	U.S. House District 34	U.S. House of Representatives		333 Ebony Ave.	Brownsville	TX	78520
Abel	Herrero	House District 34	Texas House of Representatives		606 N. Carancahua, Suite 103A	Corpus Christi	TX	78401
J.M.	Lozano	House District 43	Texas House of Representatives		635 King Ave	Kingsville	TX	78363
Todd	Hunter	House District 32	Texas House of Representatives		P.O. Box 2910	Austin	TX	78768
Juan	Hinojosa	Senate District 20 ATTN: Sylvia Ramirez	Texas State Senate		2820 S. Padre Island Dr. #291	Corpus Christi	TX	78415
Lois	Kolkhorst	Senate District 18	Texas State Senate		PO Box 12068 Capitol Station	Austin	TX	78711
Loyd	Neal	Nueces County Judge	Nueces County		901 Leopard Street, Room 303	Corpus Christi	TX	78401
Mike	Pusley	Commissioner	Nueces County - Precinct 1		901 Leopard St., Rm 303.05	Corpus Christi	TX	78401
Joe	Gonzalez	Commissioner	Nueces County - Precinct 2		901 Leopard, Room 303.07	Corpus Christi	TX	78401
John	Marez	Commissioner	Nueces County - Precinct 3		901 Leopard, Room 303.09	Corpus Christi	TX	78401
Brent	Chesney	Commissioner	Nueces County - Precinct 4		901 Leopard, Room 303.11	Corpus Christi	TX	78401
Joe	McComb	Mayor	City of Corpus Christi		PO Box 9277	Corpus Christi	TX	78469-9277
Michael	Hunter	Council at Large	City of Corpus Christi		PO Box 9277	Corpus Christi	TX	78469-9277
Paulette	Guajardo	Council at Large	City of Corpus Christi		1201 Leopard St	Corpus Christi	TX	78469
Carolyn	Vaughn	Council Member, District 1	City of Corpus Christi		PO Box 9277	Corpus Christi	TX	78469-9277
Ben	Molina	Council Member, District 2	City of Corpus Christi		1201 Leopard St	Corpus Christi	TX	78469
Lucy	Rubio	Council Member, District 3	City of Corpus Christi		PO Box 9277	Corpus Christi	TX	78469-9277
Greg	Smith	Council Member, District 4	City of Corpus Christi		1201 Leopard St	Corpus Christi	TX	78469
Rudy	Garza, Jr.	Council Member, District 5	City of Corpus Christi		PO Box 9277	Corpus Christi	TX	78469-9277
Nina	Trevino	Commissioner	San Patricio County - Precinct 1		P. O. Box 1132	Sinton	TX	78387
Fred	Nardini	Commissioner	San Patricio County - Precinct 2 (Portland)		900 Austin Street	Portland	TX	78374
Alma V.	Moreno	Commissioner	San Patricio County - Precinct 3		P. O. Box 1667	Odem	Tx	78370
Howard	Gillespie	Commissioner	San Patricio County - Precinct 4 (Aransas Pass)		3141 FM 3512	Aransas Pass	TX	78336
Terry	Simpson	County Judge	San Patricio County		400 W. Sinton, Ste 109	Sinton	TX	78387
David	Krebs	Mayor of Portland	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Ron	Jorgensen	Council Member	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Cathy	Skurow	Council Member	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Bill	Wilson II	Council Member	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Nathan	Taggart	Council Member	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Gary	Moore Sr.	Council Member	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
John	Green	Mayor Pro Tem	City of Portland		1900 Billy G. Webb Dr. Portland City Hall	Portland	TX	78374
Abel	Trejo	Councilman	City of Mathis - Council Place 2		411 E San Patricio Ave	Mathis	TX	78368
Sandra Daniel	Quinones	Councilwoman	City of Mathis - Council Place 1		411 E San Patricio Ave	Mathis	TX	78368
Eufema M	Nieto	Councilwoman	City of Mathis - Council Place 3		411 E San Patricio Ave	Mathis	TX	78368
Rosalinda	Pena	Councilwoman	City of Mathis - Council Place 4		411 E San Patricio Ave	Mathis	TX	78368
David	Garcia	Mayor Pro Tem, Councilman	City of Mathis - Council Place 5		411 E San Patricio Ave	Mathis	TX	78368
Ciri	Villarreal	Mayor	Ciy of Mathis		411 E San Patricio Ave	Mathis	TX	78368

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Zuleika K.	Morales-Romero	HUD San Antonio Field Office	U.S. Dept of Housing and Urban Development		615 East Houston St. Suite 347	San Antonio	TX	78205
			Live Oak County Farm Bureau		3460 Highway 281	George West	TX	78022
Mary	Springs	Superintendent of Schools	Three Rivers ISD		351 South School Rd.	Three Rivers	TX	78071
Arnold	Saenz	City Administrator	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Ty	Sparks	Superintendent of Schools	George West ISD		913 Houston St.	George West	TX	78022
			Atascosa County Farm Bureau		910 Oak St.	Jourdanton	TX	78026
Raquel	Navarro	Executive Assistant	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Diane	Rath	Executive Director	Alamo Area Council of Governments		8700 Tesoro Drive, Suite 160	San Antonio	TX	78217-6208
Isidro	Martinez	Director	Alamo Area MPO		825 S. St. Mary's Street	San Antonio	TX	78205
			Bexar County Farm Bureau		7322 NE Loop 410	San Antonio	TX	78219
David	Smith	Executive Director	Alamo Regional Mobility Authority		100 Dolorosa	San Antonio	TX	78205
Sheryl	Sculley	City Manager	City of San Antonio		P.O. Box 839966	San Antonio	TX	78283
Steve	Louis	President	Greater San Antonio Builders Association		3625 Paesanos Pkwy # 100	San Antonio	TX	78231
Richard	Perez	President and CEO	San Antonio Chamber of Commerce		602 E. Commerce Street	San Antonio	TX	78205
Ramiro A.	Cavazos	President and CEO	San Antonio Hispanic Chamber of Commerce		200 East Grayson St # 203	San Antonio	TX	78215
Larry	Treviño	Emergency Mgmt Coordinator	San Antonio Office of Emergency Management		8130 Inner Circle	San Antonio	TX	78235

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Vicente	Gonzalez	U.S. House District 15	U.S. House of Representatives		2864 West Trenton Rd	Edinburg	TX	78539
Henry	Cuellar	U.S. House District 28	U.S. House of Representatives		615 E. Houston St. Suite 563	San Antonio	TX	78205
Judith	Zaffirini	Senate District 21	Texas State Senate		12702 Toepperwein Rd. #214	San Antonio	TX	78233
Carlos	Uresti	Senate District 19	Texas State Senate		3315 Sidney Brooks Drive, Suite 100	San Antonio	TX	78235
Jim	Huff	County Judge	Live Oak County		P.O. Box 487	George West	TX	78022
Richard	Lee	Commissioner	Live Oak County - Precinct 1		P.O. Box 487	George West	TX	78022
Donna	Mills	Commissioner	Live Oak County - Precinct 2		P.O. Box 487	George West	TX	78022
Willie	James	Commissioner	Live Oak County - Precinct 3		P.O. Box 487	George West	TX	78022
Emilio	Garza	Commissioner	Live Oak County - Precinct 4		P.O. Box 487	George West	TX	78022
Sam	Garcia	Mayor	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Tommy Mack	House	Alder person	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Patsy	Roberts	Alder person	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Murrell	Foster	Alder person	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Sally	Rodgriguez	Mayor Pro Tem	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Tim	Stroleny	Alder person	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Rey	Trevino	Alder person	City of Three Rivers		P.O. Box 1648	Three Rivers	TX	78071
Robert L.	Hurley	County Judge	Atascosa County		1 Courthouse Circle Drive	Jourdanton	TX	78026
Lon "Lonnie"	Gillespie	Commissioner	Atascosa County - Precinct 1		1 Courthouse Circle Drive	Jourdanton	TX	78026
William (Bill)	Torans	Commissioner	Atascosa County - Precinct 2		1 Courthouse Circle Drive	Jourdanton	TX	78026
Freddie	Ogden	Commissioner	Atascosa County - Precinct 3		1 Courthouse Circle Drive	Jourdanton	TX	78026
Bill	Carroll	Commissioner	Atascosa County - Precinct 4		1 Courthouse Circle Drive	Jourdanton	TX	78026
Clinton J.	Powell	Mayor	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Douglas	Best	Council Member, District 1	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Kenneth A.	Hernandez	Council Member, District 2	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Diana K.	Prasifka	Council Member, District 3	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Eliseo	Flores	Council Member, District 4	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Robert Earl	Wood	Council Member, District 5	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Travis	Hall Jr.	Council Member, District 6	City of Pleasanton		108 Second Street	Pleasanton	TX	78064
Nelson W.	Wolff	County Judge	Bexar County		Paul Elizondo Tower - 1010 W. Nueva, 10th Floor	San Antonio	TX	78205
Sergio "Chico"	Rodriguez	Commissioner	Bexar County - Precinct 1		Paul Elizondo Tower - 1010 W. Nueva, 10th Floor	San Antonio	TX	78205
Paul	Elizondo	Commissioner	Bexar County - Precinct 2		Paul Elizondo Tower - 1010 W. Nueva, 10th Floor	San Antonio	TX	78205
Kevin	Wolff	Commissioner	Bexar County - Precinct 3		Paul Elizondo Tower - 1010 W. Nueva, 10th Floor	San Antonio	TX	78205
Tommy	Calvert	Commissioner	Bexar County - Precinct 4		Paul Elizondo Tower - 1010 W. Nueva, 10th Floor	San Antonio	TX	78205
Robert	Trevino	Council Member, District 1	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Cruz	Shaw	Council Member, District 2	City of San Antonio		PO Box 839966	San Antonio	Tx	78283

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Rebecca	Viagran	Council Member, District 3	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Rey	Saldaña	Council Member, District 4	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Shirley	Gonzales	Council Member, District 5	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Greg	Brockhouse	Council Member, District 6	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Ana	Sandoval	Council Member, District 7	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Manny	Pelaez	Council Member, District 8	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Ron	Nirenberg	Mayor	City of San Antonio		PO Box 839966	San Antonio	TX	78283
John	Courage	Council Member, District 9	City of San Antonio		PO Box 839966	San Antonio	TX	78283
Clayton	Perry	Council Member, District 10	City of San Antonio		PO Box 839966	San Antonio	TX	78283

First Name	Last Name	Title 2	Organization	Phone	Address	City	State	Zip
Tony	Robinson	Regional Administrator, Region 6	Federal Emergency Management Agency		FRC 800 North Loop 288	Denton	TX	76209-3698
Greg	Punske	District Engineer	Federal Highway Administration		300 E. 8th St.	Austin	TX	78701-3233
Jayson	Hodson		U.S. Army Corps of Engineers		2000 Ft. Point Rd	Galveston	TX	77554
Carl	Anderson		U.S. Army Corps of Engineers Galveston District		P.O. Box 1229	Galveston	TX	77553-1229
Salvador	Salinas	State Conservationist	U.S. Department of Agriculture, NRCS		101 South Main	Temple	TX	76501
Kimeka	Price		U.S. Environmental Protection Agency Region 6		1445 Ross Ave, Suite 1200	Dallas	TX	75202
Melissa	Porter	Director	Texas Coastal Advisory Committee		Attn: Amy Nunez Texas GLO PO Box 12873	Austin	TX	78711-2873
Richard A.	Hyde	Executive Director	Texas Commission on Environmental Quality		PO Box 13087 MC 109	Austin	TX	78711-3087
Hal	Croft	Asset Management Deputy Commissioner	Texas General Land Office		Attn: Amy Nunez Texas GLO PO Box 12873	Austin	TX	78711-2873
Mark	Wolfe	Executive Director	Texas Historical Commission		PO Box 12276	Austin	TX	78711-2276
Christi	Craddick	Chairman	Texas Railroad Commission		P.O. Box 12967	Austin	TX	78711-2967
Jeff	Walker	Executive Administrator	Texas Water Development Board		1700 North Congress Avenue	Austin	TX	78701
Todd	Staples	President	Texas Oil and Gas Association		304 W. 13th St.	Austin	TX	78701
John	Esparza		Texas Trucking Association		700 E. 11th St.	Austin	TX	78701
Laura	Zebehazy	Wildlife Habitat Assessment Program	Texas Parks and Wildlife Dept.		4100 Smith School Rd	Austin	TX	78744

WEBINAR #1

TEXAS DEPARTMENT OF TRANSPORTATION

Webinar Instructions

- All participants are muted.
- To maximize your screen, use the full-screen icon on the top right.
- To ask a question, select the "chat" function at the top of the screen and type in a question.
- We will read all questions and answer them at the end of the presentation.

TEXAS DEPARTMENT OF TRANSPORTATION

INTERSTATE 37: I-410 TO I-69E

I-37 Corridor Planning Study

August 24, 2017

AGENDA

- Safety Moment
- Introductions
- Overview of I-37 Corridor
- Performance-Based Process and Benefits
- I-37 Corridor Evaluation
- Next Steps
- How to provide additional feedback

I-37 Corridor Overview

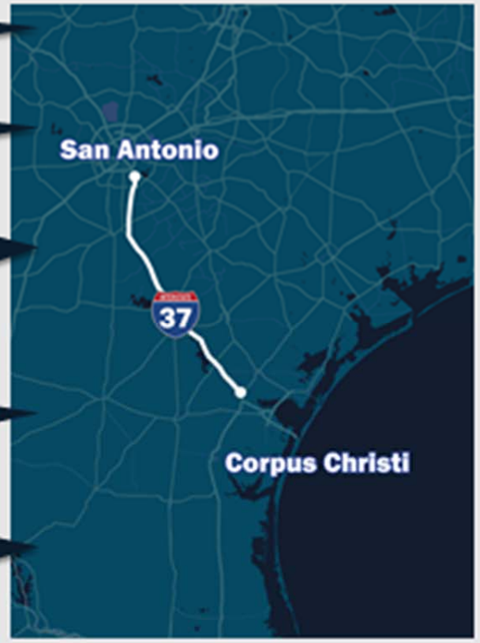
Generally 2 lanes in each direction

Part of Primary Freight Network

Daily traffic volumes 20,000 – 30,000 vehicles per day along most of corridor; 60,000 – 80,000 at south and north ends

Typically 20% - 25% trucks along corridor

Corridor broken into 14 segments for evaluation



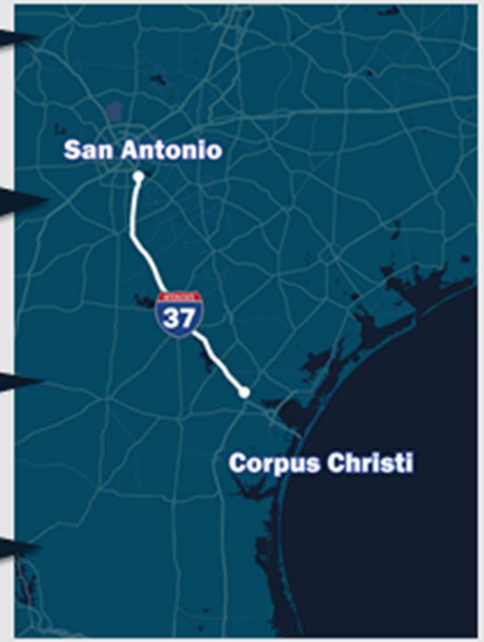
TxDOT Performance-Based Corridor Evaluation

Evaluation based on how well existing corridor is performing

Performance is measured based on existing data collected by TxDOT

Considers risks associated with not addressing infrastructure needs

Helps to determine where improvements should be prioritized



Corridor Evaluation Overview

Assess Needs for Improvement → **Identify** Potential Solutions → **Evaluate** and Prioritize Solutions → **Recommend** Solutions

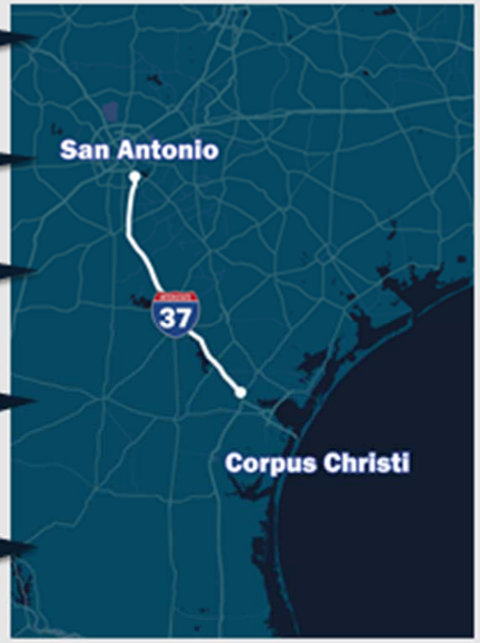
- End result: Prioritized list of improvement projects at various locations on I-37 corridor
- Same approach can be used on other corridors in Texas
- Can integrate with existing project development process

How are We Measuring the Performance of the I-37 Corridor?

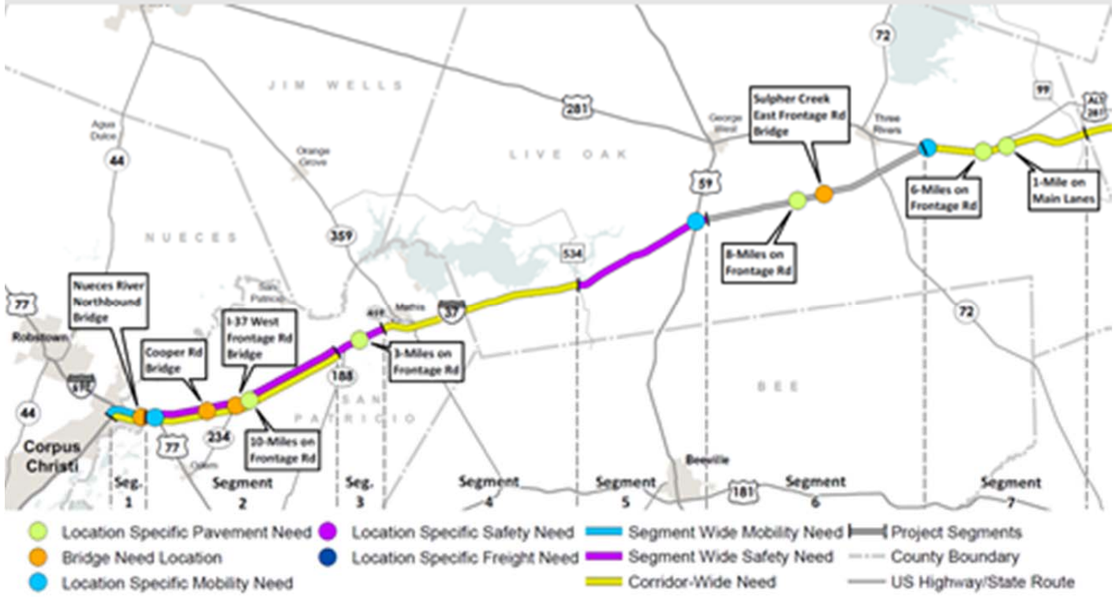
Performance Area	What is being measured?
Pavement	Condition and smoothness of pavement
Bridge	Surface condition as well as structural soundness
Mobility	Congestion including traffic volume and the time it takes to travel from one end to another
Safety	Rate of crashes that occur
Freight	Time it takes for trucks to travel from one end to another and restrictions along the way
Corridor Wide	Parking limitations, access issues, regional travel demand, frontage road connections

Key Take-Aways from I-37 Corridor Evaluation

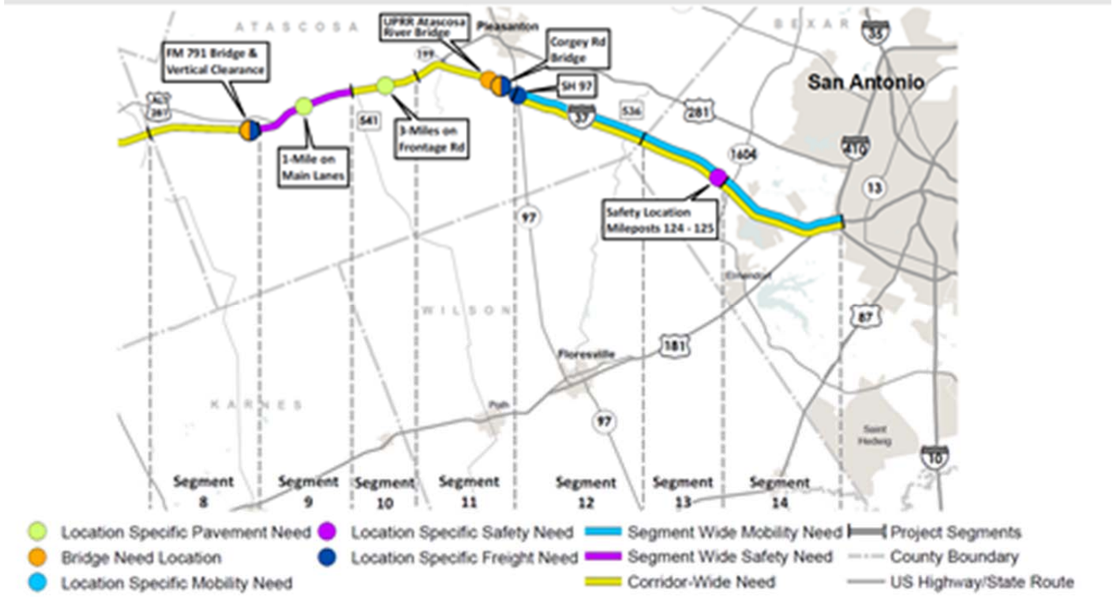
- Bridges and pavement generally in "fair" or "good" condition
- Traffic congestion at north and south ends of corridor
- No significant freight restrictions
- Crash rates above state-wide average in a few locations
- Man-made ramps and frontage road connections may be concerns



I-37 Strategic Investment Areas – Nueces, San Patricio, Live Oak

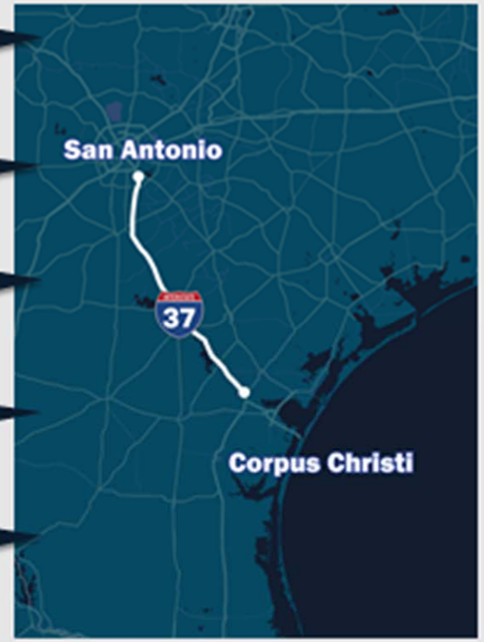


I-37 Strategic Investment Areas – Atascosa and Bexar



Example Solutions

- Construct additional travel lanes
- Improve interchanges
- Make safety improvements
- Increase clearance at bridges
- Add ramps and frontage roads



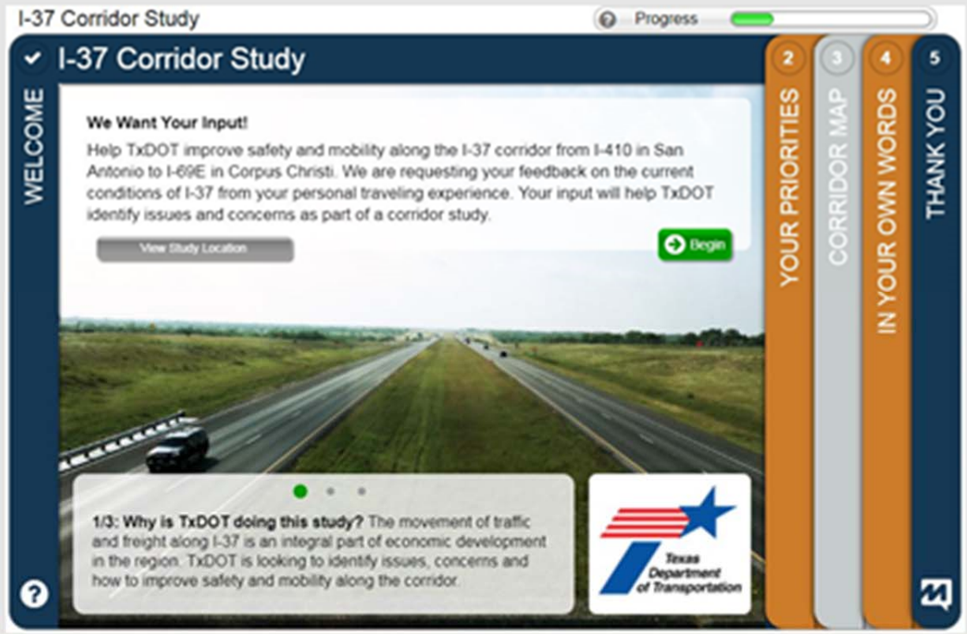
11

Next Steps

- August: Collect stakeholder input at webinar #1
- September: Consider stakeholder comments and create prioritized project list that address needs in problem areas
- October 4, 2017: Present prioritized project list at webinar #2
- October: Incorporate stakeholder input and prepare final list of prioritized projects

12

Online Survey – MetroQuest – Welcome



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You Searched: I-37 Corridor study

Search Again

Results 1 - 3 of 3 for I-37 Corridor study.

I-37 Corridor

...**I-37 Corridor** Background **I-37** provides an important connection between I-35 and the Texas Gulf Coast and it is.....initiated a corridor **study** to investigate existing and future conditions and needs along the **I-37** corridor....

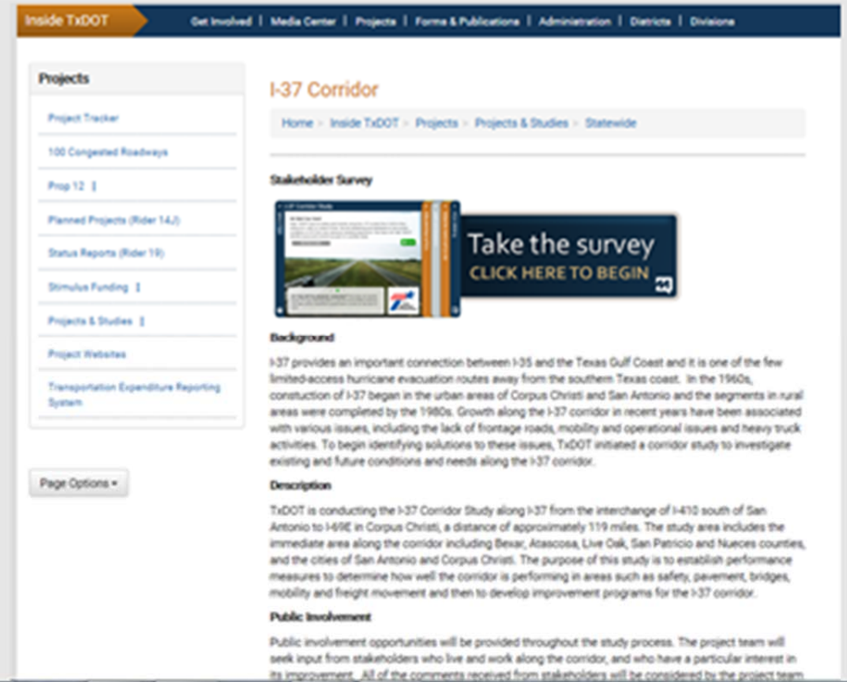
Mar 20, 2017

Project Studies: Statewide

...Project **Studies**: Statewide Before a project is built, a **study** must be done to determine if it will fill a.....East Texas I-20 East Texas **Corridor** Evaluation of current safety and capacity needs from Dallas to the Louisiana...

May 24, 2017

Survey Link on I-37 Project Page



Questions from Webinar Participants

- What considerations are being given to environmental impacts?
- There has been interest in bridge safety nationwide. Are most of the bridges on I-37 in good shape? Or is this what the study is including?
- Will all of the Q&A be typed up on the I-37 corridor page?
- Are there specific projects already set?
- Do we give feedback via survey or direct email?
- The Nueces River bridge has flooding issues. Are we raising the bridge?
- Can we access information as to whether segment data reflects local input and concerns?

Questions are answered on webinar recording

Additional Information and Feedback

TxDOT
Cary.Karnstadt@txdot.gov

MetroQuest Survey
www.txdot.gov and search for "I-37 Corridor Study"
Survey closes September 16, 2017

Next Webinar
October 4

Slide 1

Before we start the webinar today, I want to remind you of a few "housekeeping" items:

- All participants are muted.
- To maximize your screen, use the full-screen icon on the top right.
- To ask a question, select the "chat" function at the top of the screen and type in a question.
- We will read all questions and answer them at the end of the presentation.

Slide 2

Hello, I'm Roger Beall, Corridor Planning Director at TxDOT, and I'd like to welcome you to this webinar on the I-37 Corridor Study Project. Your feedback is important to us and we appreciate your taking the time to participate today. You'll have an opportunity to give us feedback on the phone today and also in an online survey.

Slide 3

Before we get started today, I would like to take a minute to focus on safety. Here at TxDOT we strive to put safety at the forefront of all we do which is why we start every meeting with a Safety Moment. Beginning September 1, the no texting while driving law takes effect statewide. Many cities have already passed laws and ordinances directed at prohibiting the use of hand-held electronic devices, but this will be the first statewide ban on the use of hand held phones to read, write, or send an electronic message. Other uses such as internet navigation or music programs are allowed. Texting while driving impacts your driving in three ways: cognitive – distractions that take your mind off the task of driving; visual - distractions that take your eyes off the road; and manual – distractions that take your hands off the wheel. So, don't text and drive. It's the law and your life and those around lives depend on it.

On today's webinar, we have representatives from both TxDOT Districts who have been engaged throughout the process of this study, and now I would like to ask our project team to introduce themselves so you know who will be speaking to you today. (Name, Agency/Company, Role)…..

The I-37 corridor provides an important connection between San Antonio and the Texas Gulf Coast, and serves as one of the few limited-access hurricane evacuation routes off the southern Texas coast.

For these reasons, TxDOT began a corridor study last fall along a 119-mile stretch of I-37 from the interchange of I-37 and I-69E in Corpus Christi to I-410 near San Antonio.

We wanted to investigate existing and future conditions along this portion of I-37 to identify proposed improvements that would address any identified needs and ultimately develop a prioritized list of corridor improvements to meet those needs. I'd like to emphasize that this is a planning study to help prioritize projects for consideration in future TxDOT programs. If any of these recommendations do get funded, they would be subject to further engineering and environmental study.

Today, we're here to provide some background on the I-37 corridor, provide a high-level overview of the study process and results, and discuss the next steps and how you can provide feedback.

Now, I'd like to turn it over to Tyler Besch of AECOM (our consultant on this project), who will explain the I-37 corridor study process and findings thus far.

Slide 4

Thank you Roger, before I get into the details of our analysis I want to orient you to our study area. As Roger mentioned and you can see on your screen, the I-37 corridor connects San Antonio on the north end to Corpus Christi on the south. It has generally two lanes in each direction for its entire length except at the north and south ends where additional lanes are provided. The daily traffic volumes vary between 20,000 and 30,000 vehicles per day throughout, with the exception of the northern and southern ends where the traffic volumes increase to between 60,000 and 80,000 vehicles per day. This corridor is part of the primary freight network across the State of Texas and typically has 20-25% trucks as part of its daily traffic volumes.

For the purposes of our analysis, we segmented the corridor into 14 individual segments of roughly 10 miles each. We report the results of our performance analysis on the basis of these individual segments.

Slide 5

This corridor was evaluated using a performance-based approach that used existing data already collected by TxDOT. No new data was used to determine overall corridor performance.

This process included a risk analysis to identify the potential risks associated with not addressing identified needs. The evaluation results in a determination of where improvements should be made and how those improvements should be prioritized.

Slide 6

This flow chart represents the full process for the I-37 study. We are using a performance-based process to identify areas of need along the corridor that will lead to the development of potential solutions to address those needs.

Once the solutions are developed, we will evaluate them based on how well they improved the overall corridor performance in each of our five performance areas of pavement, bridge, mobility, safety and freight. This evaluation will result in a prioritized list of improvement projects for consideration in future TxDOT programs.

The benefit of using this approach is that it can integrate directly into the existing TXDOT project development process and be used on multiple corridors throughout the state to compare existing performance. This approach also can be tracked over time to see how projects are improving the overall transportation network.

Slide 7

As I mentioned a moment ago, we evaluated five individual performance measures as well as a 'corridor wide' measure along I-37.

- The pavement performance area scored the condition and smoothness of the pavement within each segment.

- The bridge performance area rated the surface condition and structural soundness of every bridge along I-37.
- The mobility performance area scored the levels of congestion and travel time for each segment.
- The safety performance area compared crash rates for each segment to statewide averages for fatal and incapacitating injury crashes.
- The freight performance area identified the travel time and locations of low clearance structures within each segment.
- In addition to these five, we also quantified the I-37 corridor's performance for truck parking, access issues, regional travel demand, and frontage road connections as part of our 'corridor wide' performance area.

Slide 8

The performance analysis concluded that in general the pavement and bridges located in the I-37 corridor are in 'good' or 'fair' condition. There is some traffic congestion near San Antonio and Corpus Christi, and those areas are projected to worsen in the future.

There are no significant freight restrictions but there are a few locations throughout the corridor where the segment level crash rates are higher than the statewide average.

In addition, locations were identified where man-made entry/exit ramps have been made that may be contributing to some safety issues.

Overall, the corridor is operating fairly well with some isolated areas of need. I now will turn it over to Rodney Bragg of AECOM to discuss some specific needs we have identified along I-37 as well as some potential solutions we have developed that may address these needs.

Slide 9 [mention magnifying glass]

Thank you, Tyler**.** To orient you a bit, on the screen you can see segments 1 through 7 that extend from the intersection of I-37 and I-69 near Corpus Christi on the left to the intersection of I-37 and County Road 99 near the Live Oak and Atascosa County Line on the right.

The colored lines within each segment represent segment-level needs in specific performance areas. For example, the purple color in Segment 5 near the middle of your screen represents a safety need throughout that entire segment. The colored circles represent location-specific needs such as locations of specific bridges or interchanges that may have an issue like the blue circle in Segment 5, which represents the interchange with US 59 where we have identified some capacity and operational issues through our analysis.

Overall, in this portion of the corridor there are four bridges and several miles of frontage road pavement that we have documented as areas of need in addition to some safety issues in Segments 2, 3, and 5. The segments that show elevated needs for our 'corridor-wide' performance area have deficiencies in frontage road connections or have a high occurrence of man-made ramps**.**

Slide 10

This section of the corridor represents Segments 8 through 14 that extend from the intersection of I-37 and County Road 99 on the left to the intersection of I-37 and I-410 on the right.

In some cases, segments represent multiple need areas for both segment level need as well as location specific needs. As you can see in Segment 8, the FM 791 Bridge has both a bridge deficiency AND freight needs due to low vertical clearance. In addition, Segments 12, 13, and 14 all have multiple needs in mobility, represented as the blue line, and corridor-wide issues represented by the yellow. The mobility needs in this area correspond to increasing traffic volumes as you get closer to San Antonio, and some capacity issues at interchanges, while the corridor-wide issues are associated with lack of frontage road connectivity and man-made ramps.

Slide 11

Once we've completed the needs analysis, we will move forward to identify potential solutions to address those needs. Some example solutions to consider for the needs identified along I-37 could include the construction of additional travel lanes near San Antonio and Corpus Christi, the improvement of some interchanges, spot safety improvements, increased bridge clearances to help fright movements, and the construction of access ramps and frontage roads.

Once fully developed, these solutions will all be evaluated and prioritized based on how well they improve overall corridor performance. The focus of the next webinar will be on the results of that evaluation.

Slide 12

The next steps in our study will be to collect your input and use that information to help inform the development of our solution list. The next webinar is planned for October to present the draft prioritized list of solutions for your consideration. Then we'll be finalizing the list of recommendations and preparing a draft report.

I would like to turn it over to Nancy Gates, the AECOM public involvement lead, to talk about how we are going to solicit your input through our MetroQuest platform…..

Slide 13

Now that you've participated in this webinar, we'd like to get some feedback from you on what you've heard today. We've developed a short survey in a very user-friendly format called MetroQuest. As you see on this screen, this survey walks you through a series of questions that let you rank your priorities, identify issues along the corridor and provide ideas and information about improvement on the I-37 corridor.

Slide 14

To access the MetroQuest survey, please visit the TxDOT website at www.txdot.gov and enter the key words, "I-37 Corridor Study" in the search tab at the top of the page.

Slide 15

Once you press the search tab. a results page will come up. You may have to scroll down to see the results until you see the link titled "1-37 Corridor." Click on this link and it will take you to the project page.

Slide 16

Once on the I-37 Corridor Study project page, you'll find this link to the survey. We will also send you a follow up email with a direct link to the survey. We hope you'll take a few minutes to complete the survey and offer us your valuable feedback.

Slide 17

Moving forward it is very import to the success of the study to have your feedback and we appreciate you taking the time to join the webinar and take the survey. If you would like additional information or wish to provide feedback outside of the I-37 Corridor Study, please contact the TxDOT project manager, Cary Karnstadt at Cary.Karnstadt@txdot.gov, visit our project website at txdot.gov key word search "I-37 Corridor Study," and join us for the next webinar to be held on October 4, information to follow in the upcoming month.

Now we will answer any questions that you have submitted during the webinar.

Q. What considerations are being given to environmental impacts?

A. Environmental considerations were not taken into account during the initial analysis of this corridor. As we develop solutions that are specific to address needs, we will take environmental considerations into account during the scoping process for those specific projects.

Q: Where can we find the recording of the webinar?

A: A link to the recorded webinar will be on the txdot.gov website (key words: I-37 Corridor Study) and specifically on the I-37 Corridor Study page.

Q: Are there specific projects already set?

A: That's what we are working on right now as part of the next steps. We're taking the results of the data-driven analysis that we've completed so far and are beginning to brainstorm to understand what types of project solutions may be applicable to address the deficiencies we've already identified. Part of the feedback that you can help us with is to give us some ideas or thoughts as a stakeholder about where along the corridor you see potential solutions. So feel free to give us that feedback as you think about the corridor and review what you've heard today.

Q. There has been interest in bridge safety nationwide. Are most of the bridges on I-37 in good shape? Or is this what the study is including?

A: Bridge is one of the performance areas that we are assessing. We have several performance measures to help us assess the conditions of bridges along the corridor so that is one of the things we looking at along this corridor. What we've found so far is that most of the bridges along this corridor are in good or fair shape.

Q: The Nueces River Bridge has flooding issues. Are we raising the bridge?

A: One of the risks that we are looking at is the floodplain surrounding that bridge down near Corpus Christi. We are evaluating the location of bridges within floodplains and we are taking those types of risks into consideration as we look to improve those structures that are deficient.

Q: Will all of the Q&A be typed up on the I-37 corridor page?

This webinar will be recorded so you can access that to hear the answers to these questions. In addition, we will be providing a general overview of the survey results that we get and we will respond as necessary through that as well.

Q: Do we give feedback via survey or direct email?

A: You may provide feedback via the survey (link on txdot.gov website/key words "I-37 Corridor Study) or by directly emailing Cary Karnstadt at cary.karnstadt@txdot.gov.

Q: Can we access information as to whether segment data reflects local input and concerns?

A: In the final report for the I-37 Corridor Study, we will be summarizing all local input and concerns that we received in the webinar, through the online survey, or via email directly to TxDOT. This report will be available on the I-37 Corridor Study project page on txdot.gov. In addition, we will be addressing any expressed

WEBINAR #2

TEXAS DEPARTMENT OF TRANSPORTATION

Webinar Instructions

- All participants are muted.
- To maximize your screen, use the full-screen icon on the top right.
- To ask a question, select the "Q&A" function at the top of the screen and type in a question.
- We will read all questions and answer them at the end of the presentation.

TEXAS DEPARTMENT OF TRANSPORTATION

INTERSTATE 37: I-410 TO I-69E

I-37 Corridor Planning Study

Stakeholder Webinar #2

October 24, 2017

AGENDA

- Safety Moment
- Introductions
- Overview of I-37 Corridor
- Performance-Based Process
- Stakeholder Feedback
- I-37 Corridor Solutions
- Next Steps
- How to provide additional feedback

I-37 Corridor Overview

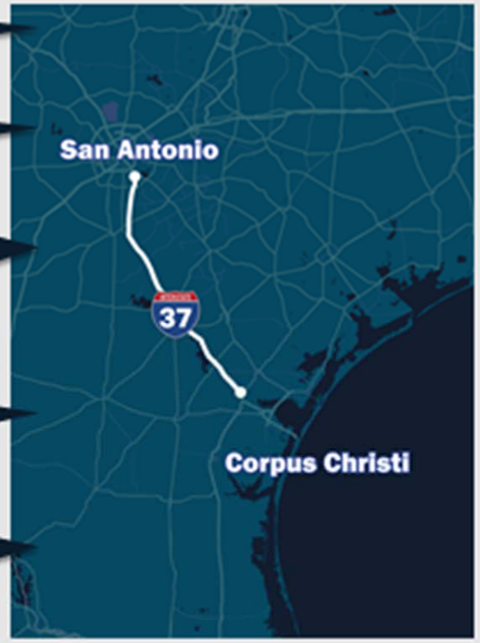
Generally 2 lanes in each direction

Part of Primary Freight Network

Daily traffic volumes 20,000 – 30,000 vehicles per day along most of corridor; 60,000 – 80,000 at south and north ends

Typically 20% - 25% trucks along corridor

Corridor broken into 14 segments for evaluation



Corridor Evaluation Overview

Assess Needs for Improvement → **Identify** Potential Solutions → **Evaluate** and Prioritize Solutions → **Recommend** Solutions

- Previous webinar reviewed performance and needs assessments
- Gathered stakeholder input
- Recent work includes development of solutions and prioritization
- **End result**: Prioritized list of improvement projects at various locations on the I-37 corridor

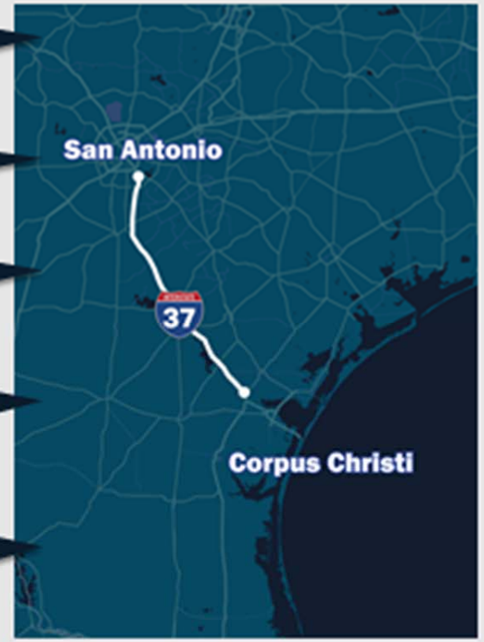
How are We Measuring the Performance of the I-37 Corridor?

Pavement | Bridges | Mobility | Safety | Freight | Corridor Wide

Performance Area	What is being measured?
Pavement	Condition and smoothness of pavement
Bridge	Surface condition as well as structural soundness
Mobility	Congestion including traffic volume and the time it takes to travel from one end to another
Safety	Rate of crashes that occur
Freight	Time it takes for trucks to travel from one end to another and restrictions along the way
Corridor Wide	Parking limitations, access issues, regional travel demand, frontage road connections

Key Take-Aways from I-37 Corridor Evaluation

- Bridges and pavement generally in "fair" or "good" condition
- Traffic congestion at north and south ends of corridor
- No significant freight restrictions
- Crash rates above statewide average in a few locations
- Man-made ramps and frontage road connections may be concerns



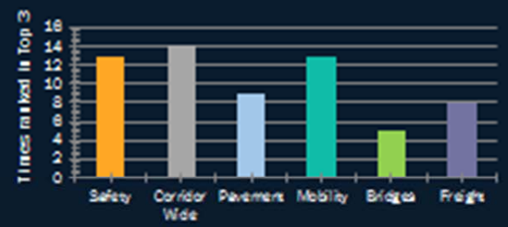
What We Heard from You: 8/24 – 9/30 Survey

- 26 people responded (7 from San Patricio County, 2 from Nueces County, and 17 unknown
- Stakeholder priorities:
  - More ramps & frontage roads
  - More lighting
  - Emergency resources for stranded motorists
  - 3rd lane for trucks
  - Northbound exits for Redbird Lane and I-69

What We Heard from You

Ranking of Performance Areas

- Safety, Mobility, and Corridor-Wide ranked high priority
- Bridge and Freight ranked low priority



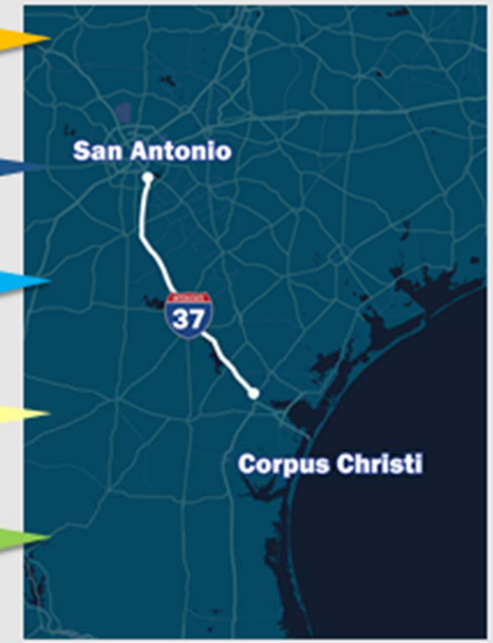
Locations Identified

- 50% of locations identified were related to Mobility or Safety
- 15% of locations were related to Pavement or Bridges

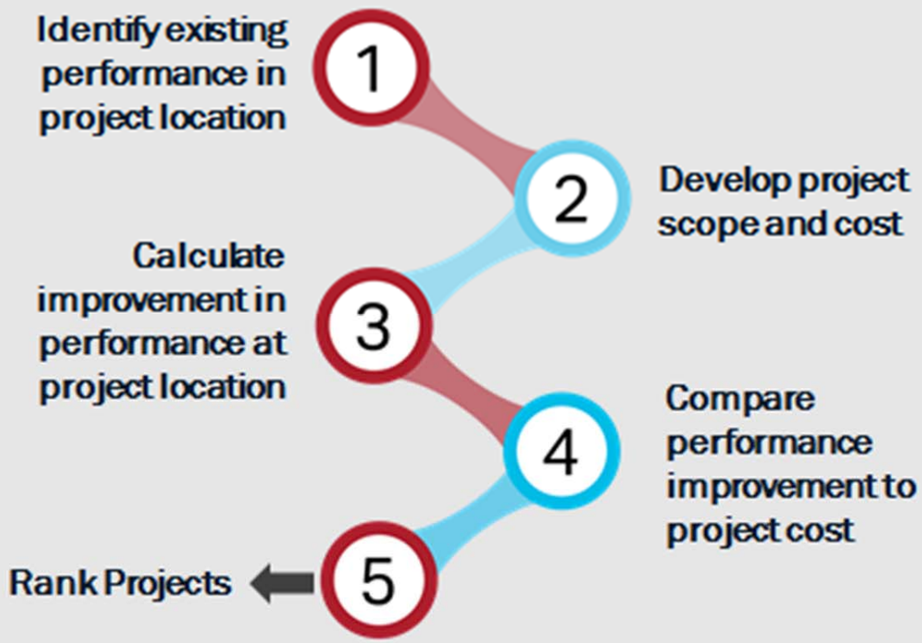
Feedback will be documented in Final Report

I-37 Corridor Proposed Solutions Identified

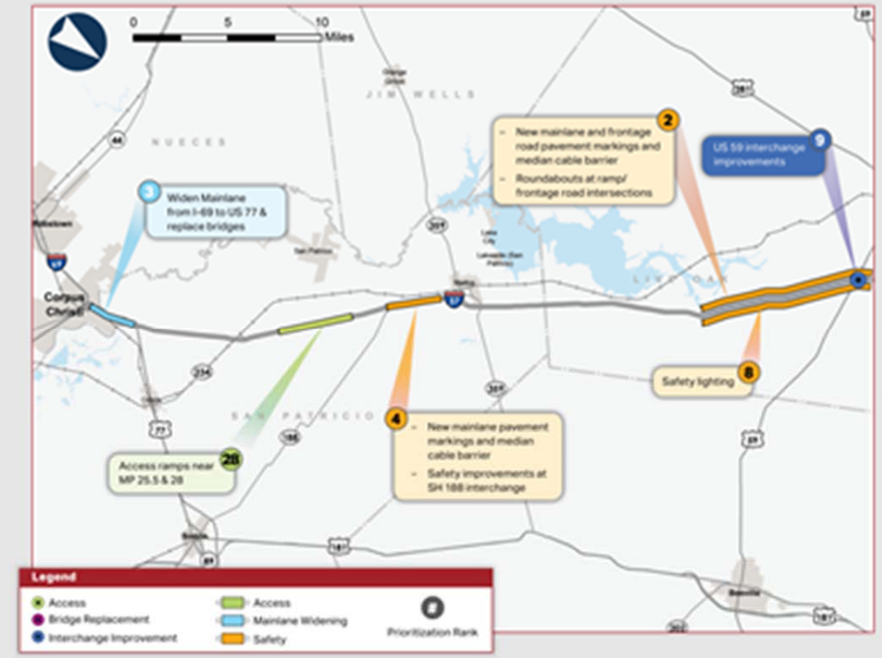
- Five safety projects
- Eight interchange projects
- Four mainlane widening projects
- Three bridge replacement projects
- Nine ramp or frontage road projects



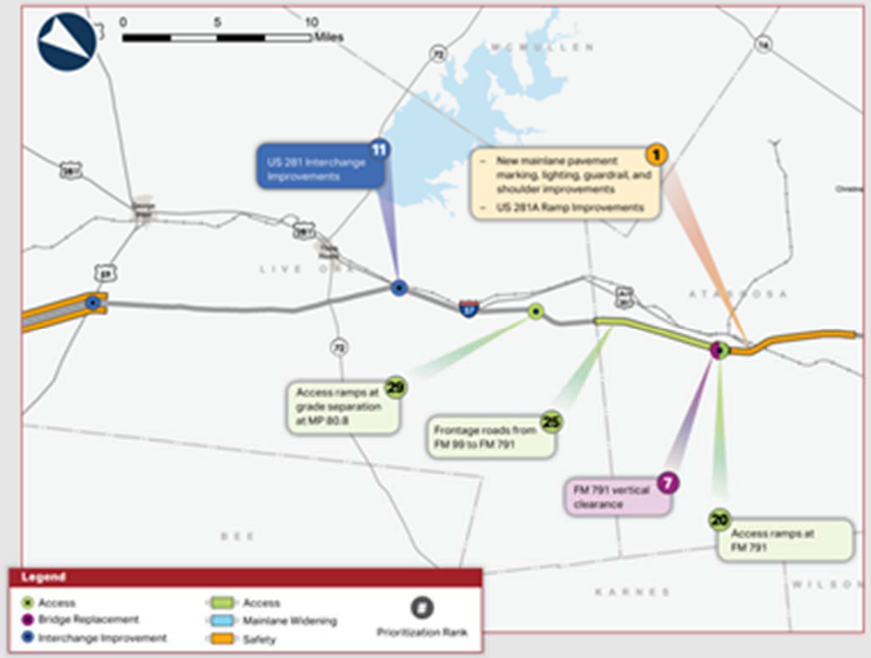
How We Evaluated and Ranked Project Solutions



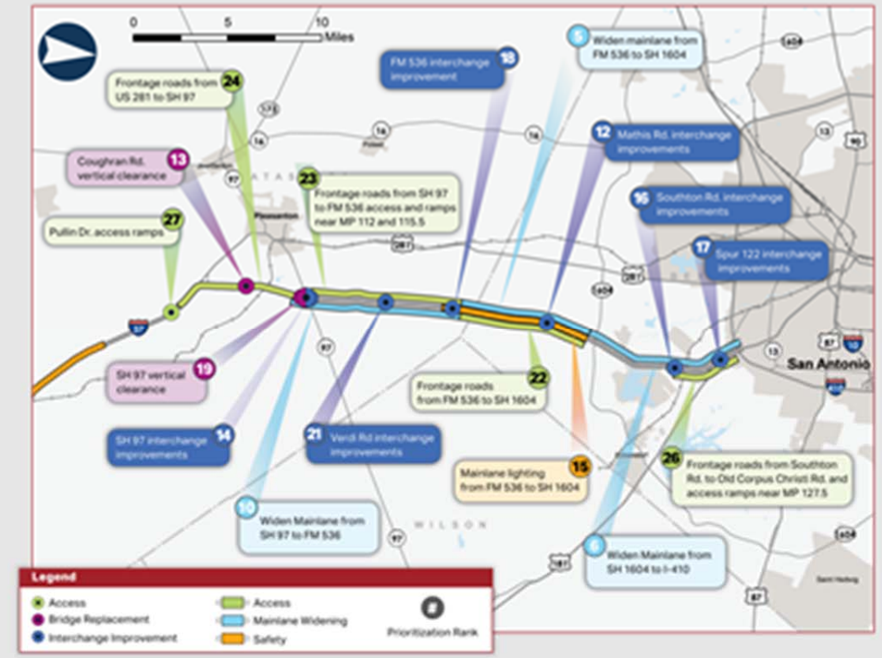
I-37 Corridor Proposed Solutions - South Section (I-69 to US 59)



I-37 Corridor Proposed Solutions – Middle Section (US 59 to US 281A)



I-37 Corridor Proposed Solutions - North Section (US 281A to I-410)



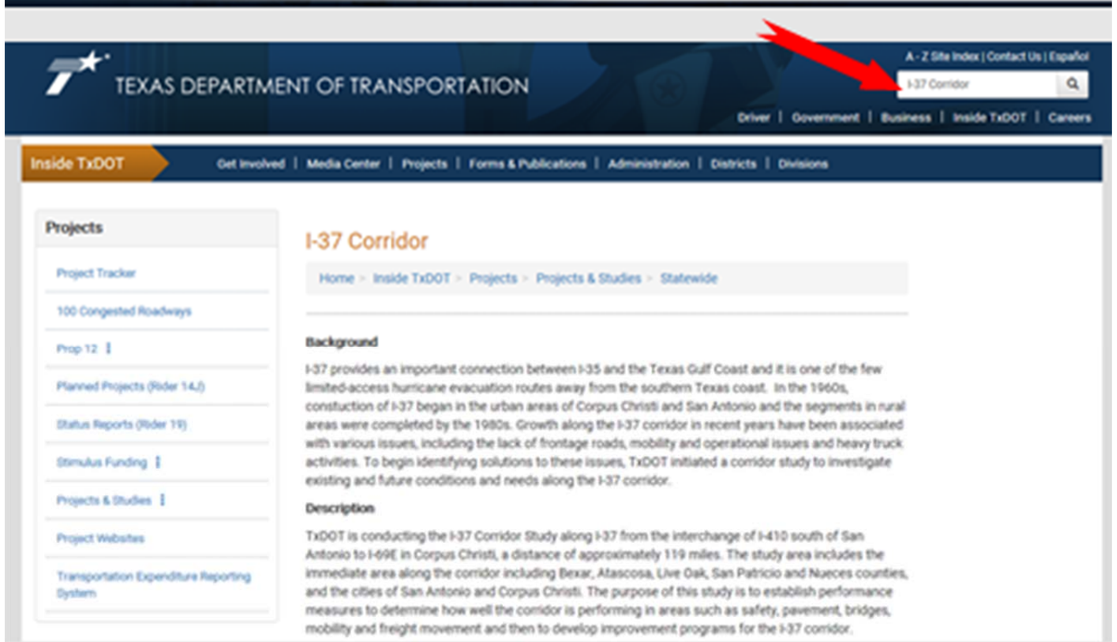
I-37 Corridor – Top Ten Ranked Proposed Solutions

Rank	Category	County	Description	Estimated Cost (millions)
1	Safety	Aransas	• Install new mainlane striping, delineators, rumble strips, raised pavement markers, and install lighting from MP 91-98 • Install/construct guardrail, shoulder rehabilitation, and roadside grading from MP 91-92 • Extend acceleration/deceleration length for ramps from US 281A interchange	$0.8
2	Safety	Live Oak	• Install new mainlane and frontage road striping, delineators, rumble strips, and raised pavement markers, and install median cable barrier from MP 48-57 • Construct roundabouts at ramp/frontage roads intersections	$16.2
3	Widen Mainlane	Nueces	• Widen mainlane from I-69 to US 77 & replace bridges	$132.0
4	Safety	San Patricio	• Install new mainlane striping, delineators, rumble strips, and raised pavement markers & median cable barrier from MP 31-34 • Construct safety improvements at SH 188 interchange	$11.5
5	Widen Mainlane	Bexar	• Widen mainlane from FM 538 to SH 1604	$52.5
6	Widen Mainlane	Bexar	• Widen mainlane from SH 1604 to I-410	$69.4
7	Bridge Replacement	Aransas	• Replace FM 791 bridge to provide additional clearance	$2.2
8	Safety	Live Oak	• Install safety lighting from MP 48-49, 51-52, and 55-57	$2.3
9	Interchange Improvement	Live Oak	• Construct interchange capacity improvements at US 59 interchange	$1.5
10	Widen Mainlane	Aransas	• Widen mainlane from SH 97 to FM 538	$40.6

Next Steps

- October/November:
  - Gather stakeholder input through November 7, 2017
  - Incorporate comments
  - Finalize list of proposed solutions
  - Publish final report

www.txdot.gov



Additional Information and Feedback

- **Submit all comments by Nov 7, 2017**
- **Email comments to: Cary.Karnstadt@txdot.gov**
- **For today's presentation, visit www.txdot.gov**
  - Search keywords "I-37 Corridor"

I-37 Corridor Study Webinar #2 Script

Nancy- Slide 1

Before we start the webinar today, I want to remind you of a few "housekeeping" items:

- All participants are muted.
- To maximize your screen, use the full-screen icon on the top right.
- To ask a question, select the "Q&A" function at the top of the screen. You will type in a question in the box located on the bottom right.
- We will read all questions and answer them at the end of the presentation.

Roger - Slide 2

Hello, I'm Roger Beall, Corridor Planning Director at TxDOT, and I'd like to welcome you to this webinar on the I-37 Corridor Study Project. This is the second and final webinar conducted as part of this study. Your feedback is important to us and we appreciate your taking the time to participate today.

Slide 3

Before we get started today, I would like to take a minute to focus on safety. Here at TxDOT we strive to put safety at the forefront of all we do which is why we start every meeting with a Safety Moment. [ROGER INSERT SAFETY MOMENT]

On today's webinar, we have TxDOT representatives and members of our consultant team, AECOM, . With me today are Inas Aweidah AECOM Project Manager, Nancy Gates AECOM Public Involvement task lead and Rodney Bragg AECOM Engineering task lead

The study limits extend from the interchange of I-37 and I-69E in Corpus Christi to I-410 near San Antonio – it is 119 mile long and it provides an important connection between San Antonio and the Texas Gulf Coast, and serves as one of the few limited-access hurricane evacuation routes off the southern Texas coast.

I'd like to emphasize that this is a planning study to help prioritize projects for consideration in future TxDOT programs. If any of these recommendations get funded, they would be subject to further engineering and environmental study.

In August, we conducted our first webinar to present the findings of the corridor analysis and the identification of needs along the corridor. By the way, if you missed that webinar, you can listen and watch a recording of it on the I-37 page on the TxDOT website. Today, we're here to provide a high-level overview of the results and the prioritization of the recommended projects for the I-37 corridor.

Now, I'd like to turn it over to Inas Aweidah , who will explain the I-37 corridor study process and findings thus far.

Inas - Slide 4

Thank you Roger, before I get into the details of our analysis I want to orient you to our study area. As Roger mentioned and you can see on your screen, the I-37 corridor connects San Antonio on the north end to Corpus Christi on the south. It has generally two lanes in each direction for its entire length except at the north and south ends where additional lanes are provided. The daily traffic volumes vary between 20,000 and 30,000 vehicles per day throughout, with the exception of the northern and southern ends where the traffic volumes increase to between 60,000 and 80,000 vehicles per day. This corridor is part of the primary freight network across the State of Texas and typically has 20-25% trucks as part of its daily traffic volumes.

For the purposes of our analysis, we divided the corridor into 14 individual segments of roughly 10 miles each. We report the results of our performance analysis on the basis of these individual segments.

Slide 5

This flow chart represents the full process that we used to evaluate the I-37 corridor. We followed a performance-based process using existing TxDOT data to determine overall corridor performance and to identify areas of need along the corridor. This allowed us to determine where improvements should be made and how those improvements should be prioritized.

We evaluated solutions based on how well they improved the overall corridor performance in each of our five performance areas of pavement, bridge, mobility, safety and freight. This evaluation will result in a prioritized list of improvement projects for consideration in future TxDOT programs.

During our previous webinar (in August), we reviewed the performance of the corridor and our needs assessments. Since then our focus has been on developing and prioritizing the recommended solutions.

Slide 6

As I mentioned a moment ago, we evaluated five individual performance measures as well as a "corridor-wide" measure along I-37.

- The pavement performance area scored the condition and smoothness of the pavement within each segment.
- The bridge performance area rated the surface condition and structural soundness of every bridge along I-37.
- The mobility performance area scored the levels of congestion and travel time for each segment.
- The safety performance area compared crash rates for each segment to statewide averages for fatal and incapacitating injury crashes.
- The freight performance area identified the travel time and locations of low clearance structures within each segment.
- In addition to these five performance areas, we also assessed the I-37 corridor's performance in truck parking, access issues, regional travel demand, and frontage road connections as part of our "corridor-wide" performance area.

Slide 7

The performance analysis concluded that in general the pavement and bridges located in the I-37 corridor are in "good" or "fair" condition. There is some traffic congestion near San Antonio and Corpus Christi, and those areas are projected to worsen in the future.

There are no significant freight restrictions but there are a few locations throughout the corridor where the segment level crash rates are higher than the statewide average.

In addition, locations were identified where man-made entry/exit ramps have been made that may be contributing to some safety issues.

Overall, the corridor is operating fairly well with some isolated areas of need.

I would like to turn it over to Nancy to go over the results of the survey

Nancy - Slide 8

Following the previous webinar, in late August, a survey was opened on the MetroQuest platform with access from the TxDOT web site. We had 26 people respond through the survey and provide general comments to add more ramps and frontage roads along I-37; add more lighting; provide emergency resources for stranded motorists; add a 3rd lane to facilitate trucks/freight movement; and there were some safety concerns just south of the project limits, near the exit for Redbird Lane and I-69. A majority of these elements are part of the solutions that we'll discuss later.

Slide 9

Part of survey asked people to rank their top priorities along the I-37 corridor. Safety and mobility concerns ranked as a high priority while Bridge and Freight ranked lower.

Survey respondents were also able to place comments/concerns on a corridor map, and people identified over 50 locations. Approximately 50% of the locations identified were related to Mobility or Safety and only 15% were related to Pavement or Bridge issue areas. A majority of the locations identified on the map align with the highest priority performance areas on I-37.

Many of the issues areas identified through this survey have been addressed as part of solutions recommended for this corridor, which we will review next. All feedback received will be documented as part of our final report which will be available for your review once complete.

Slide 10

Now, I would like to turn it over to Rodney Bragg of AECOM to review the solutions developed for I-37 and how we prioritized these solutions.

Rodney

The corridor needs that were identified through the performance-based process led to us identifying 29 improvement projects along the corridor including:

- Five safety projects such as adding lighting, guardrail, or pavement markings
- Eight interchange projects that typically include adding lanes to the crossroads or ramps
- Four mainline widening projects; 3 near San Antonio and 1 near Corpus Christi
- Three bridge replacement projects to increase the vertical clearance for freight movements
- Nine projects to construct new ramps or frontage roads

Slide 11

This graphic illustrates the process we used to evaluate the solutions.

First, the existing performance was used to identify the locations that warranted a solution.

Then, we developed a solution to address those specific needs and prepared a cost estimate.

Third, the improvement in corridor performance was estimated for each solution at each project location.

Then, we compared that performance improvement to the project cost, which resulted in a score or rank for each project.

Slides 12-15

On the screen you can see the southern end of the corridor that extends from I-69 near Corpus Christi on the left to US 59 on the right.

If you want to map the map bigger, you can press the arrows button located in the upper right corner of the window to make it full screen.

[Slide 13]

The number within each circle identifies the ranking of the project (remember, there were 29 projects developed) with number 1 being the highest priority project. The orange colored symbols represent safety projects; the blue symbols represent capacity improvements; the purple symbols represent bridge replacement projects, and the green symbols represent projects that would provide new access.

There were 5 projects that ranked in the top 10 within the southern portion of the corridor:

- On the left you can see a mainline widening project from I-69 to US 77 that ranked #3

  [Slide 14]
- In the middle are 3 safety projects, that ranked #2, 4, and 8, that involve installation of items such as pavement markings, rumble strips, delineators, and median cable barriers

[Slide 15]

- On the right is an interchange improvement project at US 59, ranked #9, that would improve the operation of the interchange and add capacity to US 59.

Slide 16-18

[Slide 16]

This map shows the middle section of the corridor that extends from US 59 on the left to US 281A on the right.

There were 2 projects that ranked in the top 10 in this section of the corridor:

[Slide 17]

- The replacement of the FM791 bridge to provide additional vertical clearance ranked #7
- A safety project starting at FM791 and extending north for about 7 miles ranked #1, which would install items such as pavement markings, rumble strips, delineators, lighting, and guardrail. This project ranked the highest priority because this location has the highest crash rates on the corridor.

[Slide 18]

There were also 3 projects to construct new ramps or frontage roads that ranked #20, 25, and 29

Slide 19-22

[Slide 19]

This map shows the northern end of the corridor that extends from US 281A on the left to I-410 on the right.

[Slide 20]

In this section of the corridor, there were 3 projects that would result in the widening of I-37 from SH 97 up to I-410 that ranked in the top 10 (ranked #5, #6, and #10).

[Slide 21]

There were also 6 projects to construct improvements at 6 different interchanges including SH 97 (ranked #14), Verdi Rd (ranked #21), FM 536 (ranked #18), Mathis Rd (ranked #12), Southton Rd (ranked #16), and Spur 122 (ranked # 17).

[Slide 22]

In addition, there were 2 bridge replacement projects to increase the vertical clearance that ranked #13 and #19.

Slide 23

This table shows the top 10 ranked solutions on the I-37 corridor.

Four of the top 10 are safety projects, including the ones ranked #1 and #2.

Four of the top 10 are mainline widening projects that add lanes to the north end of the corridor from SH 97 up to I-410, and would also widen the south end of the corridor from I-69 to US 77.

There's one bridge replacement at FM 791 to increase the vertical clearance, and there's one interchange improvement project at the US 59 interchange.

The costs for these projects range between an estimated $2 million for general safety improvements up to over $130 million to add lanes in Nueces County.

Slide 24

The next steps in our study will be to collect any feedback thru November 7 and finalize the list of recommended solutions to improve the performance of the I-37 corridor. We will also be preparing a draft report, that once final, will be available for you to download from the project website.

Slide 25

To access the I-37 corridor page, please visit the TxDOT website at www.txdot.gov and enter the key words, "I-37 Corridor Study" in the search tab at the top of the page.

Slide 26

We appreciate you taking the time to join the webinar today. If you would like additional information or wish to provide more feedback on the I-37 Corridor Study, please contact the TxDOT project manager, Cary Karnstadt at Cary.Karnstadt@txdot.gov, visit our project website at txdot.gov. Please submit any comments on today's webinar material to Cary by November 7. Please note that a recording of this webinar will be uploaded to the web page within a week. Now we will answer any questions that you have submitted during the webinar.

Q: Did you look at areas where flooding is a concern? This is an issue near Corpus Christi.

Yes, we did look at areas of the corridor that are within the delineated floodplains. The area at the southern end of the corridor where the Nueces River is within a floodplain was part of our study and that is why one of the reasons why the areas between I-69 and US 77 are ranked so high on our priority list.

Q: When will construction start on all these projects?

These are recommended projects and do not have funding associated with them at this point. When we provide these recommendations to each of the TxDOT district offices, we will look at funding opportunities for them and move forward with implementing them. The construction timeline will be determined based on environmental studies and engineering work, and funding

Q: Are they going to keep the frontage roads two-way?

In most situations in rural areas, the frontage roads will probably be kept as two way roads. Currently along the corridor frontage roads are generally two way. This will be the subject of further study particularly in urban areas where, for safety concerns, we will start looking at converting frontage roads from two-way to one-way. As far as this study goes, we did not identify any that we would be converting at this point.

Q: How did you arrive at these cost estimates?

A: Keep in mind that this is a high- level planning study and we were trying to identify needs and priorities along the corridor. So the cost estimates that we developed are commensurate with the level of detail that we've looked at without any engineering or environmental studies. So these are very high level estimates to help us prioritize the projects. To help us develop those estimates, we looked at recent construction projects both at the north and south ends of the corridor.

Q: What is the next step of this study? When will the final report available?

The next step is to continue to take comments until November 7 including input from stakeholders and any others. We then will consider that input and provide recommended projects. The report will be finalized by the end of November and will be published after the district and TPP review it.

Q: what was your basis for selecting the performance measures?

First, we wanted to have information that TxDOT already collects and has available. We did not want to do a lot of field work to collect new information. We wanted to be cost efficient and use data that TxDOT already had We had a series of meetings with different TxDOT groups including the bridge and pavement, safety, and traffic folks and we developed the performance measures jointly with them. We wanted to use TxDOT data and wanted to use performance measure that were scalable and measurable, and that we could quantify.

METROQUEST SURVEY RESPONSES, AUGUST-SEPTEMBER 2017

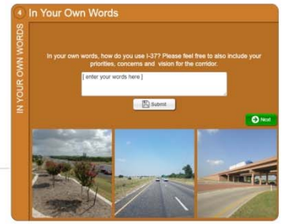
MetroQuest
Engagement...optimized

Texas Department of Transportation

I-37 Corridor Study

Aug 17, 17 - Oct 02, 17

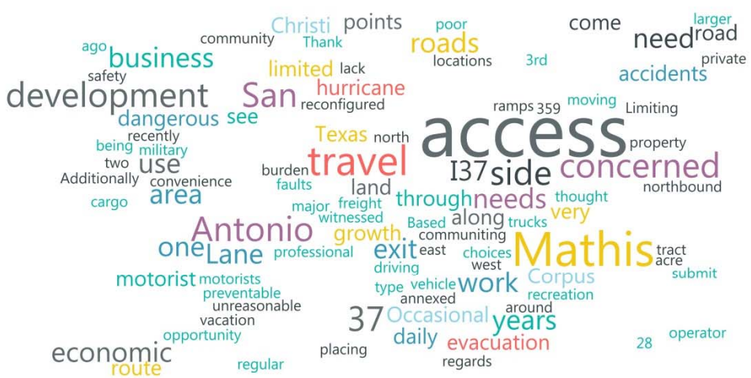
Screen 4



Top words found in comments, showing more frequent words larger.

Comments:

9



Data points for this Screen:

Comments: **9**

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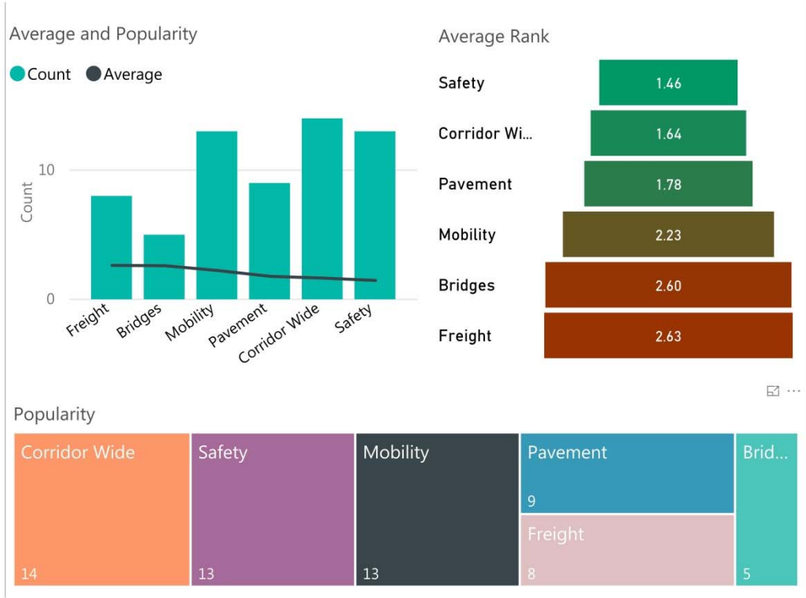
I-37 Corridor Study

Aug 17, 17 - Oct 02, 17

Screen 2



Data points for this Screen:

Rankings: **62** Comments: **4**

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Texas Department of Transportation | **I-37 Corridor Study**

Aug 17, 17 - Oct 02, 17 | Screen 2

Below: Each ranking item, showing how often each item was ranked in each position, ordered by average. Note that 1 is the highest rank.

Safety

9 (69%)	1
2 (15%)	2
2 (15%)	3

Times ranked: 13
Average rank: 1.462

Corridor Wide

7 (50%)	1
5 (36%)	2
2 (14%)	3

Times ranked: 14
Average rank: 1.643

Pavement

3 (33%)	1
5 (56%)	2
1 (11%)	3

Times ranked: 9
Average rank: 1.778

Mobility

2 (15%)	1
6 (46%)	2
5 (38%)	3

Times ranked: 13
Average rank: 2.231

Bridges

(0%)	1
2 (40%)	2
3 (60%)	3

Times ranked: 5
Average rank: 2.600

Freight

1 (13%)	1
1 (13%)	2
6 (75%)	3

Times ranked: 8
Average rank: 2.625

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VisitID	Date	SiteVisited	Layout	Item	CommentGroup	Feedback
2757409	22-8-2017 18:42:02	I-37Corridor.metroquest.com	Web	Bridges	S2	Bridge looks structurally sound
2766658	31-8-2017 18:44:27	I-37Corridor.metroquest.com	Web	Pavement	S2	Test.
2794135	20-9-2017 20:37:11	I-37Corridor.metroquest.com	Web	Freight	S2	The area on I-37 North bound at Red Bird Lane is a very dangerous intersection. Numerous accidents and even deaths have occurred as people try to exit to Northwest Blvd or US-77 South. The railroad bridge needs to be reconfigured so that this area can be widened to create separate exits for NW Blvd and US 77. We have had several meetings with TXDot in Corpus Christi to discuss this issue.
2804734	27-9-2017 14:42:24	I-37Corridor.metroquest.com	Web	Freight	S2	We need some lights out up and down the 37. The traffic stays busy year round, 24hrs/7 days a week. When someone breaks down, there is limited cell phone services and drivers can not see a broke down motorist walking.
2766373	31-8-2017 13:56:39	I-37Corridor.metroquest.com	Web	Additional (	Demographics	Would like to see access to the I37 corridor around Mathis improved and possible reduction of speed limits to reduce traffic accidents N and S of Mathis
2794135	20-9-2017 20:37:11	I-37Corridor.metroquest.com	Web	Additional (	Demographics	Mike Pusley Nueces County Commissioner
2766373	31-8-2017 13:56:39	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	Mathis Texas is the only city located along the study route. we have very limited access via access roads and what we do have are poorly designed. Also, the "restricted access" of the service roads is a determent our economic growth
2766393	31-8-2017 14:18:50	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	Occasional trips to Corpus Christi.
2791774	19-9-2017 16:45:31	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	My priority for the corridor is economic development. It is difficult to use I-37 because there are so few ingress/egress points. Without reasonable access to the land along the highway, nothing will be built.
2794135	20-9-2017 20:37:11	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	We use I-37 daily to get to work and frequently to travel to San Antonio and Austin. The area I am most concerned about is the Red Bird Lane area where people are trying to exit to NW Blvd and US-77. Very dangerous situation that has resulted in numerous accidents and at least one death of an 8 year old boy. This area really needs to be addressed.
2801094	25-9-2017 13:58:38	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	Leisure travel and hurricane evacuation
2804537	27-9-2017 11:40:52	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	Used to travel to/from San Antonio, concerned about the bridge crossing the Nueces River during flood water conditions, also the 77/37 Interchange needs to be redone to make it safer, finally concerned about the end of the Hurricane Evacuation Route at Campbellton.
2804734	27-9-2017 14:42:24	I-37Corridor.metroquest.com	Web	Vision Com	S4_Survey	I travel the I-37 daily between Corpus Christi and Mathis for work. I also travel to San Antonio for recreation and occasional business. I have witnessed major accidents, some preventable by poor choices by motorist. Based on my 28 years of driving through Texas and being a professional vehicle operator 20 years for the military, I can see the faults of the regular motorist but I also see the type of vehicles passing through. There needs to be better lighting, emergency resources for stranded motorists and a 3rd lane for the freight trucks moving larger cargo then 30 years ago. Thank you for the opportunity to submit my thought!

PLANNING & ESI

PO Box 9277
Corpus Christi
Texas 78469-9277
Phone 361-826-1314
Fax 361-826-3815
www.cctexas.com

November 7, 2017

Cary C. Karnstadt
Statewide Corridor Planner
Transportation Planning & Programming Division
Texas Department of Transportation
125 East 11th Street
Austin, TX 78701-2483

Subject: I-37 Corridor Planning Study – Stakeholder Input

Dear Mister Karnstadt,

For your I-37 Corridor Planning Study, the City of Corpus Christi strongly supports implementation of the proposed solution, "Widen Main lane from I-69 to US 77 & replace bridges" $132 million – rank 3, in Corpus Christi.

The City offers our specific stakeholder input on the I-37 Corridor Planning Study:

- The proposed solution is on a key corridor of the Texas Freight Mobility Network that will facilitate Corpus Christi's economic vitality and economic competitiveness, and connectivity with the Port of Corpus Christi, a top-ranked port in Texas.
- In view of recent Hurricane Harvey, August 2017, it is an essential segment for hurricane evacuation in the Coastal Bend.
- The main lane widening of I-37 will add more capacity to handle regional traffic growth, generated by petrochemical, agricultural and other industries.
- This segment of I-37 is subject to a major risk of flooding by the Nueces River.
- Alongside I-37, Labonte Park is a popular camping destination in the Northwest Area of Corpus Christi, that includes wetlands, and woodland areas.
- Project CSJ 0074-06-241, widening of I-37 by constructing 2 additional northbound travel lanes and 1 additional southbound travel lane, is programmed by Corpus Christi Metropolitan Planning Organization in the FY 2017-2020 Transportation Improvements Program (TIP) (and thus in the 2015-2040 Metropolitan Transportation Plan (MTP)) for a total project cost of $41.42 M in year 2020. It includes minor raising of northbound bridge over the Nueces River (although not above 100-year flood zone). The raising of southbound bridge is not included in this scope. City will request inclusion of your proposed solution as amendment to the MTP.
- This segment of the I-69 is a significant part of I-69E for greater freight efficiency in Texas with the ongoing I-69 upgrade program as well as crucial connectivity to the Rio Grande Valley.

If you have any question about our stakeholder input, please kindly contact me.

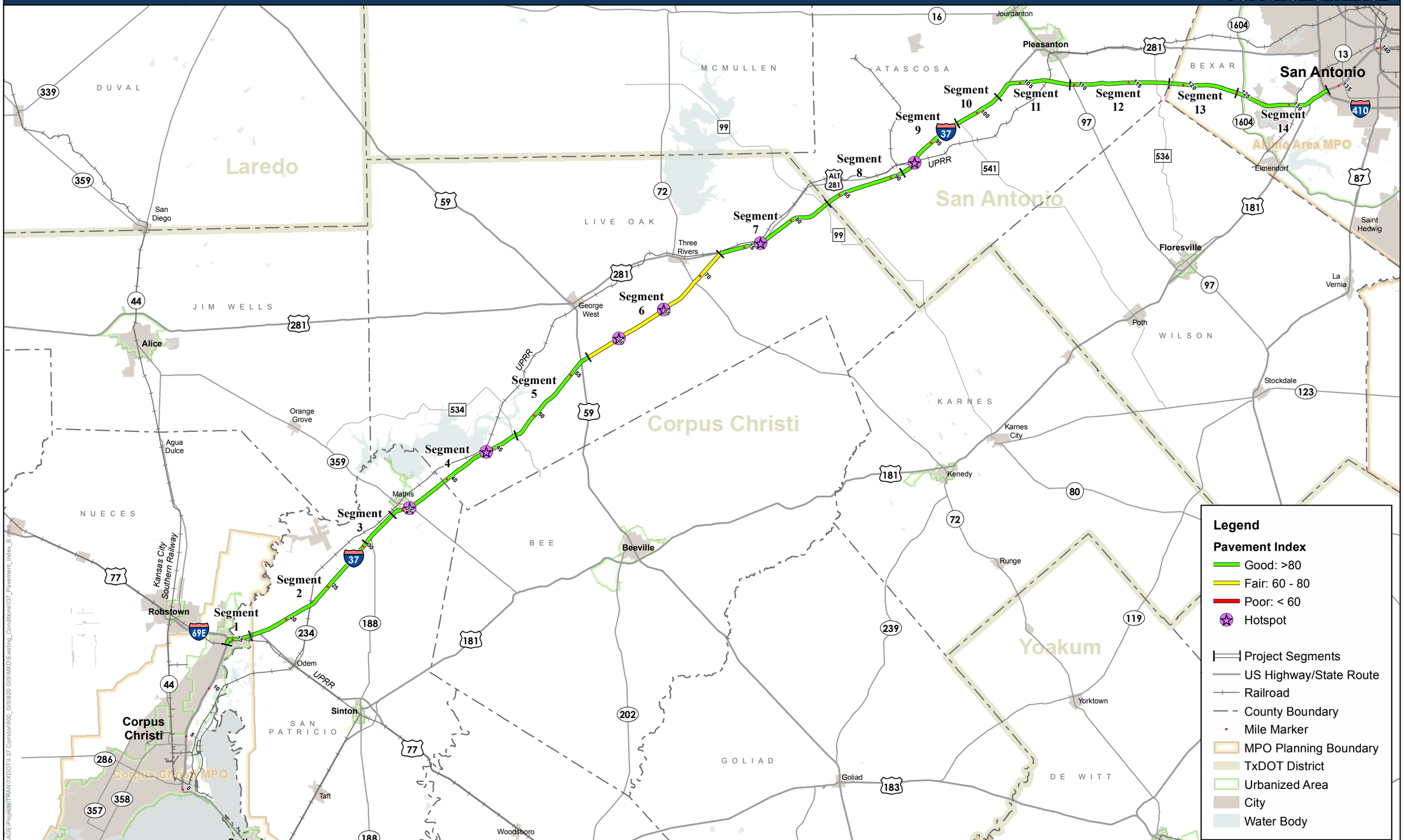
Sincerely,

Daniel McGinn, AICP CFM
Assistant Director of Planning

APPENDIX C

PERFORMANCE MAPS

I-37 Pavement Index



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October 19, 2017

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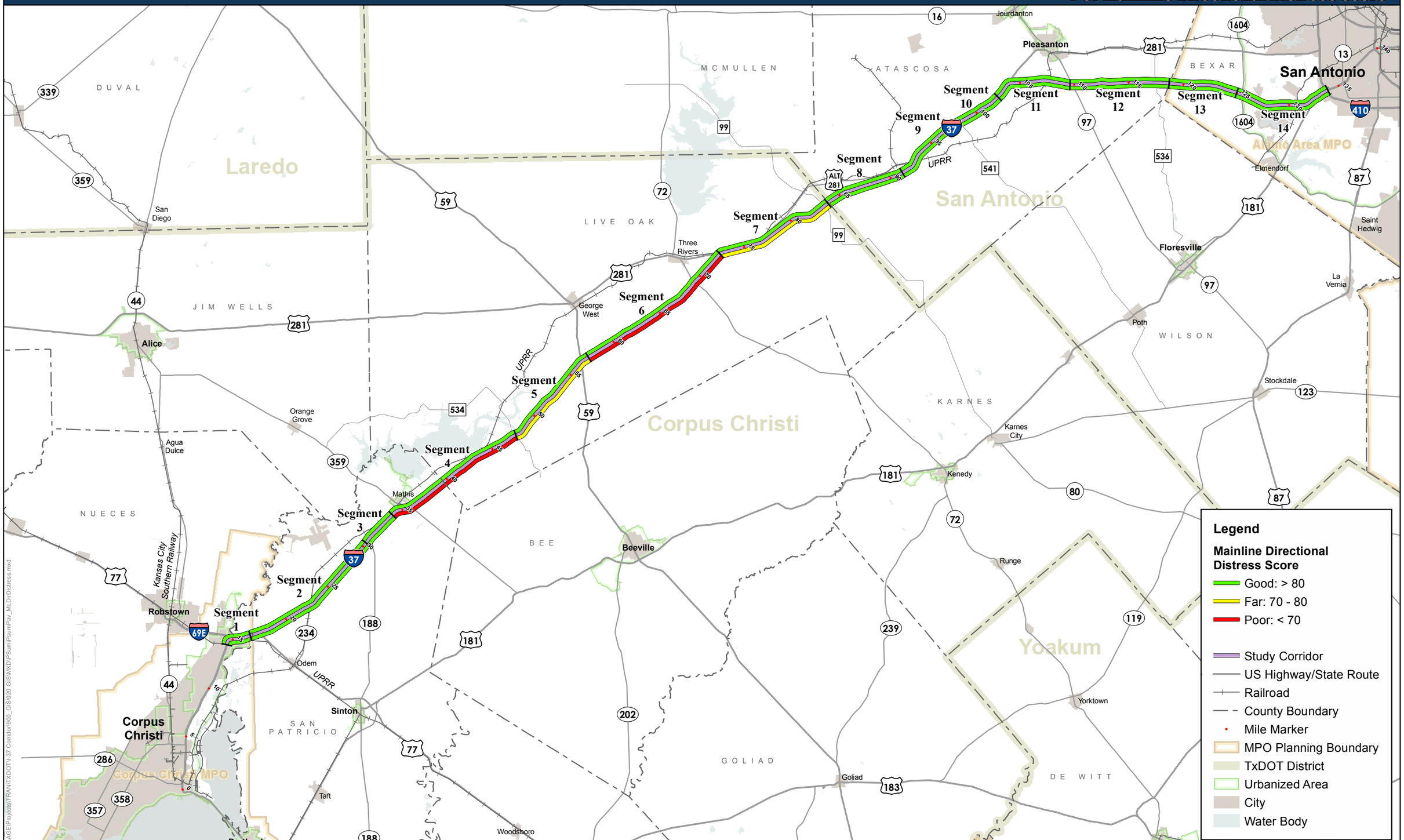
I-37 Mainline Directional Ride Score

I-37 Mainline Directional Distress Score



I-37 Frontage Road Condition Score

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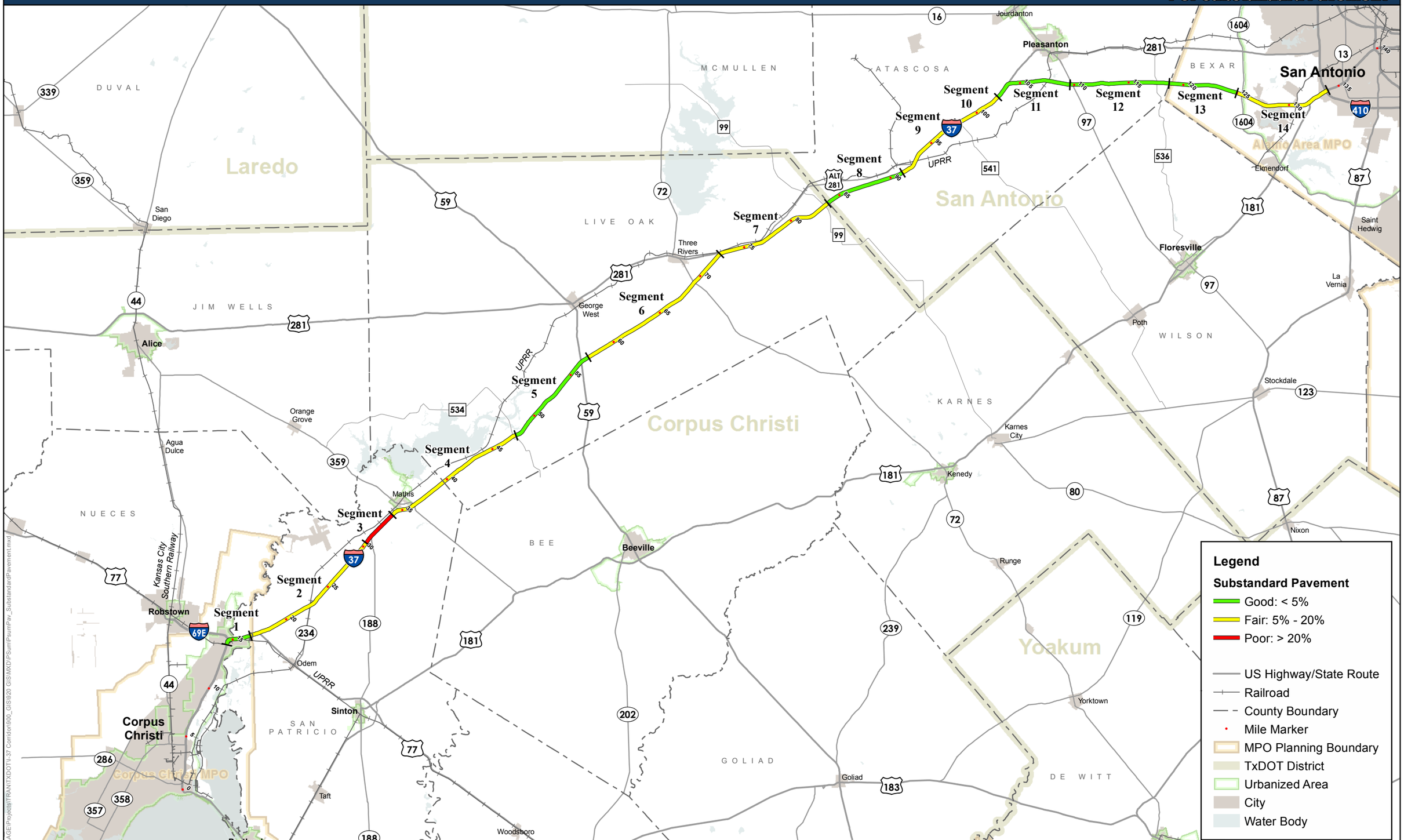
I-37 Substandard Pavement



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L:\AGE\Projects\TRAN\TXDOT\I-37 Corridor\900_GIS\920 GIS\MXD\PSum\PsumPav_SubstandardPavement.mxd

I-37 Bridge Index

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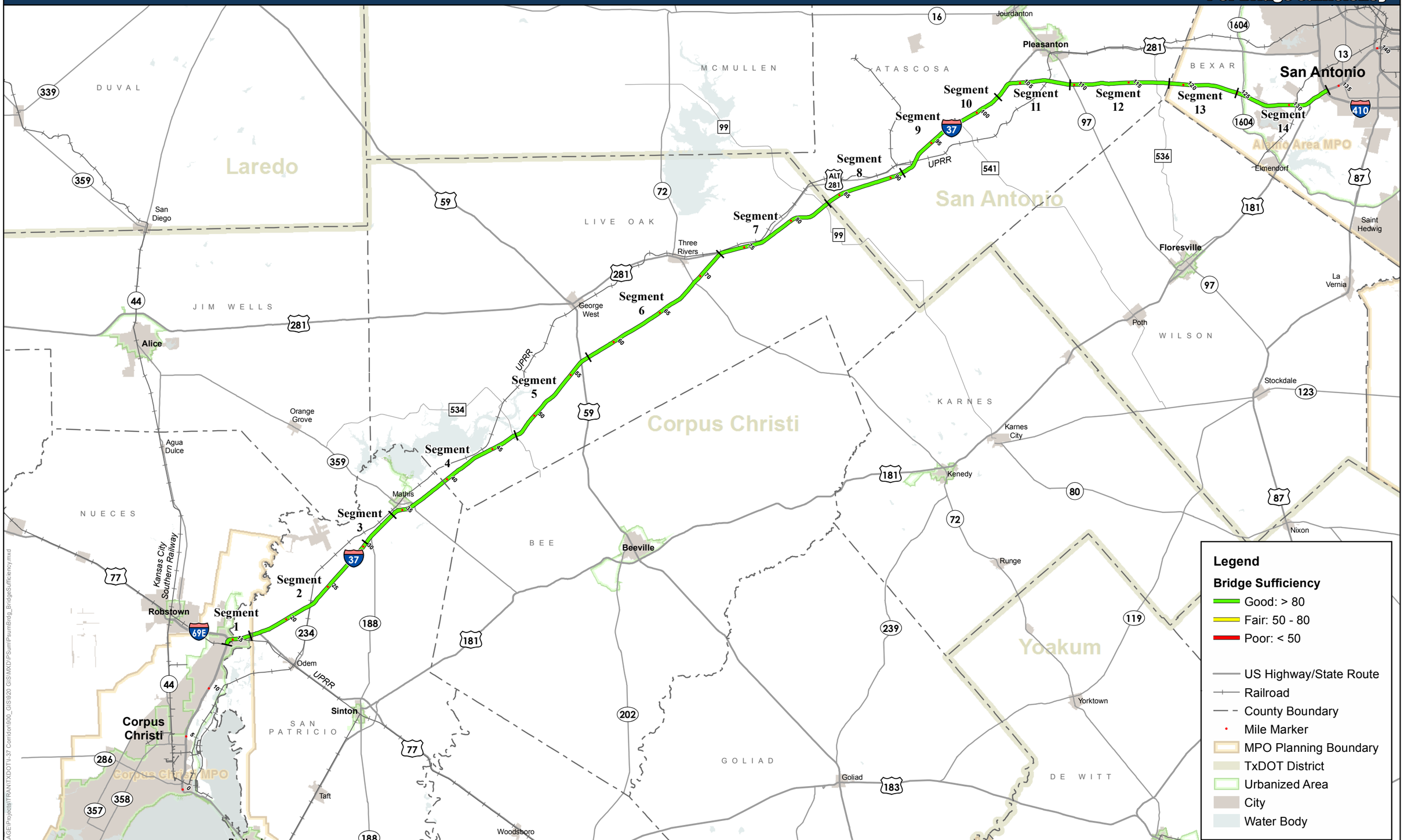
I-37 Bridge Sufficiency



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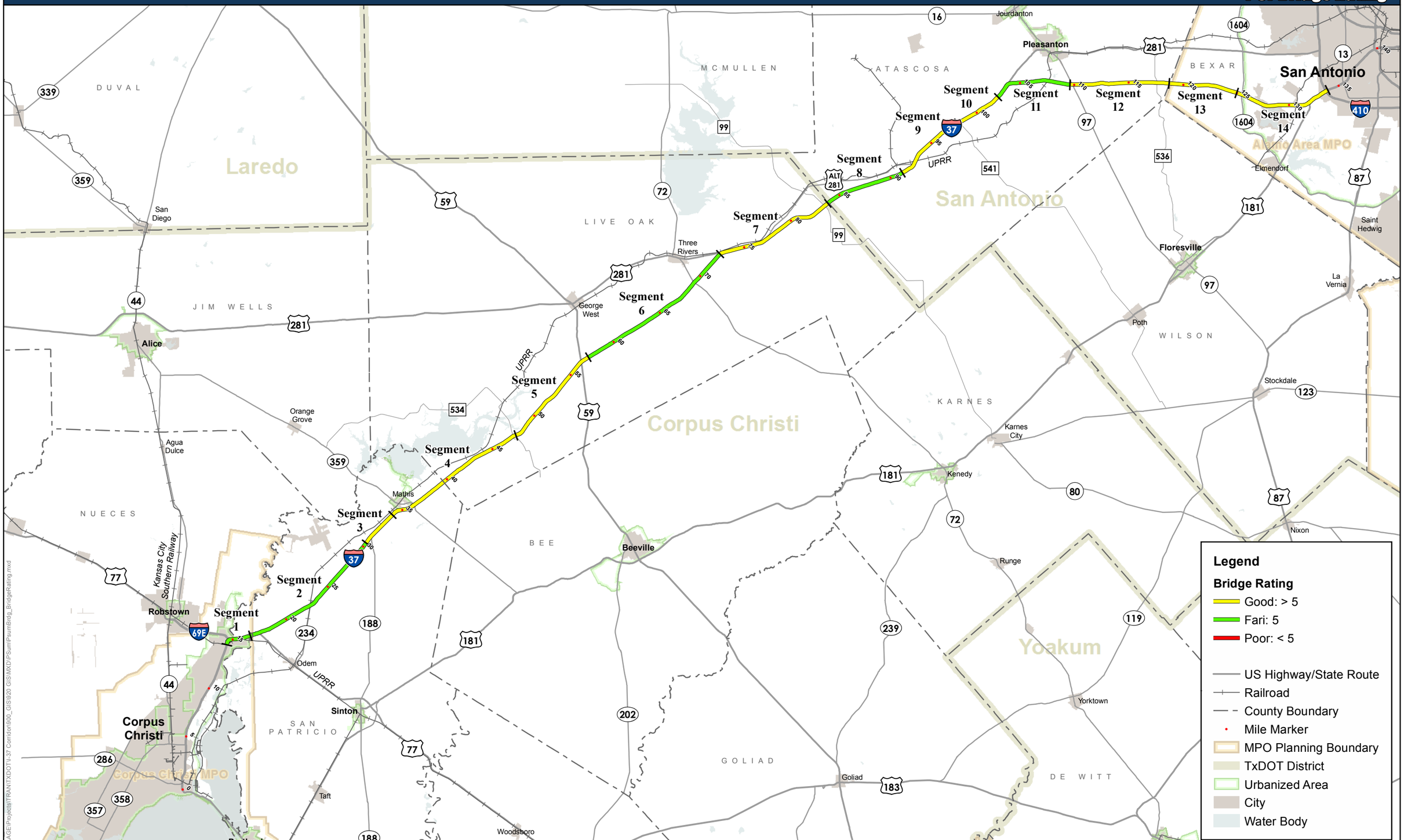
I-37 Bridge Rating



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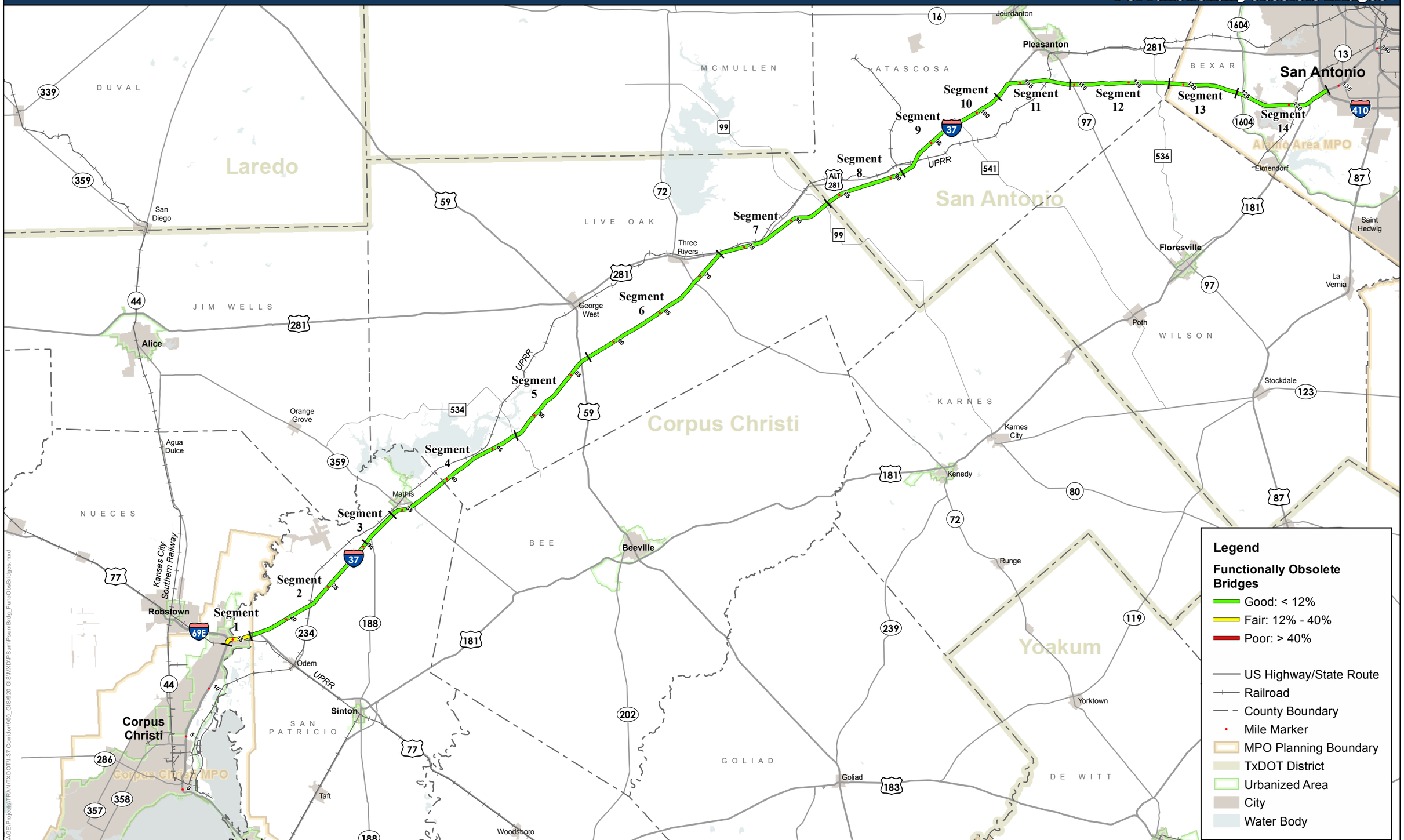
I-37 Functionally Obsolete Bridges



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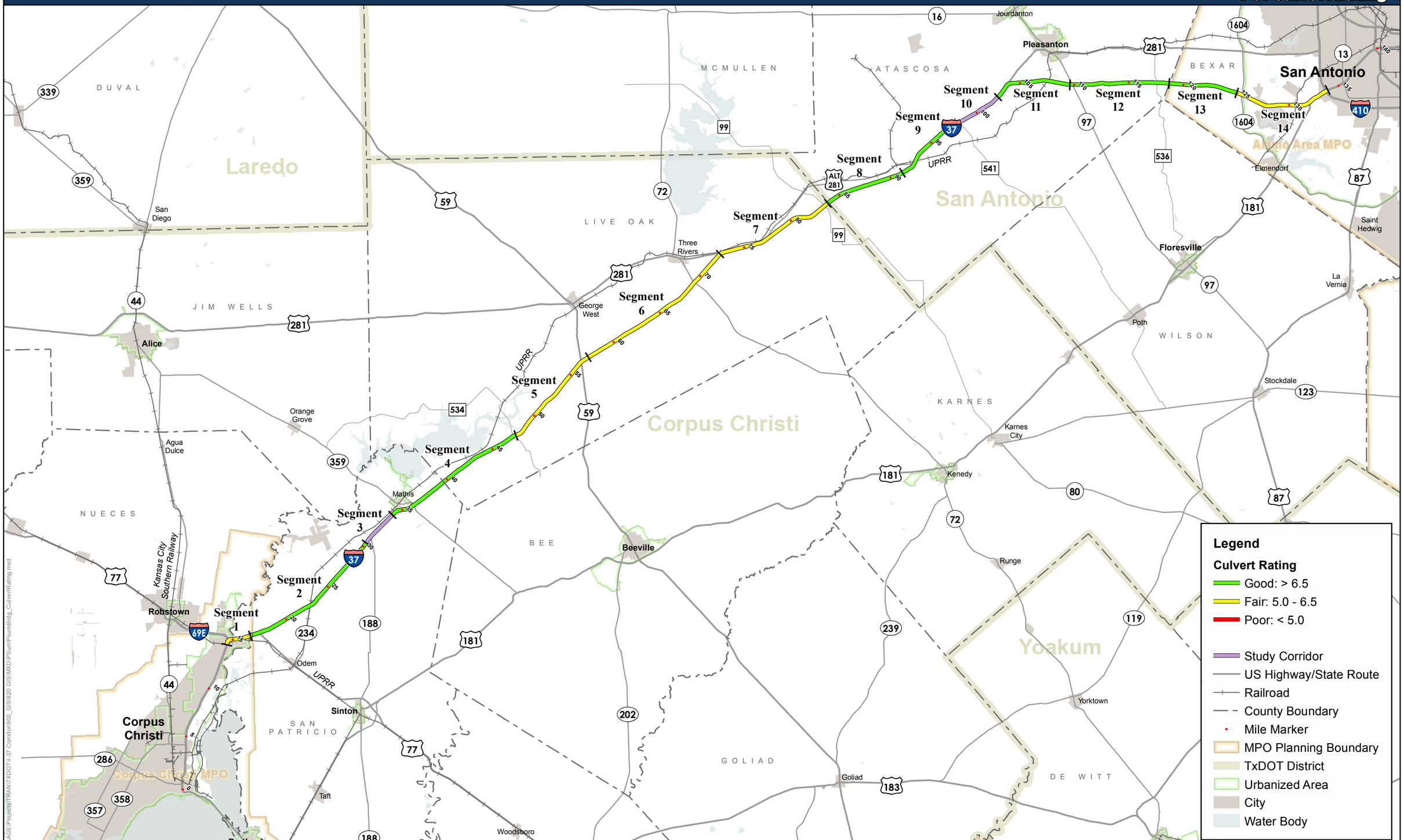
I-37 Culvert Rating



I-37 Mobility Index

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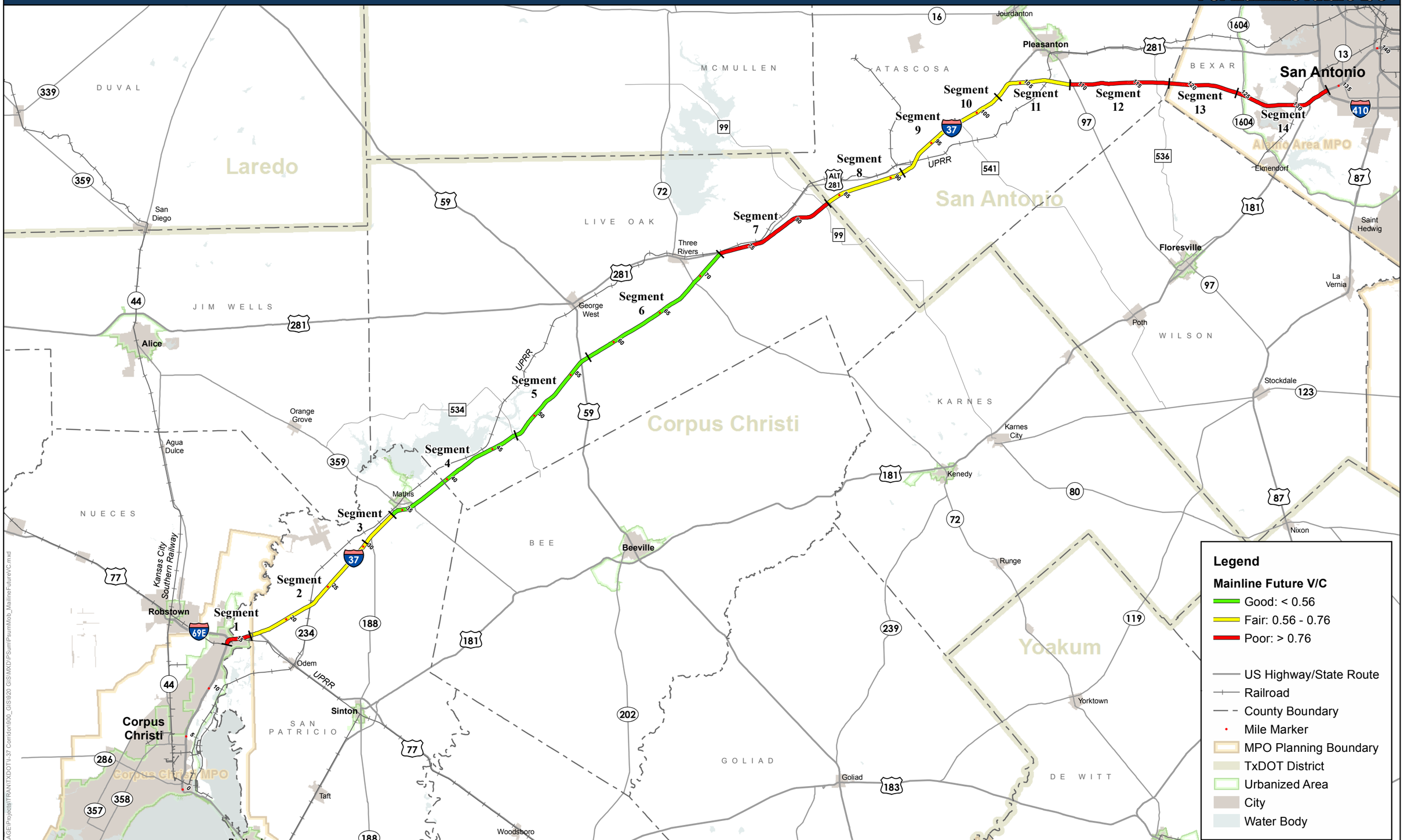
I-37 Mainline Future V/C



I-37 Existing Mainline Peak Hour V/C

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I-37 Directional TTI (all vehicles)

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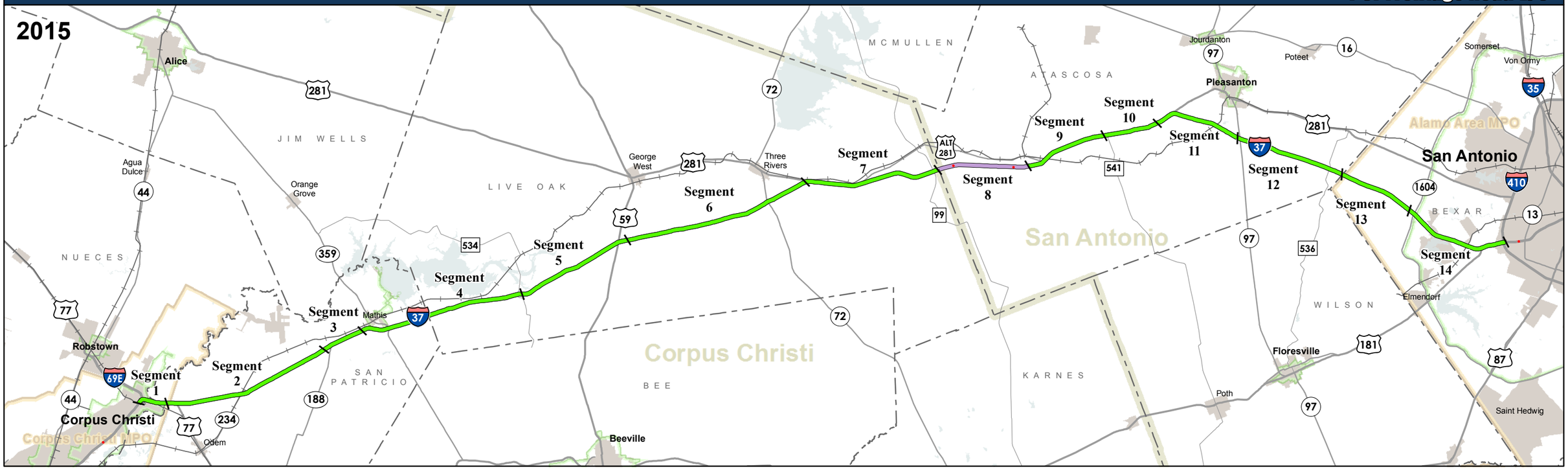
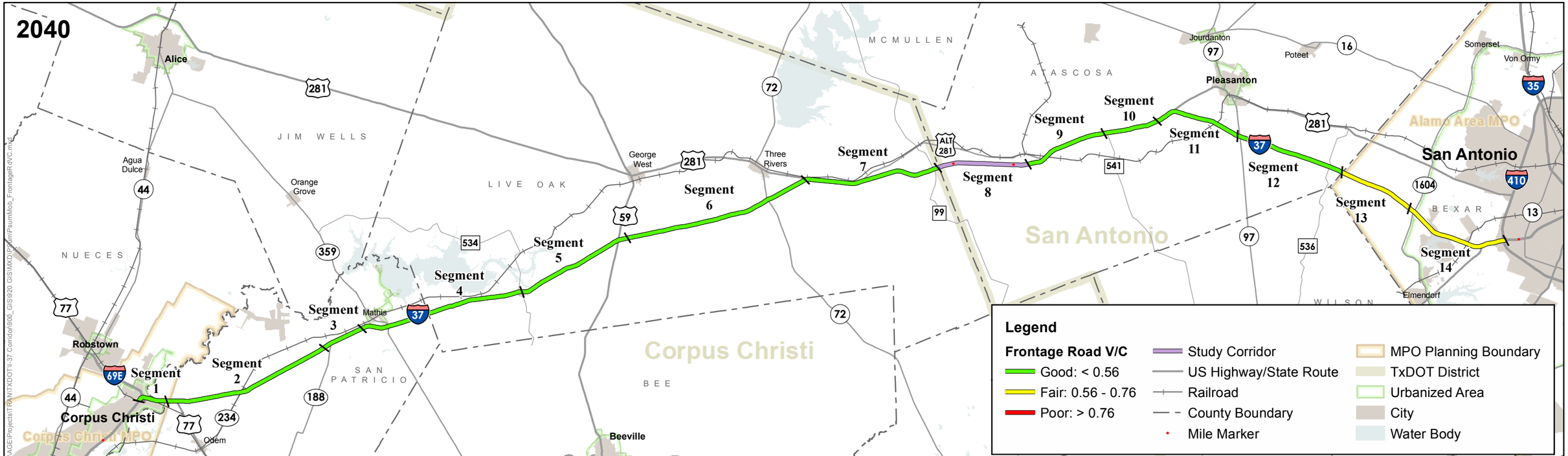
I-37 Directional PTI (all vehicles)

I-37 Frontage Road V/C





0 8 16 Miles

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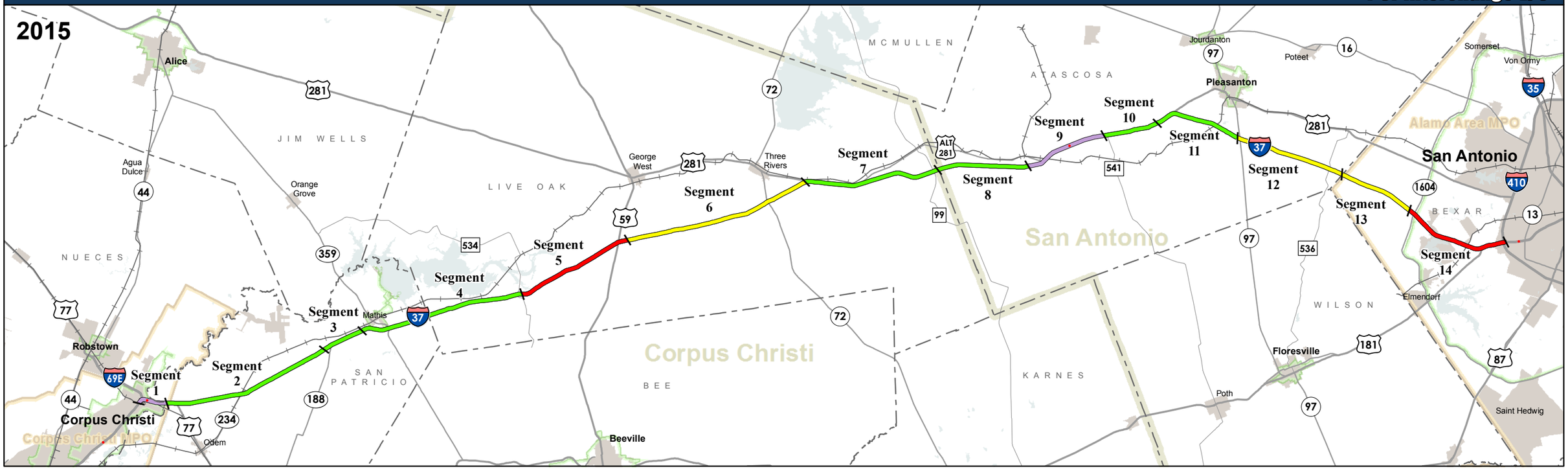
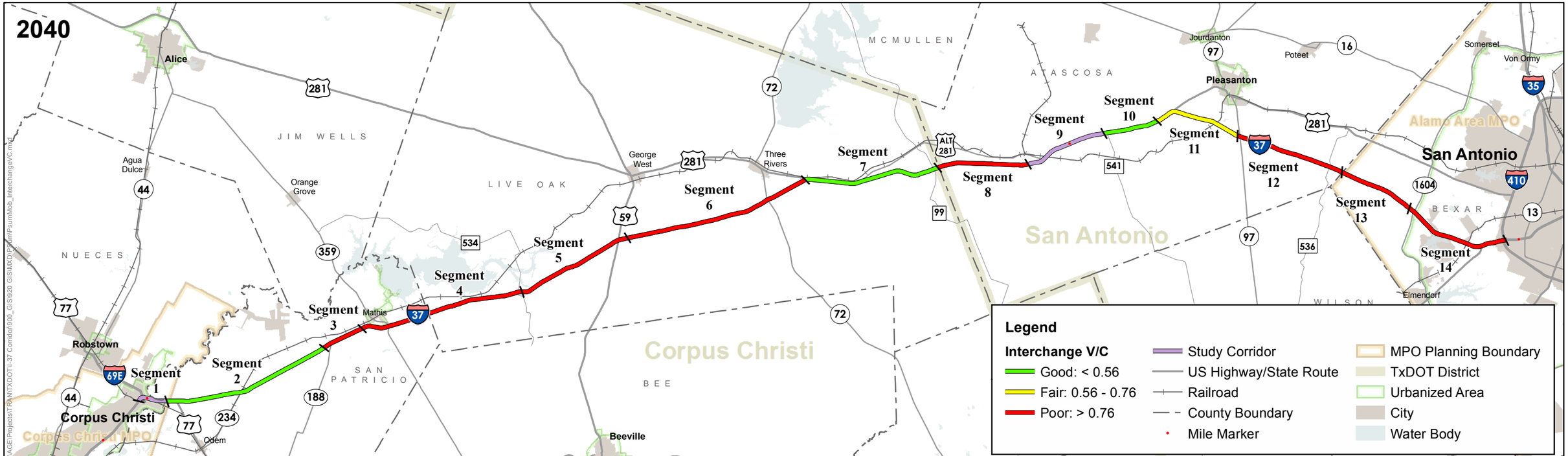
I-37 Interchange V/C





0 8 16 Miles

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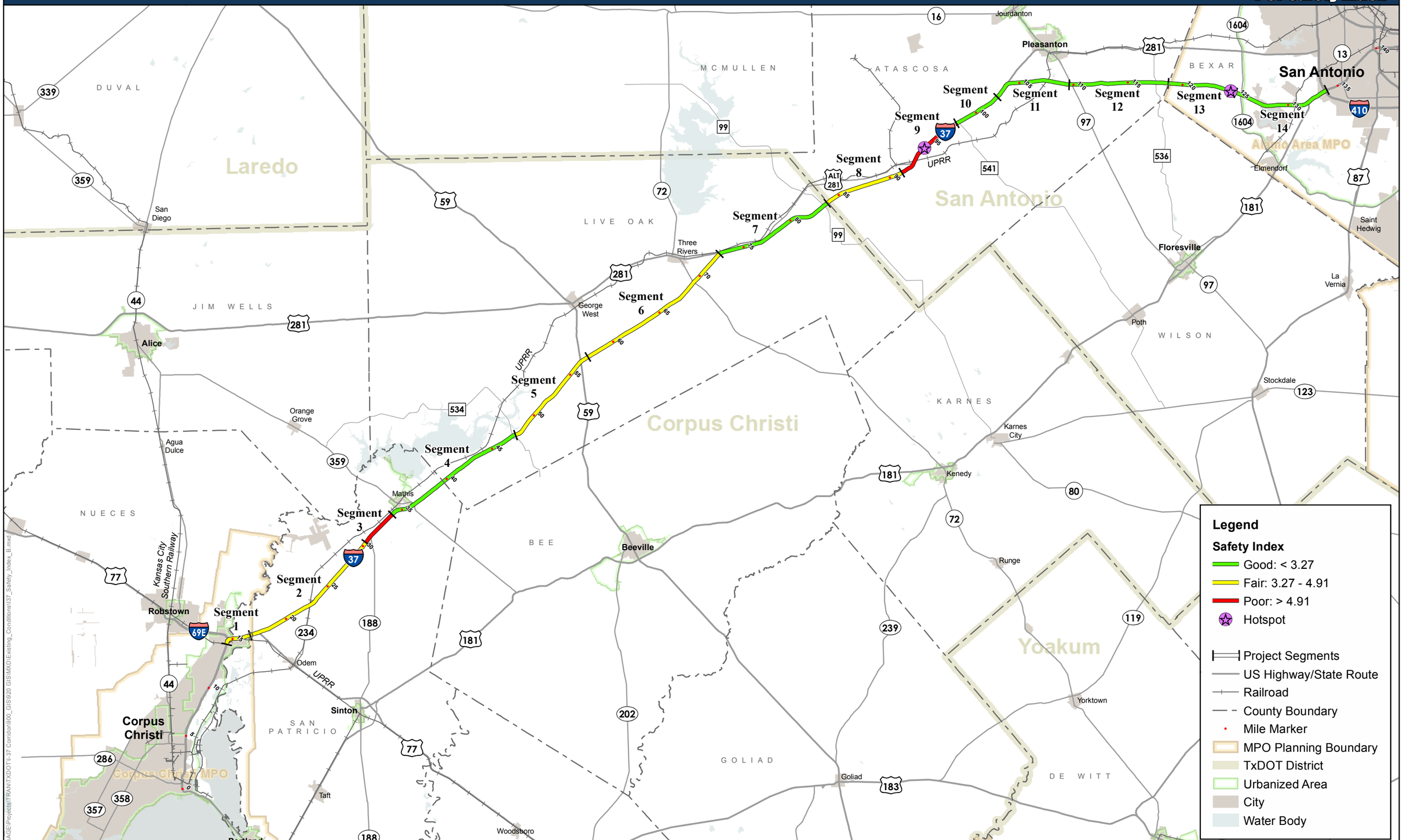
I-37 Safety Index



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I-37 Directional Mainline Rates

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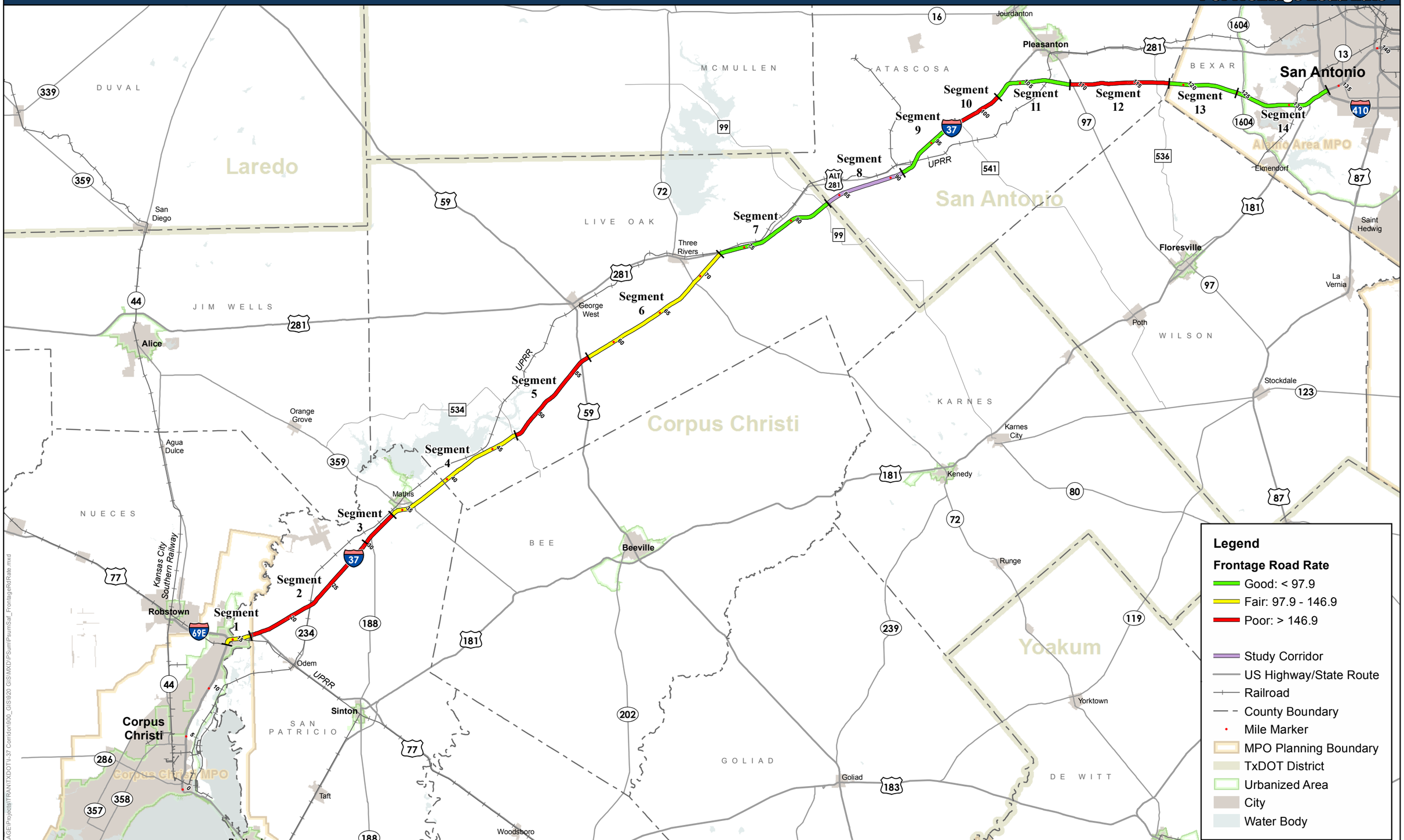
I-37 Frontage Road Rate



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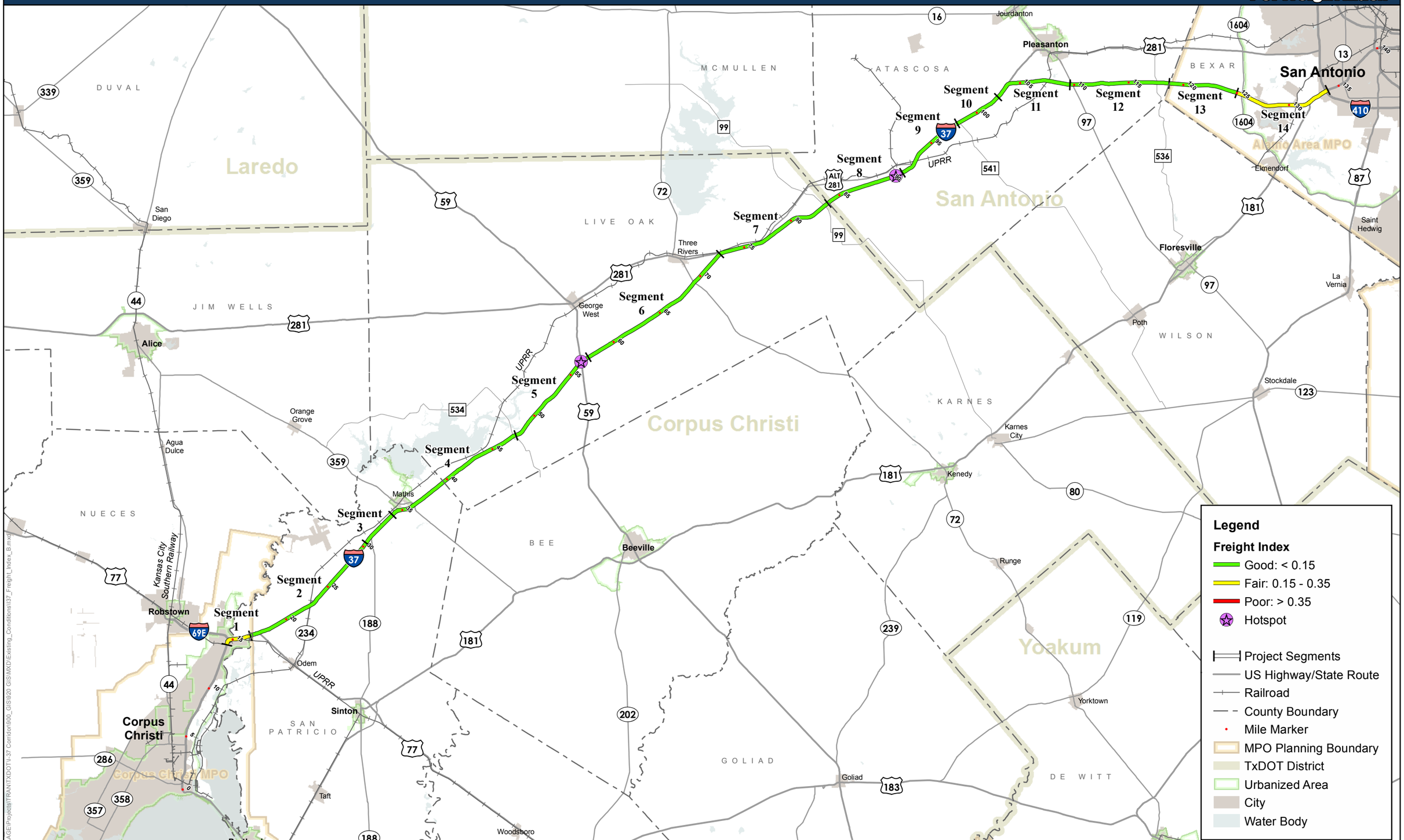
I-37 Freight Index



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I-37 Directional TTI (trucks only)

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I-37 Directional PTI (Trucks only)

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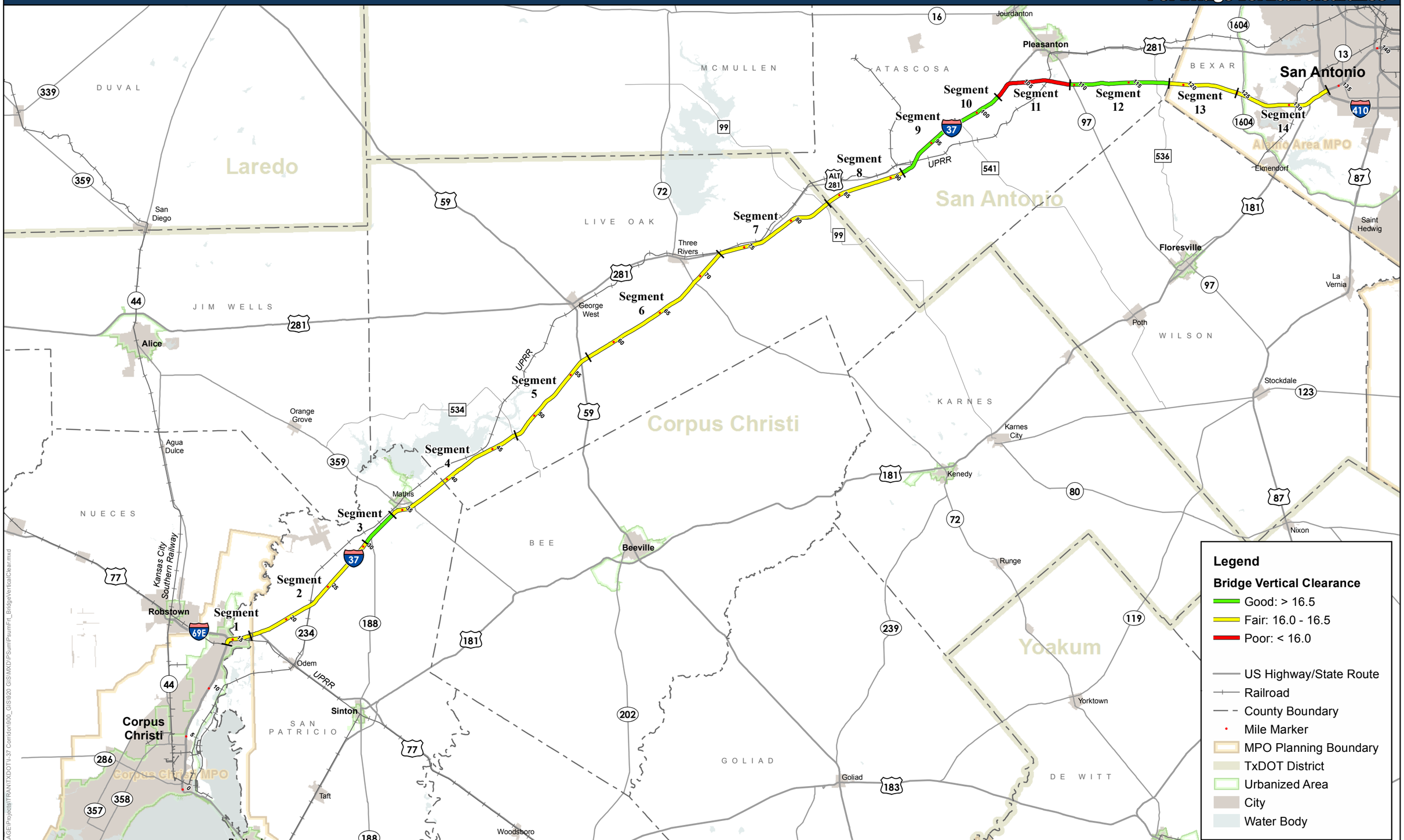
I-37 Bridge Vertical Clearance



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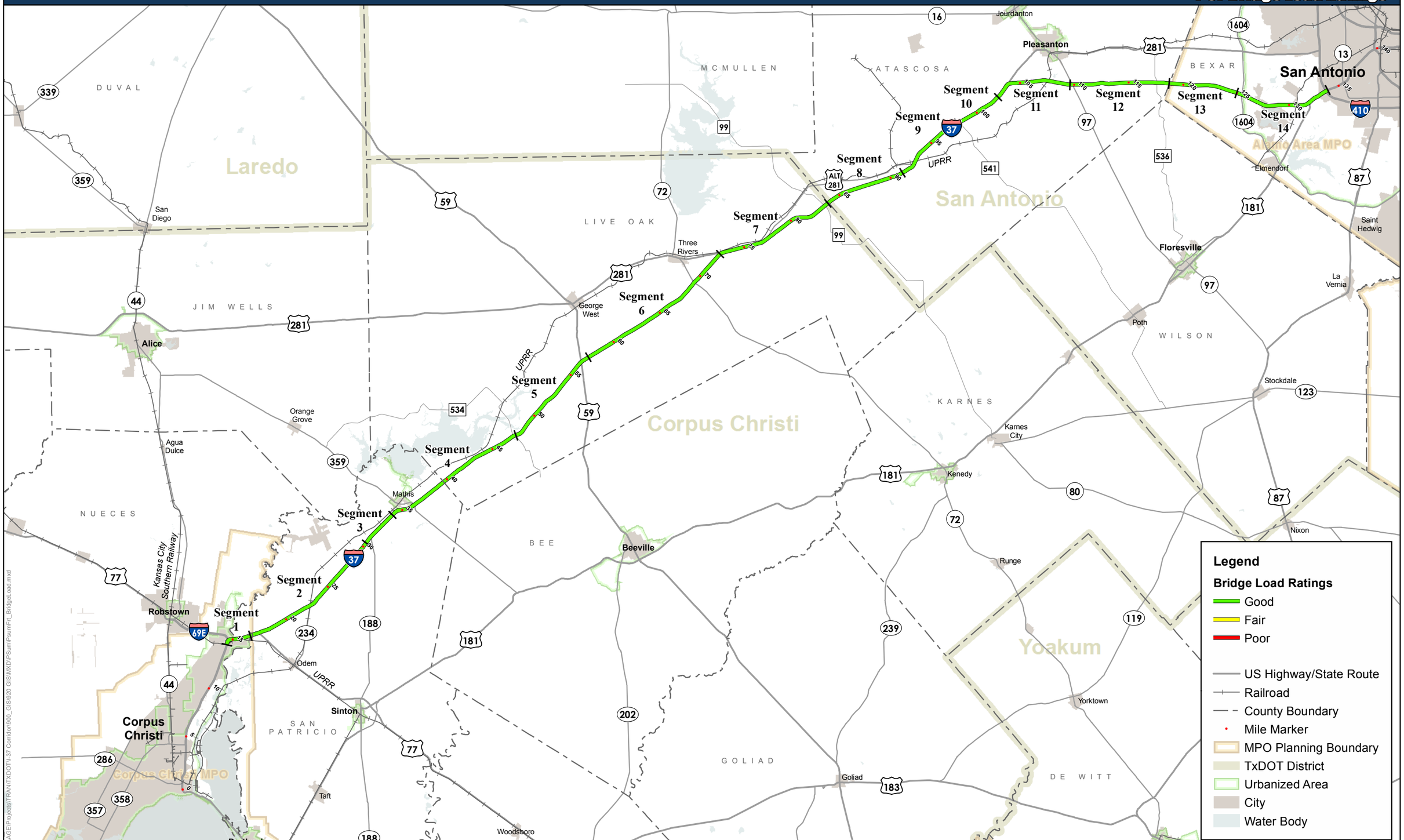
I-37 Bridge Load Ratings



APPENDIX D

DATA AND CALCULATIONS

PAVEMENT DATA

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
SEGMENT 1																								
14	14.5	0.5	3	3	1.5	1.5	93	93	4	99	99	3.7	14	14.5	0.5	2	1	78	14	14.2	0.2	2	0.4	59
14.5	15	0.5	3	3	1.5	1.5	96	96	3.8	98	98	3.8	14.5	15	0.5	2	1	84	14.7	15	0.3	2	0.6	99
15	15.5	0.5	3	3	1.5	1.5	97	97	3.8	85	85	3.7	15	15.5	0.5	2	1	100	15	15.5	0.5	2	1	100
15.5	16	0.5	3	3	1.5	1.5	84	84	4	97	97	4.3	15.5	16	0.5	2	1	100	15.5	16	0.5	2	1	100
16	16.6	0.6	3	3	1.8	1.8	91	91	4.4	99	99	4.1	16	16.6	0.6	2	1.2	100	16	16.6	0.6	2	1.2	100
16.6	17	0.4	3	3	1.2	1.2	100	100	3.6	100	100	4			0	2	0	58			0	2	0	69
Secondary Measure Value					9	9	**93.20**	93.20	**3.96**	**96.30**	96.30	**3.94**					5.2	**92.69**					4.2	**95.95**
Weights								20			20							1						1
									42															
Pavement Index									**94.73**															
SEGMENT 2																								
17	17.5	0.5	2	2	1	1	100	100	3.8	88	88	3.5	17.6	18	0.4	2	0.8	100	17.1	17.6	0.5	2	1	100
17.5	18	0.5	2	2	1	1	100	100	4.6	93	93	4.5	18	18.5	0.5	2	1	100	17.6	18	0.4	2	0.8	100
18	18.5	0.5	2	2	1	1	100	100	4.7	100	100	4.4	18.5	19	0.5	2	1	100	18	18.5	0.5	2	1	100
18.5	19	0.5	2	2	1	1	100	100	4.6	100	100	4.1	19	19.5	0.5	2	1	94	18.5	19	0.5	2	1	90
19	19.5	0.5	2	2	1	1	100	100	4.7	100	100	4.2	19.5	20	0.5	2	1	81	19	19.5	0.5	2	1	71
19.5	20	0.5	2	2	1	1	100	100	4.4	100	100	4.1	20	20.5	0.5	2	1	71	19.5	20	0.5	2	1	82
20	20.5	0.5	2	2	1	1	100	100	4.7	99	99	4.2	20.5	21	0.5	2	1	100	20	20.5	0.5	2	1	54
20.5	21	0.5	2	2	1	1	100	100	4.7	100	100	4.5	21	21.5	0.5	2	1	64	20.5	21	0.5	2	1	85
21	21.5	0.5	2	2	1	1	100	100	4.6	100	100	4.4	21.5	22	0.5	2	1	21	21	21.5	0.5	2	1	23
21.5	22	0.5	2	2	1	1	100	100	4.6	100	100	4.4	22	22.6	0.6	2	1.2	74	21.5	22	0.5	2	1	62
22	22.5	0.5	2	2	1	1	100	100	4.7	100	100	4.4	22.6	23	0.4	2	0.8	90	22	22.5	0.5	2	1	76
22.5	23	0.5	2	2	1	1	100	100	4.7	100	100	4.3	23	23.5	0.5	2	1	40	22.5	23	0.5	2	1	77
23	23.5	0.5	2	2	1	1	100	100	4.6	89	89	4.3	23.5	24	0.5	2	1	64	23	23.5	0.5	2	1	24
23.5	24	0.5	2	2	1	1	100	100	4.7	100	100	4.4	24	24.5	0.5	2	1	63	23.5	24	0.5	2	1	18
24	24.5	0.5	2	2	1	1	100	100	4.7	100	100	4.2	24.5	25	0.5	2	1	67	24	24.5	0.5	2	1	70
24.5	25	0.5	2	2	1	1	100	100	4.8	99	99	4	25	25.5	0.5	2	1	57	24.5	25	0.5	2	1	25
25	25.5	0.5	2	2	1	1	100	100	4.7	91	91	4.2	25.5	26	0.5	2	1	57	25	25.5	0.5	2	1	43
25.5	26	0.5	2	2	1	1	100	100	4.8	93	93	4	26	26.5	0.5	2	1	63	25.5	26	0.5	2	1	27
26	26.5	0.5	2	2	1	1	100	100	4.7	94	94	4.1	26.5	27	0.5	2	1	77	26	26.5	0.5	2	1	100
26.5	27	0.5	2	2	1	1	100	100	4.9	87	87	3.9	27	27.5	0.5	2	1	63	26.5	27	0.5	2	1	76
27	27.5	0.5	2	2	1	1	100	100	5	96	96	3.8	27.5	28	0.5	2	1	56	27	27.5	0.5	2	1	56
27.5	28	0.5	2	2	1	1	100	100	5	100	100	4.2	28	28.5	0.5	2	1	20	27.5	28	0.5	2	1	35

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
28	28.5	0.5	2	2	1	1	100	100	4.9	95	95	4.2	28.5	29	0.5	2	1	20	28	28.5	0.5	2	1	76
28.5	29	0.5	2	2	1	1	100	100	4.9	66	66	4.2	29	29.5	0.5	2	1	27	28.5	29	0.5	2	1	87
29	29.5	0.5	2	2	1	1	100	100	4.9	92	92	4.1	29.5	30	0.5	2	1	59	29	29.5	0.5	2	1	64
29.5	30	0.5	2	2	1	1	100	100	4.9	97	97	4.3	30	30.5	0.5	2	1	96	29.5	30	0.5	2	1	52
30	30.5	0.5	2	2	1	1	100	100	4.8	89	89	4.2	30.5	31	0.5	2	1	100	30	30.5	0.5	2	1	20
30.5	31	0.5	2	2	1	1	100	100	4.2	100	100	4.7			0	2			30.5	31	0.5	2	1	93
Secondary Measure Value					28	28	**100.00**	100.00	**4.69**	**95.29**	95.29	**4.21**					26.8	**67.19**					27.8	**63.53**
Weights								20			20							1						1
									42															
Pavement Index									**96.11**															
SEGMENT 3																								
31	31.5	0.5	2	2	1	1	100	100	4.7	100	100	4.7	31	31.5	0.5	2	1	81	31	31.5	0.5	2	1	77
31.5	32	0.5	2	2	1	1	100	100	4.7	100	100	4.8	31.5	32	0.5	2	1	56	31.5	32	0.5	2	1	30
32	32.5	0.5	2	2	1	1	100	100	4.8	100	100	4.8	32	32.5	0.5	2	1	46	32	32.5	0.5	2	1	58
32.5	33	0.5	2	2	1	1	100	100	4.8	100	100	4.9	32.5	33	0.5	2	1	78	32.5	33	0.5	2	1	90
33	33.5	0.5	2	2	1	1	100	100	4.8	99	99	4.8	33	33.5	0.5	2	1	62	33	33.5	0.5	2	1	93
33.5	34	0.5	2	2	1	1	100	100	4.2	88	88	4.9	33.5	34	0.5	2	1	32	33.5	34	0.5	2	1	57
Secondary Measure Value					6	6	**100.00**	100.00	**4.67**	**97.83**	97.83	**4.82**					6	**59.17**					6	**67.50**
Weights								20			20							1						1
									42															
Pavement Index									**97.22**															
SEGMENT 4																								
34	34.5	0.5	2	2	1	1	59	59	3.4	96	96	4.7	34	34.8	0.8	2	1.6	96	34	34.6	0.6	2	1.2	75
34.5	35	0.5	2	2	1	1	52	40	2.8	100	100	4.6	36.2	37	0.8	2	1.6	97	34.7	35	0.3	2	0.6	100
35	35.5	0.5	2	2	1	1	44	42	3.1	95	95	4.8	37	37.5	0.5	2	1	100	35	35.5	0.5	2	1	100
35.5	36	0.5	2	2	1	1	52	52	3.4	96	96	4.8	37.5	38	0.5	2	1	69	35.5	36	0.5	2	1	100
36	36.5	0.5	2	2	1	1	57	57	3.8	100	100	4.8	38	38.5	0.5	2	1	20	36	36.2	0.2	2	0.4	100
36.5	37	0.5	2	2	1	1	100	100	4.7	99	99	4.7	38.5	39	0.5	2	1	27			0	2	0	
37	37.5	0.5	2	2	1	1	100	100	4.9	100	100	4.7	39	39.6	0.6	2	1.2	91			0	2	0	
37.5	38	0.5	2	2	1	1	100	100	4.9	100	100	4.8	39.6	40	0.4	2	0.8	44			0	2	0	
38	38.5	0.5	2	2	1	1	100	100	4.9	100	100	4.9	40	40.4	0.4	2	0.8	46			0	2	0	
38.5	39	0.5	2	2	1	1	100	100	4.8	100	100	5	40.4	41	0.6	2	1.2	100			0	2	0	

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
39	39.6	0.6	2	2	1.2	1.2	100	100	4.8	100	100	4.9	41	41.5	0.5	2	1	100			0	2	0	
39.6	40	0.4	2	2	0.8	0.8	69	69	3.8	88	88	4.5	41.5	42	0.5	2	1	100			0	2	0	
40	40.4	0.4	2	2	0.8	0.8	61	61	3.7	94	94	4.4	42	42.5	0.5	2	1	100			0	2	0	
40.4	41	0.6	2	2	1.2	1.2	76	76	3.6	90	90	4.5	42.5	43	0.5	2	1	100			0	2	0	
41	41.5	0.5	2	2	1	1	69	69	4	78	78	4.7	43	43.5	0.5	2	1	100			0	2	0	
41.5	42	0.5	2	2	1	1	71	71	4.2	76	76	4.8	43.5	44	0.5	2	1	100			0	2	0	
42	42.5	0.5	2	2	1	1	63	63	4.3	86	86	4.9	44	44.5	0.5	2	1	100			0	2	0	
42.5	43	0.5	2	2	1	1	52	52	3.5	78	78	4.5	44.5	45	0.5	2	1	100			0	2	0	
43	43.5	0.5	2	2	1	1	59	59	3.6	87	87	4.8	45	45.5	0.5	2	1	99			0	2	0	
43.5	44	0.5	2	2	1	1	71	71	3.8	80	80	4.8	45.5	46	0.5	2	1	100			0	2	0	
44	44.5	0.5	2	2	1	1	47	47	3.7	82	82	4.7	46	46.5	0.5	2	1	96			0	2	0	
44.5	45	0.5	2	2	1	1	51	51	3.8	91	91	4.9	46.5	47	0.5	2	1	100			0	2	0	
45	45.5	0.5	2	2	1	1	47	47	3.7	96	96	4.7	47	47.5	0.5	2	1	53			0	2	0	
45.5	46	0.5	2	2	1	1	45	45	3.6	89	89	4	47.5	48	0.5	2	1	100			0	2	0	
46	46.5	0.5	2	2	1	1	52	52	4.1	88	88	4.6			0	2	0				0	2	0	
46.5	47	0.5	2	2	1	1	79	79	4	91	91	4.8			0	2	0				0	2	0	
47	47.5	0.5	2	2	1	1	85	85	4.2	96	96	4.8			0	2	0				0	2	0	
47.5	48	0.5	2	2	1	1	72	72	4	91	91	4.5			0	2	0				0	2	0	
Secondary Measure Value			28	28	**69.36**		68.86	**3.97**	**91.74**		91.74	**4.70**				25.2	**86.27**					4.2	**92.86**	
Weights							20				20						1						1	
								42																
Pavement Index								**80.74**																

SEGMENT 5

48	48.5	0.5	2	2	1	1	76	76	4.2	91	91	4.4	48	48.5	0.5	2	1	100	48.8	49	0.2	2	0.4	97
48.5	49	0.5	2	2	1	1	53	53	3.9	92	92	3.9	48.5	49	0.5	2	1	100	49	49.5	0.5	2	1	100
49	49.5	0.5	2	2	1	1	72	72	4.4	98	98	4.1	49	49.5	0.5	2	1	99	49.5	50	0.5	2	1	100
49.5	50	0.5	2	2	1	1	54	54	3.9	96	96	4.2	49.5	50	0.5	2	1	100	50	50.5	0.5	2	1	100
50	50.5	0.5	2	2	1	1	72	72	4.5	95	95	4.6	50	50.5	0.5	2	1	100	50.5	51	0.5	2	1	99
50.5	51	0.5	2	2	1	1	71	71	4.5	90	90	4.5	50.5	51	0.5	2	1	100	51	51.5	0.5	2	1	100
51	51.5	0.5	2	2	1	1	62	62	4.5	89	89	4.6	51	51.5	0.5	2	1	100	51.5	52	0.5	2	1	100
51.5	52	0.5	2	2	1	1	81	81	4.4	95	95	4.8	51.5	52	0.5	2	1	100	52	52.5	0.5	2	1	99
52	52.5	0.5	2	2	1	1	87	87	4.3	97	97	4.6	52	52.5	0.5	2	1	100	52.5	53	0.5	2	1	99
52.5	53	0.5	2	2	1	1	62	62	4.5	93	93	4.8	52.5	53	0.5	2	1	100	53	53.5	0.5	2	1	99
53	53.5	0.5	2	2	1	1	68	68	4.2	89	89	4.8	53	53.5	0.5	2	1	100	53.5	54	0.5	2	1	100
53.5	54	0.5	2	2	1	1	87	87	4.2	90	90	4.7	53.5	54	0.5	2	1	92	54	54.5	0.5	2	1	100

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
54	54.5	0.5	2	2	1	1	89	89	4.3	97	97	4.7	54	54.5	0.5	2	1	100	54.5	55	0.5	2	1	100
54.5	55	0.5	2	2	1	1	83	83	4.3	94	94	4.7	54.5	55	0.5	2	1	100	55	55.5	0.5	2	1	100
55	55.5	0.5	2	2	1	1	74	74	4.1	100	100	4.6	55	55.5	0.5	2	1	100	55.5	56	0.5	2	1	97
55.5	56	0.5	2	2	1	1	63	63	3.9	100	100	4.5	55.5	56	0.5	2	1	100	56	56.5	0.5	2	1	100
56	56.5	0.5	2	2	1	1	69	69	4	92	92	4.2	56	56.5	0.5	2	1	69	56.5	57	0.5	2	1	89
56.5	57	0.5	2	2	1	1	51	51	3.6	87	87	4.3	56.5	57	0.5	2	1	64			0	2	0	
Secondary Measure Value					18	18	**70.78**	70.78	**4.21**	**93.61**	93.61	**4.50**					18	**95.78**					16.4	**98.83**
Weights								20			20							1						1
									42															
Pavement Index									**82.91**															
SEGMENT 6																								
57	57.5	0.5	2	2	1	1	59	59	4	96	96	4.3	57	57.5	0.5	2	1	100	57	57.5	0.5	2	1	69
57.5	58	0.5	2	2	1	1	84	84	4.1	88	88	4.1	57.5	58	0.5	2	1	100	57.5	58	0.5	2	1	90
58	58.5	0.5	2	2	1	1	72	72	4.1	91	91	4.4	58	58.5	0.5	2	1	100	58	58.5	0.5	2	1	100
58.5	59	0.5	2	2	1	1	84	84	4.3	89	89	4.3	58.5	59	0.5	2	1	100	58.5	59	0.5	2	1	100
59	59.5	0.5	2	2	1	1	80	80	4.2	88	88	3.9	59	59.5	0.5	2	1	100	59	59.5	0.5	2	1	97
59.5	60	0.5	2	2	1	1	65	65	3.7	86	86	3.7	59.5	60	0.5	2	1	100	59.5	60	0.5	2	1	100
60	60.5	0.5	2	2	1	1	60	60	4	91	91	4.5	60	60.5	0.5	2	1	91	60	60.5	0.5	2	1	93
60.5	61	0.5	2	2	1	1	59	59	3.9	87	87	4.1	60.5	61	0.5	2	1	97	60.5	61	0.5	2	1	94
61	61.5	0.5	2	2	1	1	72	72	4.1	94	94	4.2	61	61.5	0.5	2	1	100	61	61.5	0.5	2	1	93
61.5	62	0.5	2	2	1	1	63	63	4.2	80	80	4.4	61.5	62	0.5	2	1	100	61.5	62	0.5	2	1	99
62	62.5	0.5	2	2	1	1	73	73	4.2	86	86	4.5	62	62.5	0.5	2	1	85	62	62.5	0.5	2	1	78
62.5	63	0.5	2	2	1	1	67	67	4.2	84	84	4.7	62.5	63	0.5	2	1	71	62.5	63	0.5	2	1	92
63	63.5	0.5	2	2	1	1	63	63	4.2	87	87	4.4	63	63.5	0.5	2	1	92	63	63.5	0.5	2	1	100
63.5	64	0.5	2	2	1	1	59	59	4.1	88	88	4.4	63.5	64	0.5	2	1	100	63.5	64	0.5	2	1	99
64	64.5	0.5	2	2	1	1	72	72	4.4	90	90	4.5	64	64.5	0.5	2	1	68	64	64.5	0.5	2	1	93
64.5	65	0.5	2	2	1	1	58	58	4	87	87	4.2	64.5	65	0.5	2	1	70	64.5	65	0.5	2	1	94
65	65.5	0.5	2	2	1	1	45	45	3.4	89	89	3.8	65	65.5	0.5	2	1	65	65	65.5	0.5	2	1	92
65.5	66	0.5	2	2	1	1	39	39	3.4	87	87	4.4	65.5	66	0.5	2	1	97	65.5	66	0.5	2	1	47
66	66.5	0.5	2	2	1	1	55	55	4	83	83	4.1	66	66.5	0.5	2	1	94	66	66.5	0.5	2	1	49
66.5	67	0.5	2	2	1	1	84	84	4.1	70	70	3.9	66.5	67	0.5	2	1	100	66.5	67	0.5	2	1	3
67	67.5	0.5	2	2	1	1	58	58	3.9	86	86	3.9	67	67.5	0.5	2	1	64	67	67.5	0.5	2	1	7
67.5	68	0.5	2	2	1	1	78	78	4	79	79	4.4	67.5	68	0.5	2	1	99	67.5	68	0.5	2	1	11
68	68.5	0.5	2	2	1	1	58	58	4	75	75	4.6	68	68.5	0.5	2	1	98	68	68.5	0.5	2	1	18
68.5	69	0.5	2	2	1	1	46	46	3.9	88	88	3.7	68.5	69	0.5	2	1	99	68.5	69	0.5	2	1	19

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
69	69.5	0.5	2	2	1	1	73	73	4.2	72	72	4	69	69.5	0.5	2	1	80	69	69.5	0.5	2	1	42
69.5	70	0.5	2	2	1	1	90	90	4.3	93	93	4.3	69.5	70	0.5	2	1	97	69.5	70	0.5	2	1	59
70	70.5	0.5	2	2	1	1	88	88	4.3	86	86	4.3	70	70.5	0.5	2	1	99	70	70.5	0.5	2	1	62
70.5	71	0.5	2	2	1	1	84	84	4.5	84	84	4.4	70.5	71	0.5	2	1	99	70.5	71	0.5	2	1	87
71	71.5	0.5	2	2	1	1	85	85	4.5	83	83	4.4	71	71.5	0.5	2	1	100	71	71.5	0.5	2	1	70
71.5	72	0.5	2	2	1	1	87	87	4.4	80	80	4.2	71.5	72	0.5	2	1	90	71.5	72	0.5	2	1	49
72	72.5	0.5	2	2	1	1	69	69	3.7	90	90	3.8	72	72.5	0.5	2	1	53	72	72.5	0.5	2	1	83
72.5	73	0.5	2	2	1	1	78	78	3.7	92	92	3.8	72.5	73	0.5	2	1	11	72.5	73	0.5	2	1	2

Secondary Measure Value			32	32	**68.97**	68.97	**4.06**	**85.91**	85.91	**4.21**			32	**88.09**				32	**68.47**				
Weights						20			20					1					1				
							42																
Pavement Index							**77.48**																

SEGMENT 7

73	73.5	0.5	2	2	1	1	80	80	4.3	96	96	4.2	73	73.5	0.5	2	1	96	73	73.5	0.5	2	1	33
73.5	74	0.5	2	2	1	1	79	79	4.2	81	81	3.8	73.5	74	0.5	2	1	97	73.5	74	0.5	2	1	38
74	74.5	0.5	2	2	1	1	77	77	4.2	90	90	4	74	74.5	0.5	2	1	39	74	74.5	0.5	2	1	66
74.5	75	0.5	2	2	1	1	81	81	3.9	88	88	4.1	74.5	75	0.5	2	1	53	74.5	75	0.5	2	1	35
75	75.5	0.5	2	2	1	1	80	80	4.1	89	89	4.1	75	75.5	0.5	2	1	64	75	75.5	0.5	2	1	6
75.5	76	0.5	2	2	1	1	81	81	4.4	88	88	4.2	75.5	76	0.5	2	1	45	75.5	76	0.5	2	1	20
76	76.5	0.5	2	2	1	1	70	70	4	81	81	3.8	76	76.7	0.7	2	1.4	40	76	76.7	0.7	2	1.4	24
76.5	77	0.5	2	2	1	1	79	79	4.4	54	54	4.3	79.9	80	0.1	2	0.2	96	80.3	81	0.7	2	1.4	100
77	77.5	0.5	2	2	1	1	69	69	4	86	86	4	80	80.5	0.5	2	1	100	81	81.5	0.5	2	1	100
77.5	78	0.5	2	2	1	1	87	87	4	89	89	3.7	80.5	81	0.5	2	1	100	81.5	82	0.5	2	1	100
78	78.5	0.5	2	2	1	1	81	81	4.1	83	83	4	81	81.5	0.5	2	1	100	82	82.5	0.5	2	1	100
78.5	79	0.5	2	2	1	1	78	78	4.6	92	92	4	81.5	82	0.5	2	1	100	82.5	83	0.5	2	1	100
79	79.5	0.5	2	2	1	1	80	80	4.2	79	79	4.2	82	82.5	0.5	2	1	100	83	83.5	0.5	2	1	100
79.5	80	0.5	2	2	1	1	79	79	4.3	77	77	4.2	82.5	83	0.5	2	1	100						
80	80.5	0.5	2	2	1	1	87	87	4.3	77	77	3.7	83	83.5	0.5	2	1	100			0	2	0	69
80.5	81	0.5	2	2	1	1	76	76	4.2	80	80	3.8			0	2	0	58			0	2	0	69
81	81.5	0.5	2	2	1	1	83	83	4.2	90	90	4.1			0	2	0	58			0	2	0	69
81.5	82	0.5	2	2	1	1	82	82	4	81	81	3.8			0	2	0	58			0	2	0	69
82	82.5	0.5	2	2	1	1	91	91	4.4	91	91	4.3			0	2	0	58			0	2	0	69
82.5	83	0.5	2	2	1	1	71	71	4.4	78	78	3.8			0	2	0	58			0	2	0	69
83	83.5	0.5	2	2	1	1	75	75	4	76	76	3.8			0	2	0	58			0	2	0	69
83.5	83.9	0.4	2	2	0.8	0.8	90	90	4.3	67	66	3.2			0	2	0	58			0	2	0	69

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
83.9	84	0.1	2	2	0.2	0.2	87	87	3.3	100	100	4.5			0	2	0	58			0	2	0	69
Secondary Measure Value					22	22	**79.79**	79.79	**4.20**	**82.71**	82.67	**3.97**					14.6	**80.08**					13.8	**63.16**
Weights								20			20							1						1
									42															
Pavement Index									**80.77**															
SEGMENT 8																								
84	84.5	0.5	2	2	1	1	86	86	4.1	100	100	4			0	2	0	58			0	2	0	69
84.5	85	0.5	2	2	1	1	86	86	4.2	76	76	4.2			0	2	0	58			0	2	0	69
85	85.5	0.5	2	2	1	1	71	71	3.4	91	91	4.7			0	2	0	58			0	2	0	69
85.5	86	0.5	2	2	1	1	98	98	4	100	100	4.6			0	2	0	58			0	2	0	69
86	86.5	0.5	2	2	1	1	72	72	3.6	87	87	4.5			0	2	0	58			0	2	0	69
86.5	87	0.5	2	2	1	1	64	64	3.5	99	99	4.5			0	2	0	58			0	2	0	69
87	87.5	0.5	2	2	1	1	70	70	3.7	100	100	4.5			0	2	0	58			0	2	0	69
87.5	88	0.5	2	2	1	1	88	88	3.6	99	99	4.4			0	2	0	58			0	2	0	69
88	88.6	0.6	2	2	1.2	1.2	99	99	4.1	100	100	4.3			0	2	0	58			0	2	0	69
88.6	89	0.4	2	2	0.8	0.8	100	100	4.3	100	100	3.4			0	2	0	58			0	2	0	69
89	89.5	0.5	2	2	1	1	100	100	4.4	100	100	4.4			0	2	0	58			0	2	0	69
89.5	90	0.5	2	2	1	1	100	100	4.3	100	100	4.3			0	2	0	58			0	2	0	69
90	90.5	0.5	2	2	1	1	100	100	4.3	100	100	4.6			0	2	0	58			0	2	0	69
90.5	91	0.5	2	2	1	1	100	100	4.1	100	100	4.5			0	2	0	58			0	2	0	69
Secondary Measure Value					14	14	**88.13**	88.13	**3.97**	**96.57**	96.57	**4.36**					0	**0.00**					0	**0.00**
Weights								20			20							0						0
									40															
Pavement Index									**92.35**															
SEGMENT 9																								
91	91.5	0.5	2	2	1	1	85	85	4.3	100	100	4	91.9	92	0.1	2	0.2	64	92.4	93	0.6	2	1.2	100
91.5	92	0.5	2	2	1	1	77	77	3.5	100	100	3.7	92	92.5	0.5	2	1	100	93	93.5	0.5	2	1	90
92	92.5	0.5	2	2	1	1	82	82	3.7	99	99	4.3	92.5	93	0.5	2	1	100	93.5	94	0.5	2	1	97
92.5	93	0.5	2	2	1	1	59	59	3.4	100	100	3.6	93	93.5	0.5	2	1	100	94	94.5	0.5	2	1	100
93	93.5	0.5	2	2	1	1	52	50	3.1	100	100	4.4	93.5	94	0.5	2	1	100	94.5	95	0.5	2	1	100
93.5	94	0.5	2	2	1	1	88	88	3.3	100	100	4.5	94	94.5	0.5	2	1	49	95	95.5	0.5	2	1	100
94	94.5	0.5	2	2	1	1	100	100	4.5	100	100	4.7	94.5	95	0.5	2	1	83	95.5	96	0.5	2	1	100

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
94.5	95	0.5	2	2	1	1	100	100	4.6	100	100	4.5	95	95.5	0.5	2	1	86	96	96.5	0.5	2	1	100
95	95.5	0.5	2	2	1	1	100	100	4.5	100	100	4.2	95.5	96	0.5	2	1	47	96.5	97	0.5	2	1	95
95.5	96	0.5	2	2	1	1	100	100	4.5	100	100	4.3	96	96.5	0.5	2	1	33	97	97.5	0.5	2	1	100
96	96.5	0.5	2	2	1	1	100	100	4.5	100	100	4.5	96.5	97	0.5	2	1	99	97.5	98	0.5	2	1	100
96.5	97	0.5	2	2	1	1	99	99	4.5	100	100	4.8	97	97.5	0.5	2	1	99			0	2	0	69
97	97.5	0.5	2	2	1	1	99	99	3.9	100	100	4.7	97.5	98	0.5	2	1	98			0	2	0	69
97.5	98	0.5	2	2	1	1	96	96	4	100	100	4.7			0	2	0	58			0	2	0	69

Secondary Measure Value	14	14	**88.36**	88.21	**4.02**	**99.93**	99.93	**4.35**	12.2	**82.52**	11.2	**98.39**
Weights				20			20			1		1
					42							
Pavement Index					**93.90**							

SEGMENT 10

98	98.5	0.5	2	2	1	1	93	93	4.5	100	100	4.7	98	98.5	0.5	2	1	53	98	98.5	0.5	2	1	100
98.5	99	0.5	2	2	1	1	100	100	4.5	100	100	4.6	98.5	99	0.5	2	1	100	98.5	99	0.5	2	1	100
99	99.5	0.5	2	2	1	1	100	100	4.5	100	100	4.7	99	99.5	0.5	2	1	87	99	99.5	0.5	2	1	94
99.5	100	0.5	2	2	1	1	100	100	4.6	100	100	4.7	99.5	100	0.5	2	1	95	99.5	100	0.5	2	1	100
100	100.5	0.5	2	2	1	1	100	100	4.5	100	100	4.5	100	100.5	0.5	2	1	75	100	100.5	0.5	2	1	100
100.5	101	0.5	2	2	1	1	100	100	4.6	100	100	4.4	100.5	101	0.5	2	1	29	100.5	101	0.5	2	1	100
101	101.5	0.5	2	2	1	1	100	100	4.5	100	100	4.5	101	101.5	0.5	2	1	42	101	101.5	0.5	2	1	100
101.5	102	0.5	2	2	1	1	100	100	4.4	100	100	4.7	101.5	102	0.5	2	1	37	101.5	102	0.5	2	1	100
102	102.5	0.5	2	2	1	1	100	100	4.6	100	100	4.6	102	102.5	0.5	2	1	48	102	102.5	0.5	2	1	100
102.5	103	0.5	2	2	1	1	100	100	4.6	100	100	4.4	102.5	103	0.5	2	1	82	102.5	103	0.5	2	1	100

Secondary Measure Value	10	10	**99.30**	99.30	**4.53**	**100.00**	100.00	**4.58**	10	**64.80**	10	**99.40**
Weights				20			20			1		1
					42							
Pavement Index					**98.81**							

SEGMENT 11

103	103.5	0.5	2	2	1	1	100	100	4.5	100	100	4.5	103	103.5	0.5	2	1	90	103	103.5	0.5	2	1	100
103.5	104	0.5	2	2	1	1	100	100	4.1	100	100	4.6	103.5	104	0.5	2	1	64	103.5	104	0.5	2	1	53
104	104.5	0.5	2	2	1	1	100	100	3.9	100	100	4.4	104	104.4	0.4	2	0.8	64	109.9	110	0.1	2	0.2	64
104.5	105	0.5	2	2	1	1	100	100	3.9	100	100	4.4	107.7	108	0.3	2	0.6	90			0	2	0	69
105	105.5	0.5	2	2	1	1	93	93	4.4	100	100	4.4	108	108.6	0.6	2	1.2	100			0	2	0	69

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
105.5	106	0.5	2	2	1	1	89	89	4.1	100	100	3.7	109.9	110	0.1	2	0.2	8			0	2	0	69
106	106.5	0.5	2	2	1	1	86	86	3.8	100	100	3.7			0	2	0	58			0	2	0	69
106.5	107	0.5	2	2	1	1	100	100	4.5	100	100	4.3			0	2	0	58			0	2	0	69
107	107.5	0.5	2	2	1	1	96	96	4.7	100	100	4.5			0	2	0	58			0	2	0	69
107.5	108	0.5	2	2	1	1	68	68	4.1	100	100	3.8			0	2	0	58			0	2	0	69
108	108.5	0.5	2	2	1	1	99	99	3.8	100	100	4.7			0	2	0	58			0	2	0	69
108.5	109	0.5	2	2	1	1	91	91	4.6	100	100	3.9			0	2	0	58			0	2	0	69
109	109.5	0.5	2	2	1	1	97	97	3.9	100	100	4.6			0	2	0	58			0	2	0	69
109.5	110	0.5	2	2	1	1	88	88	4.4	100	100	4.2			0	2	0	58			0	2	0	69
Secondary Measure Value					14	14	**93.36**	93.36	**4.19**	**100.00**	100.00	**4.26**					4.8	**79.33**					2.2	**75.36**
Weights								20			20							1						1
									42															
Pavement Index									**95.76**															

SEGMENT 12

110	110.5	0.5	2	2	1	1	83	83	4.4	96	96	3.9	110	110.5	0.5	2	1	88	110	110.5	0.5	2	1	62
110.5	111	0.5	2	2	1	1	96	96	4.3	92	92	4.1	110.5	111	0.5	2	1	100	110.5	111	0.5	2	1	92
111	111.5	0.5	2	2	1	1	100	100	4.7	100	100	4.5	111	111.5	0.5	2	1	100	111	111.5	0.5	2	1	88
111.5	112	0.5	2	2	1	1	100	100	4.7	100	100	4.4	111.5	112	0.5	2	1	84	111.5	112	0.5	2	1	62
112	112.5	0.5	2	2	1	1	100	100	4.5	90	90	4.3	112	112.2	0.2	2	0.4	0	112	112.4	0.4	2	0.8	58
112.5	113	0.5	2	2	1	1	100	100	4.6	100	100	4.5	117.6	117.9	0.3	2	0.6	84			0	2	0	69
113	113.5	0.5	2	2	1	1	100	100	4.6	100	100	4.3			0	2	0	58			0	2	0	69
113.5	114	0.5	2	2	1	1	99	99	4.3	100	100	4.8			0	2	0	58			0	2	0	69
114	114.5	0.5	2	2	1	1	96	96	4.1	100	100	4.7			0	2	0	58			0	2	0	69
114.5	115	0.5	2	2	1	1	100	100	4.4	100	100	4.3			0	2	0	58			0	2	0	69
115	115.5	0.5	2	2	1	1	99	99	4.5	100	100	4.3			0	2	0	58			0	2	0	69
115.5	116	0.5	2	2	1	1	99	99	4.4	100	100	4.3			0	2	0	58			0	2	0	69
116	116.5	0.5	2	2	1	1	100	100	4.5	100	100	4.6			0	2	0	58			0	2	0	69
116.5	117	0.5	2	2	1	1	99	99	4.6	100	100	4.6			0	2	0	58			0	2	0	69
117	117.5	0.5	2	2	1	1	100	100	4.7	100	100	4.4			0	2	0	58			0	2	0	69
117.5	118	0.5	2	2	1	1	100	100	4.6	100	100	4.4			0	2	0	58			0	2	0	69
Secondary Measure Value					16	16	**98.19**	98.19	**4.49**	**98.63**	98.63	**4.40**					5	**84.48**					4.8	**73.00**
Weights								20			20							1						1
									42															

BMP	EMP	Length (miles)	Number of Lanes NBML	Number of Lanes SBML	Lanes x Length NBML	Lanes x Length SBML	Northbound Mainline DISTRESS SCORE	Northbound Mainline CONDITION SCORE	Northbound Mainline RIDE SCORE	Southbound Mainline DISTRESS SCORE	Southbound Mainline CONDITION SCORE	Southbound Mainline RIDE SCORE	Northbound Frontage BMP	Northbound Frontage EMP	Northbound Frontage Length (miles)	Northbound Frontage # of Lanes	Northbound Frontage L x Lanes	Northbound Frontage CONDITION SCORE	Southbound Frontage BMP	Southbound Frontage EMP	Southbound Frontage Length (miles)	Southbound Frontage # of Lanes	Southbound Frontage L x Lanes	Southbound Frontage CONDITION SCORE
Pavement Index									**97.47**															
SEGMENT 13																								
118	118.7	0.7	2	2	1.4	1.4	99	99	4.7	100	100	4.5			0	2	0	58	124.6	125	0.4	2	0.8	88
118.7	119	0.3	2	2	0.6	0.6	100	100	4.6	100	100	4.5			0	2	0	58			0	2	0	69
119	119.5	0.5	2	2	1	1	100	100	4.8	100	100	4.4			0	2	0	58			0	2	0	69
119.5	120	0.5	2	2	1	1	100	100	4.8	100	100	4.5			0	2	0	58			0	2	0	69
120	120.5	0.5	2	2	1	1	100	100	4.8	100	100	4.5			0	2	0	58			0	2	0	69
120.5	121	0.5	2	2	1	1	100	100	4.8	100	100	4.6			0	2	0	58			0	2	0	69
121	121.5	0.5	2	2	1	1	100	100	4.8	100	100	4.7			0	2	0	58			0	2	0	69
121.5	122	0.5	2	2	1	1	100	100	4.8	100	100	4.7			0	2	0	58			0	2	0	69
122	122.5	0.5	2	2	1	1	100	100	4.6	100	100	4.7			0	2	0	58			0	2	0	69
122.5	123	0.5	2	2	1	1	100	100	4.6	100	100	4.7			0	2	0	58			0	2	0	69
123	123.5	0.5	2	2	1	1	100	100	4.7	100	100	4.5			0	2	0	58			0	2	0	69
123.5	124	0.5	2	2	1	1	100	100	4.8	100	100	4.4			0	2	0	58			0	2	0	69
124	124.5	0.5	2	2	1	1	100	100	4.7	100	100	4.4			0	2	0	58			0	2	0	69
124.5	125	0.5	2	2	1	1	100	100	4.8	100	100	4.4			0	2	0	58			0	2	0	69
Secondary Measure Value					14	14	**99.90**	99.90	**4.74**	**100.00**	100.00	**4.54**					0	**0.00**					0.8	**88.00**
Weights								20			20							0						1
									41															
Pavement Index									**99.66**															
SEGMENT 14																								
125	125.5	0.5	2	2	1	1	100	100	4.8	100	100	4.5	125.3	126	0.7	2	1.4	84	125	125.5	0.5	2	1	10
125.5	126	0.5	2	2	1	1	100	100	4.8	100	100	4.6	126	126.6	0.6	2	1.2	64	125.5	126	0.5	2	1	13
126	126.5	0.5	2	2	1	1	100	100	4.5	100	100	4.5	126.8	127	0.2	2	0.4	60	126	126.6	0.6	2	1.2	84
126.5	127	0.5	2	2	1	1	96	96	4.2	100	100	4.3	127	127.5	0.5	2	1	78	126.8	127	0.2	2	0.4	61
127	127.5	0.5	2	2	1	1	99	99	4.7	100	100	4.7	127.5	128	0.5	2	1	100	127	127.5	0.5	2	1	57
127.5	128	0.5	2	2	1	1	100	100	4.6	100	100	4.5	128	128.5	0.5	2	1	90	127.5	127.9	0.4	2	0.8	52
128	128.5	0.5	2	2	1	1	100	100	4.7	100	100	4.7	128.5	129	0.5	2	1	71	128.6	129	0.4	2	0.8	72
128.5	129	0.5	2	2	1	1	100	100	4.7	100	100	4.6	129	129.5	0.5	2	1	99	129	129.5	0.5	2	1	41
129	129.5	0.5	2	2	1	1	100	100	4.3	100	100	4.4	129.5	130	0.5	2	1	100	129.5	130	0.5	2	1	70
129.5	130	0.5	2	2	1	1	100	100	4.6	100	100	4.3	130	130.2	0.2	2	0.4	22	130	130.1	0.1	2	0.2	11
130	130.5	0.5	2	2	1	1	100	100	4.4	100	100	4.2			0	2	0	58			0	2	0	69
130.5	131	0.5	2	2	1	1	100	100	4.6	100	100	4.4			0	2	0	58			0	2	0	69

			Number of Lanes		Lanes x Length		Northbound Mainline			Southbound Mainline			Northbound Frontage						Southbound Frontage					
BMP	EMP	Length (miles)	NBML	SBML	NBML	SBML	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	DISTRESS SCORE	CONDITION SCORE	RIDE SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE	BMP	EMP	Length (miles)	# of Lanes	L x Lanes	CONDITION SCORE
131	131.5	0.5	2	2	1	1	100	100	4.6	100	100	4.5			0	2	0	58			0	2	0	69
131.5	132	0.5	2	2	1	1	100	100	4.7	100	100	4.6			0	2	0	58			0	2	0	69
132	132.5	0.5	3	2	1.5	1	92	92	4.4	100	100	4.5			0	2	0	58			0	2	0	69
132.5	133	0.5	3	3	1.5	1.5	69	69	4.3	100	100	4.2			0	2	0	58			0	2	0	69
133	133.5	0.5	3	3	1.5	1.5	74	74	4.7	85	85	4.5			0	2	0	58			0	2	0	69
133.5	134	0.5	3	3	1.5	1.5	81	81	4.7	70	70	4.4			0	2	0	58			0	2	0	69
Secondary Measure Value					20	19.5	**93.45**	93.45	**4.57**	**96.54**	96.54	**4.46**					9.4	**81.40**					8.4	**49.71**
Weights								20			20							1						1
									41															
Pavement Index									**93.89**															

BRIDGE DATA

Structure Name	Structure #	Milepost	Deck Area (SF)	Bridge Sufficiency Rating	Bridge Index					Deck Area on Functionally Obsolete Bridges	Bridge Rating
					Deck (N58)	Super (N59)	Sub (N60)	Eval (N67)	Lowest		
Segment 1											
IH 37 CROSSOVER OP	406191	14.24	6,640	78.00	7	8	7	7	7.0	6,640	
US 77 SB CONN UP	406007	14.53	16,520	90.00	7	8	7	7	7.0	0	
US 77 NB CONN UP	406193	14.58	24,880	92.30	7	8	7	7	7.0	24,880	
IH 37 CONN FM 624 OP	406192	14.59	15,456	92.20	7	7	7	7	7.0	15,456	
US 77 SB OP	406196	14.73	2,464	92.80	7	8	7	7	7.0	2,464	
IH 37 & US 77 UP	406194	14.81	13,632	94.40	8	7	7	7	7.0	13,632	
SHARPSBURG RD OP	406197	15.31	15,930	95.10	7	7	7	7	7.0	0	
SHARPSBURG RD OP	406195	15.31	19,170	95.10	7	8	6	6	6.0	0	
NUECES RIVER OP	405048	16.64	163,377	74.70	6	6	6	5	5.0	0	
NUECES RIVER OP	405199	16.60	163,201	81.30	6	6	6	6	6.0	0	
Total			441,270								
Weighted Average				81.70					5.85	14.29%	
Factor				1.00					1.00	1.00	
Indicator Score				**81.70**						**14.29%**	**5**
Bridge Index									**5.85**		
Segment 2											
CONN TO US 77 NB UP	405112	17.18	10,324	97.00	8	7	6	6	6.0	0	
US 77 SB OP	405189	17.43	15,985	97.00	6	7	7	7	6.0	0	
CR 1726-COOPER RD UP	405111	20.58	11,320	79.00	7	7	7	5	5.0	0	
IH 37 WFR UP	405039	22.66	N/A	#VALUE!	N	6	7		6.0	0	
SH 234 & UPRR OP	405109	22.61	14,382	78.80	7	7	7	7	7.0	0	
SH 234 & UPRR OP	405110	22.62	14,382	94.00	6	7	7	7	6.0	0	
IH 37 WFR UP	405038	22.64	4,259	58.30	6	6	5	5	5.0	4,259	
FM 796 UP	405108	23.12	12,355	87.30	6	7	7	6	6.0	0	
CR 21 UP	405116	25.59	16,109	97.00	6	7	6	6	6.0	0	
FM 630 UP	405117	28.41	15,428	96.80	7	7	7	7	7.0	0	
ARROYO NOMBRE DE DIOS OP	404120	30.52	4,973	99.90	7	7	6	6	6.0	0	
ARROYO NOMBRE DE DIOS OP	404119	30.53	7,310	92.50	6	6	6	6	6.0	0	
ARROYO NOMBRE DE DIOS OP	404118	30.52	6,911	72.50	7	6	6	6	6.0	6,911	
ARROYO NOMBRE DE DIOS OP	404009	30.56	6,090	99.90	6	7	7	7	6.0	0	
Total			139,827								
Weighted Average				90.09					6.10	7.99%	
Factor				1.00					1.00	1.00	
Indicator Score				**90.09**						**7.99%**	**5**
Bridge Index									**6.10**		
Segment 3											

SH 188 UP	404121	31.09	15,418	95.50	7	7	7	7	7.0	0	
Total			15,418								
Weighted Average				95.50					7.00	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**95.50**						**0.00%**	**7**
Bridge Index									**7.00**		
Segment 4											
SPUR 459 OP	403123	34.56	10,632	95.10	7	7	6	6	6.0	0	
SPUR 459 OP	403124	34.56	10,632	77.80	7	7	6	6	6.0	0	
ABANDONED RR OP	403125	35.82	9,054	95.20	7	7	6	6	6.0	0	
ABANDONED RR OP	403126	35.82	7,974	76.00	7	7	6	6	6.0	7,974	
SH 359 OP	403127	36.15	13,290	97.20	7	7	7	7	7.0	0	
SH 359 OP	403128	36.15	13,290	78.00	7	8	7	7	7.0	0	
FM 3377 UP	403130	38.02	11,616	96.90	7	7	7	7	7.0	0	
FM 888 OP	402133	40.39	9,657	92.40	7	7	7	7	7.0	0	
FM 888 OP	402134	40.39	9,657	91.40	7	7	7	7	7.0	0	
RUFE WMS HOLLOW OP	402138	42.85	5,360	91.50	7	7	7	7	7.0	0	
RUFE WMS HOLLOW OP	402137	42.85	5,360	92.50	6	7	7	7	6.0	0	
CR 350 UP	402140	45.10	10,672	98.00	7	7	7	7	7.0	0	
WEATHERSBY HOLLOW OP	402141	45.86	9,392	92.40	6	6	7	6	6.0	0	
WEATHERSBY HOLLOW OP	402142	45.86	9,392	91.40	6	6	7	6	6.0	0	
FM 534 UP	402144	47.22	14,382	96.70	7	7	7	7	7.0	0	
Total			150,361								
Weighted Average				91.01					6.58	5.30%	
Factor				1.00					1.00	1.00	
Indicator Score				**91.01**						**5.30%**	**6**
Bridge Index									**6.58**		
Segment 5											
MUSTANG CREEK OP	402160	48.62	9,259	97.30	6	7	6	6	6.0	0	
MUSTANG CREEK OP	402161	48.63	9,037	96.30	7	7	6	6	6.0	0	
HAILEY RNCH CR 356 UP	402156	51.19	7,924	85.20	7	6	7	6	6.0	0	
LA PARA CREEK OP	402152	52.09	7,280	97.50	7	7	7	7	7.0	0	
LA PARA CREEK OP	402153	52.11	10,560	94.90	7	7	7	7	7.0	0	
LA PARA CREEK OP	402154	52.12	10,560	96.20	7	7	7	7	7.0	0	
LA PARA CREEK OP	402019	52.11	7,968	91.30	7	6	7	6	6.0	0	
HAILEY HOLLOW OP	402149	54.30	5,940	97.20	8	7	7	7	7.0	0	
HAILEY HOLLOW OP	402150	54.32	5,940	96.20	7	7	7	7	7.0	0	
US 59 OP	402148	56.48	15,106	96.20	7	6	7	6	6.0	0	
US 59 OP	402147	56.49	15,018	97.20	7	6	7	6	6.0	0	
Total			104,592								
Weighted Average				95.26					6.39	0.00%	

Factor				1.00					1.00	1.00	
Indicator Score				**95.26**						**0.00%**	**6**
Bridge Index									**6.39**		
Segment 6											
GAMBLE GULLY OP	402145	57.01	8,800	91.40	8	7	7	7	7.0	0	
GAMBLE GULLY OP	402146	57.01	8,800	90.40	8	8	7	7	7.0	0	
LITTLE GAMBLE GULLY OP	401167	59.12	3,987	97.20	8	7	7	7	7.0	0	
LITTLE GAMBLE GULLY OP	401168	59.11	3,987	96.20	7	6	7	6	6.0	0	
FM 799 OP	401165	59.72	9,525	97.20	7	7	7	7	7.0	0	
FM 799 OP	401166	59.72	9,525	96.20	7	8	7	7	7.0	0	
WALLER CREEK OP	401163	61.02	7,974	97.10	7	7	7	7	7.0	0	
WALLER CREEK OP	401164	61.04	7,974	96.10	7	7	7	7	7.0	0	
SULPHUR CREEK OP	401033	65.30	9,828	88.80	5	6	6	6	5.0	0	
SULPHUR CREEK OP	401177	65.27	4,200	96.00	7	7	6	6	6.0	0	
SULPHUR CREEK OP	401178	65.24	12,800	97.00	7	8	7	7	7.0	0	
SULPHUR CREEK OP	401179	65.24	12,800	96.00	7	8	7	7	7.0	0	
FM 1358/LEMLEY ST UP	401180	65.75	12,300	98.00	7	7	7	7	7.0	0	
CR 207 UP	401181	67.20	8,400	91.00	7	8	7	6	6.0	0	
ROCK QUARRY BRANCH OP	401182	68.58	7,200	97.10	6	8	7	7	6.0	0	
ROCK QUARRY BRANCH OP	401183	68.60	7,200	96.10	7	8	7	7	7.0	0	
SH 72 OP	401184	69.18	11,800	96.30	7	6	7	6	6.0	0	
SH 72 OP	401185	69.18	11,800	96.10	7	7	7	7	7.0	0	
HACKBERRY CREEK OP	401175	72.13	6,800	84.00	7	8	7	7	7.0	0	
HACKBERRY CREEK OP	401176	72.14	6,800	84.00	7	8	7	7	7.0	0	
HACKBERRY CREEK OP	401174	72.12	4,760	98.00	7	8	7	7	7.0	0	
US 281 NB & EFR OP	307248	72.81	16,280	84.00	7	7	7	7	7.0	0	
US 281 NB & EFR OP	307247	72.80	16,720	84.00	7	7	7	7	7.0	0	
Total			210,259								
Weighted Average				92.80					6.74	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**92.80**						**0.00%**	**5**
Bridge Index									**6.74**		
Segment 7											
BRUSH PEN HOLLOW CREEK OP	307021	76.15	4,452	88.50	6	7	7	6	6.0	0	
BRUSH PEN HOLLOW CREEK OP	307210	76.16	5,441	89.70	7	7	7	7	7.0	0	
BRUSH PEN HOLLOW CREEK OP	307211	76.16	5,441	89.70	7	7	7	7	7.0	0	
BRUSH PEN HOLLOW CREEK OP	307212	76.15	3,509	93.50	7	7	7	7	7.0	0	
FM 2049 UP	307213	76.69	11,616	97.70	7	8	7	7	7.0	0	
SAN CHRISTOVAL CREEK OP	307214	77.29	9,672	88.90	8	7	7	7	7.0	0	
SAN CHRISTOVAL CREEK OP	307215	77.29	9,672	88.90	8	7	7	7	7.0	0	
FRONTAGE ROAD CROSSING OP	307218	80.87	5,441	88.90	7	8	7	7	7.0	0	

FRONTAGE ROAD CROSSING OP	307217	80.87	5,441	88.90	7	8	7	7	7.0	0	
SALT BRANCH CREEK OP	307223	83.08	6,254	98.90	6	6	7	6	6.0	0	
SALT BRANCH CREEK OP	307221	83.07	8,060	88.90	8	7	7	7	7.0	0	
SALT BRANCH CREEK OP	307222	83.08	8,060	89.90	8	8	7	7	7.0	0	
SALT BRANCH CREEK OP	307224	83.10	4,670	98.90	7	7	7	7	7.0	0	
FM 99 UP	307225	83.47	11,616	97.00	7	7	7	7	7.0	0	
OLMOS CREEK OP	306193	83.91	10,632	95.80	7	7	7	7	7.0	0	
OLMOS CREEK OP	306194	83.91	10,632	96.80	8	7	7	7	7.0	0	
Total			120,607								
Weighted Average				93.00					6.91	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**93.00**						**0.00%**	**6**
Bridge Index									**6.91**		
Segment 8											
LIPAN CREEK OP	306188	88.41	12,169	100.00	7	7	7	7	7.0	0	
LIPAN CREEK OP	306189	88.40	20,821	97.00	7	7	7	7	7.0	0	
LIPAN CREEK OP	306190	88.40	20,821	97.00	8	7	6	6	6.0	0	
LIPAN CREEK OP	306191	88.41	12,169	100.00	8	7	7	7	7.0	0	
FM 1099 & DRAIN OP	306172	88.56	11,961	97.00	8	7	7	7	7.0	0	
FM 1099 & DRAIN OP	306173	88.57	11,961	97.00	7	7	7	7	7.0	0	
FM 791 UP	306169	90.44	11,616	84.30	7	5	7	5	5.0	0	
Total			101,518								
Weighted Average				96.27					6.57	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**96.27**						**0.00%**	**5**
Bridge Index									**6.57**		
Segment 9											
BORREGO CREEK OP	306165	91.23	24,365	96.50	8	7	7	7	7.0	0	
BORREGO CREEK OP	306166	91.22	24,365	96.50	7	7	6	6	6.0	0	
ATASCOSA RIVER OP	305163	91.44	25,694	95.50	8	7	6	6	6.0	0	
ATASCOSA RIVER OP	305164	91.43	25,694	93.50	7	7	7	7	7.0	0	
US 281A CONN OP	305161	92.42	8,860	94.50	7	6	7	6	6.0	0	
US 281A CONN OP	305160	92.43	8,860	96.50	8	7	7	7	7.0	0	
UPRR OP	305013	92.74	7,518	87.20	7	6	6	6	6.0	0	
UPRR OP	305159	92.75	9,082	94.80	7	6	7	6	6.0	0	
UPRR OP	305158	92.76	9,082	96.80	8	6	7	6	6.0	0	
UPRR OP	305157	92.80	9,306	98.00	7	7	7	7	7.0	0	
Total			152,825								
Weighted Average				95.26					6.45	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**95.26**						**0.00%**	**6**

Bridge Index									**6.45**		
Segment 10											
FM 541 OP	305153	98.19	6,424	96.80	7	8	7	7	7.0	0	
FM 541 OP	305154	98.19	6,424	94.80	7	7	7	7	7.0	0	
Total			12,847								
Weighted Average				95.80					7.00	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**95.80**						**0.00%**	**7**
Bridge Index									**7.00**		
Segment 11											
US 281 NB CONN UP	310258	103.97	9,804	97.00	7	8	7	7	7.0	0	
SP 199 UP	310257	104.44	7,560	83.00	8	8	7	7	7.0	0	
COUGHRAN RD UP	310254	106.44	9,720	96.90	8	6	7	6	6.0	0	
UPRR & ATASCOSA RIVER OP	310251	107.52	38,800	85.10	6	7	5	5	5.0	0	
UPRR & ATASCOSA RIVER OP	310252	107.53	36,800	83.10	6	7	5	5	5.0	0	
CORGEY RD UP	310250	108.55	7,560	80.20	7	6	5	5	5.0	0	
SH 97 EB UP	310244	109.82	12,221	98.50	7	8	7	7	7.0	0	
SH 97 WB UP	310245	109.83	12,221	98.50	7	7	7	7	7.0	0	
Total			134,686								
Weighted Average				88.31					5.69	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**88.31**						**0.00%**	**5**
Bridge Index									**5.69**		
Segment 12											
FM 3006 UP	310234	113.81	13,104	97.30	7	6	7	6	6.0	0	
FM 1784 OP	310229	116.22	9,200	97.00	8	7	6	6	6.0	0	
FM 1784 OP	310228	116.24	9,800	96.00	8	7	6	6	6.0	0	
FM 536 UP	310097	117.57	9,412	97.80	8	7	7	7	7.0	0	
Total			41,516								
Weighted Average				97.04					6.23	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**97.04**						**0.00%**	**6**
Bridge Index									**6.23**		
Segment 13											
HARDY RD UP	309096	121.00	9,438	96.80	8	8	6	6	6.0	0	
PRIEST-MATHIS RD UP	309095	122.70	9,438	96.40	8	7	7	7	7.0	0	
Total			18,876								
Weighted Average				96.60					6.50	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**96.60**						**0.00%**	**6**
Bridge Index									**6.50**		

Segment 14											
LOOP 1604 OP	309091	125.43	10,575	92.70	7	7	7	7	7.0	0	
LOOP 1604 OP	309092	125.43	10,575	92.70	7	7	7	7	7.0	0	
SAN ANTONIO RIVER OP	309089	126.59	55,020	96.90	7	7	7	7	7.0	0	
SAN ANTONIO RIVER OP	309090	126.59	55,020	96.80	7	7	7	7	7.0	0	
SOUTHTON RD (DONOP RD) OP	309087	130.07	5,076	94.80	7	7	7	7	7.0	0	
SOUTHTON RD (DONOP RD) OP	309088	130.07	5,076	94.80	7	6	7	6	6.0	0	
SP RR OP	308082	130.63	5,922	95.40	8	7	6	6	6.0	0	
SP RR OP	308083	130.63	5,922	95.40	7	7	6	6	6.0	0	
SPUR 122 / US 181 UP	308080	131.89	10,237	96.10	6	6	7	6	6.0	0	
OLD US 181/SPUR 122 OP	308177	132.62	13,046	93.10	6	6	7	6	6.0	0	
OLD US 181 / SPUR 122 OP	308176	132.60	12,826	93.10	6	7	7	7	6.0	0	
SALADO CREEK OP	308074	132.78	40,480	95.20	8	7	7	7	7.0	0	
SALADO CREEK OP	308073	132.78	38,870	95.20	8	8	7	7	7.0	0	
CORPUS CHRISTI RD OP	308071	133.39	11,781	95.20	6	7	7	7	6.0	0	
CORPUS CHRISTI RD OP	308072	133.39	12,240	95.20	6	7	7	7	6.0	0	
IH 37 NB TO 410 WB OP	308200	133.39	26,379	97.00	6	6	6	6	6.0	0	
IH 410 OP	308198	133.71	9,306	95.00	6	6	7	6	6.0	0	
IH 410 OP	308196	133.71	9,306	96.00	6	6	7	6	6.0	0	
IH 37 SB TO 410 EB OP	308197	134.11	26,379	95.60	6	6	6	6	6.0	0	
SALADO CREEK UP	308070	133.75	18,315	80.30	6	6	7	6	6.0	0	
Total			382,351								
Weighted Average				94.87					6.56	0.00%	
Factor				1.00					1.00	1.00	
Indicator Score				**94.87**						**0.00%**	**6**
Bridge Index									**6.56**		

CRASH DATA

Mainline Data

Segment Number	Segment Description	Begin MP	End MP	Length (mi)	Two-Way Total Volume		Southbound 2011-2015		Northbound 2011-2015		Dir. Unknown 2011-2015		Total 2011-2015					
					2015 ADT (vpd)	2015 VMT	Total Crash	K&A Crash	Total Crash	K&A Crash	Total Crash	K&A Crash	Total Crash	5-Year Avg Crash Rate	K&A Crash	5-Year Avg Crash Rate	NB Crash Rate	SB Crash Rate
1	I-69 to US 77	14	17	3	51,442	56,328,443	157	9	108	3	2	0	267	94.8	12	4.3	76.69	111.49
2	US 77 to SH 188	17	31	14	25,751	131,589,313	113	11	108	13	0	0	221	33.6	24	3.6	32.83	34.35
3	SH 188 to SH 359	31	34	3	25,055	27,435,225	34	4	32	5	0	0	66	48.1	9	6.6	46.66	49.57
4	SH 359 to CR 534	34	48	14	19,348	98,868,280	110	6	102	8	0	0	212	42.9	14	2.8	41.27	44.50
5	CR 534 to US 59	48	57	9	18,172	59,695,020	67	0	98	5	0	0	165	55.3	5	1.7	65.67	44.89
6	US 59 to US 281	57	73	16	20,429	119,306,820	99	9	103	10	0	0	202	33.9	19	3.2	34.53	33.19
7	US 281 to CR 99	73	84	11	28,008	112,450,113	78	7	76	11	0	0	154	27.4	18	3.2	27.03	27.75
8	CR 99 to US 281 ALT	84	91	7	22,708	58,018,940	63	7	63	5	0	0	126	43.4	12	4.1	43.43	43.43
9	US 281 ALT to FM 541	91	98	7	26,864	68,637,520	90	9	118	15	0	0	208	60.6	24	7.0	68.77	52.45
10	FM 541 to SH 199	98	103	5	27,800	50,735,000	34	1	60	5	0	0	94	37.1	6	2.4	47.30	26.81
11	SH 199 (Leal Rd) to SH 97	103	110	7	24,881	63,570,103	63	2	84	6	1	1	148	46.6	9	2.8	52.86	39.64
12	SH 97 to CR 536	110	118	8	33,510	97,849,200	114	6	86	3	0	0	200	40.9	9	1.8	35.16	46.60
13	CR 536 to SH 1604	118	125	7	37,674	96,255,793	54	7	51	5	7	0	112	23.3	12	2.5	21.19	22.44
14	SH 1604 to I-410	125	134	9	53,332	175,194,525	233	8	248	14	10	0	491	56.1	22	2.5	56.62	53.20
	Total Corridor			120			1,309	86	1,337	108	20	1	2,666		195			

Note: rate is crashes per 100 million VMT

Frontage Road Data

Segment Number	Segment Description	Length (mi)	Total Volume		Total 2011-2015			
			2015 ADT (vpd)	2015 VMT	Total Crash	5-Year Avg Crash Rate	K&A Crash	5-Year Avg Crash Rate
1	I-69 to US 77	3	2,164	2,369,580	17	143.5	1	8.4
2	US 77 to SH 188	14	247	1,263,448	9	142.5	0	0.0
3	SH 188 to SH 359	3	613	671,235	7	208.6	0	0.0
4	SH 359 to CR 534	14	456	2,330,160	14	120.2	1	8.6
5	CR 534 to US 59	9	297	974,003	25	513.3	3	61.6
6	US 59 to US 281	16	725	4,234,000	31	146.4	2	9.4
7	US 281 to CR 99	11	2,041	8,194,615	30	73.2	0	0.0
8	CR 99 to US 281 ALT	7	1,250	3,193,750	2	12.5	0	0.0
9	US 281 ALTto FM 541	7	293	748,615	3	80.1	0	0.0
10	FM 541 to SH 199 (Leal Rd)	5	N/A	N/A	4	N/A	0	N/A
11	SH 199 (Leal Rd) to SH 97	7	1,581	4,039,455	6	29.7	0	0.0
12	SH 97 to CR 536 (Old Pleasanton Rd)	8	699	2,041,080	15	147.0	1	9.8
13	CR 536 to SH 1604	7	9,427	24,085,985	0	0.0	0	0.0
14	SH 1604 to I-410	9	8,733	28,686,810	40	27.9	4	2.8
	Total Corridor	120			**203**		**12**	

MOBILITY DATA

Segment	Begin MP	End MP	Length (mi)	Facility Type	Flow Type	Terrain	No. of Lanes	Capacity Environment Type	Lane Width (feet)	NB Right Shoulder Width	SB Right Shoulder Width	NB Left Shoulder Width	SB Left Shoulder Width	NB AADT	SB AADT	2015 AADT	K Factor	D Factor	T Factor	Posted Speed Limit (mph)	Divided or Undivided
1	14	17	3	Rural	Uninterrupted	Level	6	Freeway Segment	12.00	12.00	10.00	N/A	N/A	24,700	26,700	51,400	9%	52%	17%	75	Divided
2	17	31	14	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	12,400	13,400	25,800	9%	52%	20%	75	Divided
3	31	34	3	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	11,800	13,300	25,100	9%	53%	21%	75	Divided
4	34	48	14	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	9,100	10,200	19,300	12%	53%	23%	75	Divided
5	48	57	9	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	8,600	9,600	18,200	12%	53%	24%	75	Divided
6	57	73	16	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	10,000	10,400	20,400	12%	51%	22%	75	Divided
7	73	84	11	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	14,300	13,700	28,000	12%	51%	25%	75	Divided
8	84	91	7	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	11,600	11,100	22,700	12%	51%	28%	75	Divided
9	91	98	7	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	13,700	13,200	26,900	12%	51%	26%	75	Divided
10	98	103	5	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	14,200	13,600	27,800	12%	51%	25%	75	Divided
11	103	110	7	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	12,700	12,200	24,900	12%	51%	27%	75	Divided
12	110	118	8	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	16,700	16,800	33,500	12%	50%	23%	75	Divided
13	118	125	7	Rural	Uninterrupted	Level	4	Freeway Segment	12.00	12.00	10.00	N/A	N/A	18,800	18,900	37,700	9%	50%	22%	75	Divided
14	125	134	9	Rural	Uninterrupted	Level	4.2	Freeway Segment	12.00	12.00	10.00	N/A	N/A	26,100	27,200	53,300	9%	51%	16%	70	Divided

Mainline Daily V/C Values									Secondary Measures							Avg. V/C		Weight Factor		Mobility Index
									Peak Congestion						Future Congestion					
Segment	Begin MP	End MP	Length (mi)	No. of Lanes	Existing AADT	Future AADT	Capacity	Mainline Avg V/C	NB DHV	NB Capacity	NB Existing V/C	SB DHV	SB Capacity	SB Existing V/C	Future V/C	Mainline	Frt Rds	Mainline	Frt Rds	
1	14	17	3	6	51,400	100,300	118,100	0.64	2223	6200	0.36	2403	6200	0.39	0.85	0.64	0.08	20	1	0.61
2	17	31	14	4	25,800	50,300	78,100	0.49	1116	4100	0.27	1206	4100	0.29	0.64	0.49	0.02	20	1	0.47
3	31	34	3	4	25,100	49,000	78,100	0.48	1062	4100	0.26	1197	4100	0.29	0.63	0.48	0.06	20	1	0.46
4	34	48	14	4	19,300	40,300	76,200	0.39	1092	4000	0.27	1224	4000	0.31	0.53	0.39	0.04	20	1	0.37
5	48	57	9	4	18,200	38,000	76,200	0.37	1032	4000	0.26	1152	4000	0.29	0.50	0.37	0.03	20	1	0.35
6	57	73	16	4	20,400	42,600	78,100	0.41	1200	4100	0.29	1248	4100	0.30	0.55	0.41	0.07	20	1	0.39
7	73	84	11	4	28,000	58,500	76,200	0.57	1716	4000	0.43	1644	4000	0.41	0.77	0.57	0.16	20	1	0.55
8	84	91	7	4	22,700	47,400	76,200	0.46	1392	4000	0.35	1332	4000	0.33	0.62	0.46	0.00	20	0	0.46
9	91	98	7	4	26,900	56,200	76,200	0.55	1644	4000	0.41	1584	4000	0.40	0.74	0.55	0.02	20	1	0.52
10	98	103	5	4	27,800	58,100	76,200	0.56	1704	4000	0.43	1632	4000	0.41	0.76	0.56	0.14	20	1	0.54
11	103	110	7	4	24,900	52,000	76,200	0.50	1524	4000	0.38	1464	4000	0.37	0.68	0.50	0.19	20	1	0.49
12	110	118	8	4	33,500	74,000	76,200	0.70	2004	4000	0.50	2016	4000	0.50	0.97	0.70	0.08	20	1	0.67
13	118	125	7	4	37,700	83,300	78,100	0.78	1692	4100	0.41	1701	4100	0.41	1.07	0.78	0.54	20	1	0.77
14	125	134	9	4.2	53,300	117,700	83,800	1.02	2453	4400	0.56	2557	4400	0.58	1.40	1.02	0.49	20	1	0.99

Location	Seg. #	Control	# of Approach Lanes	Approach Capacity (vph)	Total 2-way Capacity (vph)	Current AADT (vpd)	K (%)	Approach Vol (vph)	Current V/C	Daily Truck1 (%)	Daily Truck2 (%)	Peak Hr Eff T (%)	Future AADT (vpd)	Future V/C
CR 188	2	2-way stop	1	212	424	460	15	69	0.16	20		10.0	897	0.32
FM 630	2	2-way stop	1	129	257	51	18	9	0.04	33.3		16.7	99	0.07
SH 234	2	2-way stop	1	306	613	1118	10	112	0.18	9.2	8.8	6.3	2180	0.36
SH 188	3	2-way stop	1	258	516	1850	9	167	0.32	11.3		7.9	3608	0.63
Spur 459	3	2-way stop	2	631	1262	5178	11	570	0.45	12.1		6.1	10097	0.88
FM 3377	4	2-way stop	1	200	401	291	11	32	0.08	21.3		10.7	608	0.17
FM 534	4	2-way stop	1	290	580	1042	9	94	0.16	10.4	9	6.8	2178	0.34
FM 888	4	2-way stop	1	89	179	665	11	73	0.41	41.2	50.1	22.8	1390	0.86
SH 359	4	2-way stop	2	768	1536	7294	9	656	0.43	6.5	6.3	4.5	15244	0.89
CR 356	5	2-way stop	1	212	424	60	15	9	0.02	20		10.0	125	0.04
US 59	5	All-way stop	2	371	743	6876	10	688	0.93	18.7	20.3	9.8	14371	1.94
CR 232	6	2-way stop	1	212	424	250	15	38	0.09	20		10.0	523	0.18
FM 1358	6	2-way stop	1	196	392	454	10	45	0.12	21.8		10.9	949	0.24
FM 799	6	2-way stop	1	86	173	730	11	80	0.46	47.6	46.2	23.5	1526	0.97
SH 72	6	All-way stop	3	621	1241	10279	8	822	0.66	18.1	16.6	8.7	21483	1.38
FM 99	7	2-way stop	1	451	902	3758	6	225	0.25	4.8		3.4	7854	0.52
US 281A	7	2-way stop	1	252	504	1223	7	86	0.17	16.2	7.1	8.2	2556	0.36
FM 791	8	2-way stop	1	163	327	1738	10	174	0.53	19.6	33.3	13.2	3632	1.11
FM1099	8	2-way stop	1	204	409	1710	11	188	0.46	19.5	22.2	10.4	3574	0.96
FM541	10	2-way stop	1	188	377	697	12	84	0.22	22.8		11.4	1457	0.46
Corgey	11	2-way stop	1	212	424	680	11	75	0.18	20		10.0	1421	0.37
Coughran	11	2-way stop	1	212	424	266	11	29	0.07	20		10.0	556	0.14
Spur 199 (Leal Rd)	11	2-way stop	1	309	618	2337	9	210	0.34	8.9		6.2	4884	0.71
FM 536	12	2-way stop	1	205	409	2148	11	236	0.58	19	22.6	10.4	4747	1.28
Verdi St	12	2-way stop	1	237	473	1838	14	257	0.54	17.6		8.8	4062	1.20
Hardy	13	2-way stop	1	212	424	443	11	49	0.11	20		10.0	979	0.25
Waterwood/Mathis	13	2-way stop	1	212	424	2536	12	304	0.72	20		10.0	5605	1.59
Southton	14	All-way stop	1	181	362	3113	11	342	0.94	20		10.0	6880	2.09
Spur 122	14	2-way stop	1	212	424	3871	11	426	1.00	20		10.0	8555	2.22

Segment	Cross Street	Class	AADT	K-Factor	D-Factor	Peak Hour	Interchange With IH-37	2015 V/C Ratio	2040 V/C Ratio	2015 Segment V/C	2040 Segment V/C
1	IH-69 E	Interstate	21,344	9%	65%	1,249	Direct Connector			N/A	N/A
2	US 77	Principal Arterial	20,200	11%	56%	1,244	Direct Connector			0.17	0.34
	CR 188	Minor Collector	460				Stop-Controlled	0.16	0.32		
	SH 234	Major Collector	1,118	10%	51%	57	Stop-Controlled	0.18	0.36		
	CR 1441	Local					Stop-Controlled				
	FM 630	Minor Collector	51	18%	51%	5	Stop-Controlled	0.04	0.07		
3	SH 188	Minor Collector	1,850	9%	51%	85	Stop-Controlled	0.32	0.63	0.42	0.81
	Spur 459	Minor Arterial	5,178	11%	54%	308	Stop-Controlled	0.45	0.88		
4	SH 359	Minor Arterial	7,294	9%	59%	387	Stop-Controlled	0.43	0.89	0.39	0.80
	FM 3377	Major Collector	291	11%	51%	16	Stop-Controlled	0.08	0.17		
	FM 888	Major Collector	665	11%	74%	54	Stop-Controlled	0.41	0.86		
	CR 350	Local					Stop-Controlled				
	FM 534	Major Collector	1,042	9%	74%	69	Stop-Controlled	0.16	0.34		
5	CR 356	Local	60				Stop-Controlled	0.02	0.04	0.92	1.92
	US 59	Principal Arterial	6,876	10%	55%	378	Stop-Controlled	0.93	1.94		
6	FM 799	Major Collector	730	11%	74%	59	Stop-Controlled	0.46	0.97	0.61	1.28
	FM 1358	Minor Collector	454	10%	74%	34	Stop-Controlled	0.12	0.24		
	CR 232	Local	250				Stop-Controlled	0.09	0.18		
	SH 72	Minor Arterial	10,279	8%	61%	502	Stop-Controlled	0.66	1.38		
	US 281	Principal Arterial	10,176	9%	51%	467	Direct Connector				
7	US 281A	Major Collector	1,223	7%	59%	51	Stop-Controlled	0.17	0.36	0.23	0.48
	FM 99	Major Collector	3,758	6%	74%	167	Stop-Controlled	0.25	0.52		
8	FM 1099	Major Collector	1,710	11%	67%	126	Stop-Controlled	0.46	0.96	0.50	1.04
	FM 791	Major Collector	1,969	10%	67%	132	Stop-Controlled	0.53	1.11		
9	US 281A	Major Collector	2,008	9%	59%	107	Direct Connector			N/A	N/A
10	FM 541	Major Collector	697	12%	67%	56	Stop-Controlled	0.22	0.46	0.22	0.46
11	US 281	Principal Arterial	8,245	9%	51%	378	Direct Connector			0.28	0.59
	Spur 199	Minor Collector	2,337	9%	59%	124	Stop-Controlled	0.34	0.71		
	Coughran	Local	266	11%			Stop-Controlled	0.07	0.14		
	Corgey	Local	680	11%			Stop-Controlled	0.18	0.37		
12	SH 97	Principal Arterial	14,361	11%	62%	979	Signalized	0.53	1.17	0.54	1.19
	Verdi	Major Collector	2,458	14%	67%	231	Stop-Controlled	0.54	1.2		
	FM 536	Major Collector	2,148	11%	67%	158	Stop-Controlled	0.58	1.28		
13	Hardy	Local	443	11%			Stop-Controlled	0.11	0.25	0.63	1.39
	Waterwood	Local	2,536	12%	50%	152	Stop-Controlled	0.72	1.59		
14	Loop 1604	Minor Arterial	9,164	9%	59%	487	Signalized	0.74	1.64	0.84	1.86
	Southton	Local	3,113	11%	50%	171	Stop-Controlled	0.94	2.09		
	US 181	Principal Arterial		10%	62%	0	Direct Connector				
	Spur 122	Principal Arterial	3,871	11%	67%	285	Stop-Controlled	1.00	2.22		
	IH-410	Interstate		8%	51%	0	Direct Connector				

Speed Data (HERE data)

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
NORTHBOUND																
112P04840	**Count**	8,303	16,252	8,057	17,811	4,628	7,932	3,950	10,889							
	Avg	65.52	65.01	64.14	64.02	62.12	61.80	61.31	61.81							
	P_05	56.52	55.57	48.93	54.64	54.64	53.75	51.23	53.75							
	TTI	1.14	1.15	1.17	1.17	1.05	1.05	1.06	1.05	75	65	1.17	1.06		**1.14**	**1.04**
	PTI	1.33	1.35	1.53	1.37	1.19	1.21	1.27	1.21	75	65	1.53	1.27	**1**	**1.38**	**1.18**
112P04841	**Count**	9,156	18,276	9,171	28,603	6,461	13,160	6,917	19,281							
	Avg	68.56	67.77	68.34	66.24	63.87	63.95	64.19	63.72							
	P_05	61.94	61.24	61.94	59.22	59.88	59.22	59.88	58.58							
	TTI	1.09	1.11	1.10	1.13	1.02	1.02	1.01	1.02	75	65	1.11	1.02			
	PTI	1.21	1.22	1.21	1.27	1.09	1.10	1.09	1.11	75	65	1.22	1.10			
112P05472	**Count**	8,869	17,701	8,854	25,132	5,566	11,145	6,035	15,900							
	Avg	67.93	67.23	67.57	65.60	63.15	62.94	63.15	62.90							
	P_05	60.86	60.08	60.86	57.15	57.15	57.15	57.15	56.46							
	TTI	1.10	1.12	1.11	1.14	1.03	1.03	1.03	1.03	75	65	1.12	1.03		**1.10**	**1.02**
	PTI	1.23	1.25	1.23	1.31	1.14	1.14	1.14	1.15	75	65	1.25	1.14		**1.22**	**1.11**
112P05473	**Count**	9,062	17,844	8,839	25,051	5,814	10,586	5,423	15,494							
	Avg	69.00	68.80	69.41	66.91	63.55	63.36	63.99	63.48							
	P_05	62.08	61.48	62.08	59.20	59.76	58.93	58.96	58.66					**2**		
	TTI	1.09	1.09	1.08	1.12	1.02	1.03	1.02	1.02	75	65	1.09	1.03			
	PTI	1.21	1.22	1.21	1.27	1.09	1.10	1.10	1.11	75	65	1.22	1.10			
112P05474	**Count**	8,822	17,311	8,536	22,735	5,376	9,764	4,991	14,102							
	Avg	69.67	69.41	69.84	67.70	64.13	64.06	64.42	64.14							
	P_05	62.74	62.74	62.74	60.96	60.96	60.11	60.53	60.11							
	TTI	1.08	1.08	1.07	1.11	1.01	1.01	1.01	1.01	75	65	1.08	1.01			
	PTI	1.20	1.20	1.20	1.23	1.07	1.08	1.07	1.08	75	65	1.20	1.08			
112P05475	**Count**	9,359	18,622	9,281	31,936	8,155	15,949	7,841	25,218							
	Avg	69.52	69.01	69.39	67.42	64.43	64.19	64.38	64.37							
	P_05	63.61	62.22	62.49	61.53	61.00	60.08	60.34	60.87							
	TTI	1.08	1.09	1.08	1.11	1.01	1.01	1.01	1.01	75	65	1.09	1.01		**1.09**	**1.02**
	PTI	1.18	1.21	1.20	1.22	1.07	1.08	1.08	1.07	75	65	1.21	1.08	**3**	**1.22**	**1.09**
112P05476	**Count**	9,165	18,089	8,981	26,572	6,680	12,672	6,220	18,421							
	Avg	69.46	68.55	69.11	67.44	64.37	63.81	64.23	64.27							
	P_05	62.89	61.02	61.63	61.02	60.42	59.55	59.55	60.42							
	TTI	1.08	1.09	1.09	1.11	1.01	1.02	1.01	1.01	75	65	1.09	1.02			
	PTI	1.19	1.23	1.22	1.23	1.08	1.09	1.09	1.08	75	65	1.23	1.09			
112P04842	**Count**	8,931	17,560	8,502	23,835	5,920	11,405	5,436	15,854					**4**		
	Avg	69.46	68.82	69.34	67.44	64.00	63.72	64.09	64.00							

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	P_05	62.16	60.82	61.15	60.82	60.18	59.54	59.86	60.18							
	TTI	1.08	1.09	1.08	1.11	1.02	1.02	1.01	1.02	75	65	1.09	1.02		**1.08**	**1.02**
	PTI	1.21	1.23	1.23	1.23	1.08	1.09	1.09	1.08	75	65	1.23	1.09		**1.21**	**1.09**
112P05302	**Count**	7,349	14,191	6,576	15,855	4,015	7,539	3,600	9,971							
	Avg	69.84	69.43	69.69	67.56	64.18	64.12	64.31	64.08							
	P_05	62.06	62.06	62.06	61.02	61.02	61.02	60.02	61.02							
	TTI	1.07	1.08	1.08	1.11	1.01	1.01	1.01	1.01	75	65	1.08	1.01			
	PTI	1.21	1.21	1.21	1.23	1.07	1.07	1.08	1.07	75	65	1.21	1.08			
112P05303	**Count**	9,282	18,386	9,084	28,523	6,959	13,687	6,600	19,915							
	Avg	70.22	69.98	70.23	67.69	64.30	64.26	64.48	64.22							
	P_05	63.95	63.46	63.46	61.58	61.13	60.98	60.98	60.68							
	TTI	1.07	1.07	1.07	1.11	1.01	1.01	1.01	1.01	75	65	1.07	1.01			
	PTI	1.17	1.18	1.18	1.22	1.06	1.07	1.07	1.07	75	65	1.18	1.07			
112P05477	**Count**	8,345	16,229	7,835	19,945	4,748	8,927	4,441	12,346							
	Avg	69.03	68.77	69.01	66.83	63.52	63.43	63.83	63.46							
	P_05	60.70	60.70	60.70	59.41	59.41	58.17	58.78	58.17							
	TTI	1.09	1.09	1.09	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02			
	PTI	1.24	1.24	1.24	1.26	1.09	1.12	1.11	1.12	75	65	1.24	1.12			
112P05304	**Count**	9,078	17,913	8,687	25,411	6,156	12,276	5,789	17,419							
	Avg	70.70	70.23	70.48	67.92	64.75	64.69	64.82	64.51							
	P_05	63.69	63.41	63.41	62.03	61.50	61.50	61.50	61.23							
	TTI	1.06	1.07	1.06	1.10	1.00	1.00	1.00	1.01	75	65	1.07	1.00		**1.07**	**1.01**
	PTI	1.18	1.18	1.18	1.21	1.06	1.06	1.06	1.06	75	65	1.18	1.06	**5**	**1.19**	**1.07**
112P05305	**Count**	9,159	18,186	8,903	27,117	6,340	13,021	6,280	18,959							
	Avg	70.37	69.85	69.90	67.28	64.24	64.24	64.25	63.95							
	P_05	63.41	62.99	62.79	60.98	60.20	60.39	60.20	60.01							
	TTI	1.07	1.07	1.07	1.11	1.01	1.01	1.01	1.02	75	65	1.07	1.01			
	PTI	1.18	1.19	1.19	1.23	1.08	1.08	1.08	1.08	75	65	1.19	1.08			
112P05306	**Count**	8,996	17,650	8,654	24,417	5,377	10,788	5,395	14,795							
	Avg	69.59	69.14	69.45	67.25	63.77	63.62	63.95	63.75							
	P_05	62.12	61.46	61.78	59.56	58.95	59.25	59.56	58.95							
	TTI	1.08	1.08	1.08	1.12	1.02	1.02	1.02	1.02	75	65	1.08	1.02		**1.08**	**1.02**
	PTI	1.21	1.22	1.21	1.26	1.10	1.10	1.09	1.10	75	65	1.22	1.10		**1.21**	**1.09**
112P05307	**Count**	9,307	18,407	9,132	29,135	6,677	13,588	6,727	19,689					**6**		
	Avg	70.69	70.16	70.42	68.21	64.57	64.15	64.46	64.35							
	P_05	63.99	63.45	63.45	62.22	60.88	60.88	61.21	60.88							
	TTI	1.06	1.07	1.07	1.10	1.01	1.01	1.01	1.01	75	65	1.07	1.01			
	PTI	1.17	1.18	1.18	1.21	1.07	1.07	1.06	1.07	75	65	1.18	1.07			
112P05308	**Count**	9,114	17,963	8,871	26,846	6,050	12,914	6,348	18,666							

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	Avg	69.72	69.05	69.43	66.94	64.27	64.05	64.35	63.81							
	P_05	62.53	61.85	62.19	59.90	59.59	59.59	60.22	58.66							
	TTI	1.08	1.09	1.08	1.12	1.01	1.01	1.01	1.02	75	65	1.09	1.01			
	PTI	1.20	1.21	1.21	1.25	1.09	1.09	1.08	1.11	75	65	1.21	1.09			
112P05309	**Count**	8,793	17,928	8,879	26,172	5,558	12,788	6,377	19,024							
	Avg	69.17	69.25	69.64	66.62	63.90	64.07	64.35	63.72							
	P_05	61.72	62.26	62.54	60.40	59.89	60.40	60.66	59.63							
	TTI	1.08	1.08	1.08	1.13	1.02	1.01	1.01	1.02	75	65	1.08	1.02			
	PTI	1.22	1.20	1.20	1.24	1.09	1.08	1.07	1.09	75	65	1.22	1.09			
112P05310	**Count**	9,077	18,431	9,208	30,126	5,888	14,916	7,291	20,550							
	Avg	69.26	68.86	69.49	66.49	63.44	63.44	63.62	63.22							
	P_05	62.54	62.54	62.84	59.64	59.37	59.92	59.64	58.29							
	TTI	1.08	1.09	1.08	1.13	1.02	1.02	1.02	1.03	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.20	1.20	1.19	1.26	1.09	1.08	1.09	1.12	75	65	1.20	1.09	**7**	**1.19**	**1.09**
112P05311	**Count**	9,320	18,716	9,362	34,348	7,633	17,633	8,766	28,723							
	Avg	69.07	68.97	69.60	66.78	63.83	63.94	64.15	63.93							
	P_05	63.11	63.28	63.94	61.52	60.29	61.05	60.90	60.29							
	TTI	1.09	1.09	1.08	1.12	1.02	1.02	1.01	1.02	75	65	1.09	1.02			
	PTI	1.19	1.19	1.17	1.22	1.08	1.06	1.07	1.08	75	65	1.19	1.08			
112P05312	**Count**	8,911	18,569	9,311	31,409	5,972	16,256	7,991	23,258							
	Avg	69.06	68.61	69.83	67.00	63.56	63.57	63.91	63.71							
	P_05	62.39	62.80	63.86	61.38	60.20	60.78	60.59	60.20					**8**		
	TTI	1.09	1.09	1.07	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.20	1.19	1.17	1.22	1.08	1.07	1.07	1.08	75	65	1.20	1.08		**1.20**	**1.08**
112P05313	**Count**	8,480	18,448	9,288	30,370	5,386	15,593	7,699	21,800							
	Avg	68.93	68.61	69.69	66.92	63.61	63.59	63.68	63.50							
	P_05	62.48	62.48	63.50	61.24	60.29	60.52	60.29	60.05					**9**		
	TTI	1.09	1.09	1.08	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.20	1.20	1.18	1.22	1.08	1.07	1.08	1.08	75	65	1.20	1.08		**1.20**	**1.08**
112P05314	**Count**	8,817	18,615	9,336	32,859	6,214	16,782	8,381	25,889							
	Avg	68.94	68.76	70.01	67.03	63.78	63.51	63.75	63.75							
	P_05	62.37	62.37	64.26	61.38	60.22	60.22	60.22	60.22					**10**		
	TTI	1.09	1.09	1.07	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.20	1.20	1.17	1.22	1.08	1.08	1.08	1.08	75	65	1.20	1.08		**1.20**	**1.08**
112P05315	**Count**	8,806	18,644	9,344	32,864	5,922	16,626	8,320	25,384							
	Avg	68.82	68.73	70.18	66.98	63.69	63.64	64.03	63.74							
	P_05	62.12	62.71	64.35	61.16	60.05	60.78	60.60	60.05					**11**		
	TTI	1.09	1.09	1.07	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02		**1.10**	**1.02**
	PTI	1.21	1.20	1.17	1.23	1.08	1.07	1.07	1.08	75	65	1.21	1.08		**1.24**	**1.10**

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
112P05316	**Count**	4,774	14,612	7,783	18,538	2,777	9,836	4,913	12,320							
	Avg	66.98	67.32	68.85	66.37	63.55	63.52	63.89	63.56							
	P_05	58.98	58.98	60.38	58.98	58.98	58.98	58.98	58.98							
	TTI	1.12	1.11	1.09	1.13	1.02	1.02	1.02	1.02	75	65	1.12	1.02			
	PTI	1.27	1.27	1.24	1.27	1.10	1.10	1.10	1.10	75	65	1.27	1.10			
112P05317	**Count**	7,264	17,853	9,146	27,459	4,544	14,075	7,135	19,800							
	Avg	68.20	68.63	70.11	66.80	63.85	63.87	64.20	63.79							
	P_05	61.24	62.30	63.40	60.72	59.70	60.72	60.21	59.70							
	TTI	1.10	1.09	1.07	1.12	1.02	1.02	1.01	1.02	75	65	1.10	1.02			
	PTI	1.22	1.20	1.18	1.24	1.09	1.07	1.08	1.09	75	65	1.22	1.09			
112P05318	**Count**	7,805	18,281	9,259	29,565	4,589	14,525	7,347	20,793							
	Avg	68.25	69.09	70.41	66.83	62.96	63.25	63.34	63.04							
	P_05	59.99	62.06	63.30	59.42	56.75	58.32	57.79	56.49							
	TTI	1.10	1.09	1.07	1.12	1.03	1.03	1.03	1.03	75	65	1.10	1.03			
	PTI	1.25	1.21	1.18	1.26	1.15	1.11	1.12	1.15	75	65	1.25	1.15			
112P05319	**Count**	8,859	18,627	9,357	33,374	6,178	16,981	8,579	26,357							
	Avg	67.92	68.39	70.02	66.82	63.57	63.62	64.00	63.67							
	P_05	60.97	62.29	64.25	60.20	58.48	59.70	59.70	58.72							
	TTI	1.10	1.10	1.07	1.12	1.02	1.02	1.02	1.02	75	65	1.10	1.02		**1.10**	**1.02**
	PTI	1.23	1.20	1.17	1.25	1.11	1.09	1.09	1.11	75	65	1.23	1.11		**1.25**	**1.09**
112P05320	**Count**	8,874	18,632	9,358	33,280	6,062	16,895	8,490	26,330							
	Avg	68.66	68.91	70.55	67.36	64.24	64.19	64.50	64.14							
	P_05	62.16	63.02	64.81	61.60	60.24	61.05	60.78	60.24					**12**		
	TTI	1.09	1.09	1.06	1.11	1.01	1.01	1.01	1.01	75	65	1.09	1.01			
	PTI	1.21	1.19	1.16	1.22	1.08	1.06	1.07	1.08	75	65	1.21	1.08			
112P05321	**Count**	6,731	16,873	8,879	23,256	3,432	12,067	5,973	15,644							
	Avg	67.59	68.04	70.25	67.10	63.93	63.80	64.18	63.89							
	P_05	57.34	59.83	62.55	59.83	59.83	59.83	59.83	59.83							
	TTI	1.11	1.10	1.07	1.12	1.02	1.02	1.01	1.02	75	65	1.11	1.02			
	PTI	1.31	1.25	1.20	1.25	1.09	1.09	1.09	1.09	75	65	1.31	1.09			
112P05160	**Count**	1,237	4,421	2,577	3,726	305	1,247	564	1,297							
	Avg	68.12	68.92	68.94	68.48	66.41	66.17	66.08	66.08							
	P_05	66.52	66.52	66.52	66.52	66.52	66.52	66.52	66.52							
	TTI	1.10	1.09	1.09	1.10	0.98	0.98	0.98	0.98	75	65	1.10	1.00		**1.10**	**1.01**
	PTI	1.13	1.13	1.13	1.13	0.98	0.98	0.98	0.98	75	65	1.13	1.00	**13**	**1.19**	**1.06**
112P05161	**Count**	8,133	18,224	9,278	28,916	4,479	14,718	7,310	20,443							
	Avg	68.62	68.67	70.47	67.62	64.18	64.06	64.42	64.15							
	P_05	61.29	61.97	64.11	61.29	59.98	60.63	59.98	59.98							
	TTI	1.09	1.09	1.06	1.11	1.01	1.01	1.01	1.01	75	65	1.09	1.01			

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	PTI	1.22	1.21	1.17	1.22	1.08	1.07	1.08	1.08	75	65	1.22	1.08			
112P05162	**Count**	8,770	18,561	9,336	31,974	5,356	15,954	7,956	23,884							
	Avg	68.57	68.76	70.55	67.38	63.79	63.90	64.16	63.83							
	P_05	61.42	62.61	64.70	61.04	59.18	60.66	60.28	59.54							
	TTI	1.09	1.09	1.06	1.11	1.02	1.02	1.01	1.02	75	65	1.09	1.02			
	PTI	1.22	1.20	1.16	1.23	1.10	1.07	1.08	1.09	75	65	1.22	1.10			
112P04615	**Count**	8,268	18,129	9,189	27,992	4,064	13,705	6,437	18,189							
	Avg	67.99	68.01	69.56	66.67	63.34	63.42	63.78	63.34							
	P_05	59.77	61.22	62.76	59.06	57.71	59.77	59.06	58.38							
	TTI	1.10	1.10	1.08	1.12	1.03	1.02	1.02	1.03	75	65	1.10	1.03		**1.07**	**1.04**
	PTI	1.25	1.22	1.20	1.27	1.13	1.09	1.10	1.11	75	65	1.25	1.13		**1.24**	**1.18**
112P04616	**Count**	8,996	18,610	9,334	32,649	5,556	16,198	7,929	24,350							
	Avg	68.33	67.76	69.33	66.94	63.79	63.22	64.02	63.78							
	P_05	61.83	62.17	63.57	61.15	59.22	59.85	60.17	59.85							
	TTI	1.02	1.03	1.01	1.05	1.02	1.03	1.02	1.02	70	65	1.03	1.03			
	PTI	1.13	1.13	1.10	1.14	1.10	1.09	1.08	1.09	70	65	1.13	1.10			
112P04617	**Count**	8,674	18,431	9,284	30,280	4,839	14,965	7,190	21,162							
	Avg	67.26	66.89	68.38	66.31	62.88	62.95	63.57	63.33							
	P_05	59.92	60.47	62.18	59.92	56.34	58.33	58.85	58.33							
	TTI	1.04	1.05	1.02	1.06	1.03	1.03	1.02	1.03	70	65	1.05	1.03			
	PTI	1.17	1.16	1.13	1.17	1.15	1.11	1.10	1.11	70	65	1.17	1.15			
112P04618	**Count**	6,694	16,106	8,459	19,491	2,253	8,515	3,863	10,148					**14**		
	Avg	64.93	66.07	66.86	65.53	61.15	62.35	62.18	62.51							
	P_05	53.66	57.36	57.36	57.36	51.98	55.45	55.45	55.45							
	TTI	1.08	1.06	1.05	1.07	1.06	1.04	1.05	1.04	70	65	1.08	1.06			
	PTI	1.30	1.22	1.22	1.22	1.25	1.17	1.17	1.17	70	65	1.30	1.25			
112P04619	**Count**	8,620	18,160	9,225	27,212	3,652	12,327	5,818	16,086							
	Avg	64.11	65.26	65.78	63.73	59.61	60.61	60.15	60.39							
	P_05	51.70	57.51	58.17	53.32	48.29	52.23	51.19	50.18							
	TTI	1.09	1.07	1.06	1.10	1.09	1.07	1.08	1.08	70	65	1.09	1.09			
	PTI	1.35	1.22	1.20	1.31	1.35	1.24	1.27	1.30	70	65	1.35	1.35			
112P05163	**Count**	8,871	18,516	9,318	31,025	5,183	15,054	7,265	20,841							
	Avg	68.86	69.22	71.05	67.83	63.66	63.83	64.19	63.78							
	P_05	61.54	62.68	64.67	61.17	58.35	60.44	60.44	59.73							
	TTI	1.09	1.08	1.06	1.11	1.02	1.02	1.01	1.02	75	65	1.09	1.02			
	PTI	1.22	1.20	1.16	1.23	1.11	1.08	1.08	1.09	75	65	1.22	1.11			

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
SOUTHBOUND																
112N04840	**Count**	9,050	18,274	9,227	30,074	6,651	13,906	6,562	20,565							
	Avg	66.14	66.20	67.31	64.54	62.03	62.46	62.74	61.92							
	P_05	59.10	59.10	60.87	55.85	55.85	56.89	56.36	54.84							
	TTI	1.13	1.13	1.11	1.16	1.05	1.04	1.04	1.05	75	65	1.13	1.05		**1.12**	**1.04**
	PTI	1.27	1.27	1.23	1.34	1.16	1.14	1.15	1.19	75	65	1.27	1.16	**1**	**1.25**	**1.14**
112N04841	**Count**	8,893	17,976	9,129	28,522	6,066	12,682	5,971	18,180							
	Avg	67.48	67.63	68.69	65.94	62.86	63.30	63.47	63.09							
	P_05	60.75	60.75	61.53	57.83	57.83	58.53	58.53	57.14							
	TTI	1.11	1.11	1.09	1.14	1.03	1.03	1.02	1.03	75	65	1.11	1.03			
	PTI	1.23	1.23	1.22	1.30	1.12	1.11	1.11	1.14	75	65	1.23	1.12			
112N05472	**Count**	8,678	17,814	9,016	26,817	5,295	11,876	5,120	16,961							
	Avg	68.16	68.93	70.53	67.10	62.61	63.21	63.64	62.86							
	P_05	59.19	61.05	62.69	57.16	52.76	56.33	57.16	54.23							
	TTI	1.10	1.09	1.06	1.12	1.04	1.03	1.02	1.03	75	65	1.10	1.04		**1.09**	**1.02**
	PTI	1.27	1.23	1.20	1.31	1.23	1.15	1.14	1.20	75	65	1.27	1.23		**1.22**	**1.13**
112N05473	**Count**	7,626	16,178	8,312	21,506	4,128	9,574	4,084	13,126							
	Avg	69.07	69.31	70.77	67.88	63.91	64.06	64.48	63.88							
	P_05	62.35	62.35	63.09	60.94	60.25	60.94	60.94	60.25					**2**		
	TTI	1.09	1.08	1.06	1.10	1.02	1.01	1.01	1.02	75	65	1.09	1.02			
	PTI	1.20	1.20	1.19	1.23	1.08	1.07	1.07	1.08	75	65	1.20	1.08			
112N05474	**Count**	9,303	18,650	9,347	34,145	8,152	16,766	7,910	27,222							
	Avg	68.70	69.31	70.63	67.53	64.15	64.28	64.43	63.92							
	P_05	63.39	63.65	64.58	61.51	60.67	61.27	60.91	60.32							
	TTI	1.09	1.08	1.06	1.11	1.01	1.01	1.01	1.02	75	65	1.09	1.01			
	PTI	1.18	1.18	1.16	1.22	1.07	1.06	1.07	1.08	75	65	1.18	1.07			
112N05475	**Count**	8,989	18,175	9,128	29,036	6,564	14,001	6,223	20,503							
	Avg	68.65	68.95	70.63	67.74	64.14	64.18	64.57	63.93							
	P_05	62.32	62.02	63.24	60.83	60.26	60.26	60.55	59.98							
	TTI	1.09	1.09	1.06	1.11	1.01	1.01	1.01	1.02	75	65	1.09	1.01		**1.10**	**1.02**
	PTI	1.20	1.21	1.19	1.23	1.08	1.08	1.07	1.08	75	65	1.21	1.08	**3**	**1.23**	**1.10**
112N05476	**Count**	7,211	15,397	7,930	19,643	3,922	9,182	3,728	12,111							
	Avg	68.01	68.42	70.31	67.22	63.73	63.68	64.14	63.58							
	P_05	60.05	60.05	61.86	60.05	58.33	58.33	59.18	58.33							
	TTI	1.10	1.10	1.07	1.12	1.02	1.02	1.01	1.02	75	65	1.10	1.02			
	PTI	1.25	1.25	1.21	1.25	1.11	1.11	1.10	1.11	75	65	1.25	1.11			
112N04842	**Count**	711	2,214	1,071	1,967	337	794	278	994							
	Avg	67.34	67.46	67.53	67.61	67.23	67.05	66.98	67.38					**4**		
	P_05	67.43	67.43	67.43	67.43	67.43	67.43	67.43	67.43							

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	TTI	1.11	1.11	1.11	1.11	0.97	0.97	0.97	0.96	75	65	1.11	1.00		**1.10**	**1.02**
	PTI	1.11	1.11	1.11	1.11	0.96	0.96	0.96	0.96	75	65	1.11	1.00		**1.19**	**1.07**
112N05302	**Count**	9,065	18,434	9,231	31,495	6,972	14,973	6,578	22,869							
	Avg	67.83	68.76	70.57	67.08	63.21	63.37	63.80	63.18							
	P_05	61.46	62.25	63.71	60.24	58.37	59.51	59.65	58.93							
	TTI	1.11	1.09	1.06	1.12	1.03	1.03	1.02	1.03	75	65	1.11	1.03			
	PTI	1.22	1.20	1.18	1.24	1.11	1.09	1.09	1.10	75	65	1.22	1.11			
112N05303	**Count**	8,725	18,012	9,028	28,376	6,109	13,441	5,777	19,746							
	Avg	68.27	69.11	70.95	67.43	63.84	64.04	64.30	63.65							
	P_05	61.85	62.90	63.71	60.84	59.62	60.84	60.35	59.86							
	TTI	1.10	1.09	1.06	1.11	1.02	1.01	1.01	1.02	75	65	1.10	1.02			
	PTI	1.21	1.19	1.18	1.23	1.09	1.07	1.08	1.09	75	65	1.21	1.09			
112N05477	**Count**	8,727	18,008	9,017	28,299	6,230	13,371	5,780	19,593							
	Avg	68.23	68.84	70.42	67.53	63.90	63.94	64.18	63.77							
	P_05	61.63	61.89	62.66	60.89	59.68	59.80	59.92	59.92							
	TTI	1.10	1.09	1.07	1.11	1.02	1.02	1.01	1.02	75	65	1.10	1.02			
	PTI	1.22	1.21	1.20	1.23	1.09	1.09	1.08	1.08	75	65	1.22	1.09			
112N05304	**Count**	8,939	18,309	9,163	30,320	6,893	14,718	6,449	22,366							
	Avg	67.85	68.89	70.59	67.25	63.76	64.15	64.44	63.81							
	P_05	61.19	62.63	63.49	60.99	58.87	60.40	60.20	60.01							
	TTI	1.11	1.09	1.06	1.12	1.02	1.01	1.01	1.02	75	65	1.11	1.02		**1.10**	**1.03**
	PTI	1.23	1.20	1.18	1.23	1.10	1.08	1.08	1.08	75	65	1.23	1.10	**5**	**1.23**	**1.15**
112N05305	**Count**	8,434	17,701	8,986	27,441	4,895	11,855	4,886	17,268							
	Avg	68.56	69.12	71.02	67.29	63.04	63.49	63.85	63.21							
	P_05	61.07	62.04	63.38	60.13	54.79	58.92	58.33	58.04							
	TTI	1.09	1.09	1.06	1.11	1.03	1.02	1.02	1.03	75	65	1.09	1.03			
	PTI	1.23	1.21	1.18	1.25	1.19	1.10	1.11	1.12	75	65	1.23	1.19			
112N05306	**Count**	9,042	18,418	9,274	31,991	6,229	14,452	6,317	22,438							
	Avg	68.88	69.34	71.21	67.49	64.03	64.10	64.52	63.78							
	P_05	62.99	63.36	64.69	61.38	60.35	61.03	60.69	60.35							
	TTI	1.09	1.08	1.05	1.11	1.02	1.01	1.01	1.02	75	65	1.09	1.02		**1.10**	**1.02**
	PTI	1.19	1.18	1.16	1.22	1.08	1.07	1.07	1.08	75	65	1.19	1.08		**1.22**	**1.11**
112N05307	**Count**	8,726	18,089	9,134	29,522	5,851	13,621	5,965	20,652							
	Avg	68.46	68.83	70.71	67.18	64.12	64.18	64.62	63.87					**6**		
	P_05	61.83	62.15	63.43	60.61	59.72	60.01	60.01	59.72							
	TTI	1.10	1.09	1.06	1.12	1.01	1.01	1.01	1.02	75	65	1.10	1.01			
	PTI	1.21	1.21	1.18	1.24	1.09	1.08	1.08	1.09	75	65	1.21	1.09			
112N05308	**Count**	8,845	17,686	8,718	28,442	6,054	13,056	5,221	20,599							
	Avg	67.43	68.00	69.57	66.04	63.18	63.27	63.32	62.97							

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	P_05	59.82	60.69	61.28	58.71	57.12	58.17	57.12	57.90							
	TTI	1.11	1.10	1.08	1.14	1.03	1.03	1.03	1.03	75	65	1.11	1.03			
	PTI	1.25	1.24	1.22	1.28	1.14	1.12	1.14	1.12	75	65	1.25	1.14			
112N05309	**Count**	9,159	18,373	9,152	33,608	6,580	15,045	6,572	25,762							
	Avg	68.58	68.43	69.72	66.17	62.69	63.04	63.06	62.74							
	P_05	61.79	62.06	62.60	59.97	56.64	58.74	58.50	58.26							
	TTI	1.09	1.10	1.08	1.13	1.04	1.03	1.03	1.04	75	65	1.10	1.04			
	PTI	1.21	1.21	1.20	1.25	1.15	1.11	1.11	1.12	75	65	1.21	1.15			
112N05310	**Count**	9,230	18,474	9,209	35,804	8,214	17,243	8,059	31,334							
	Avg	68.89	68.61	69.61	66.53	63.76	63.76	63.77	63.55							
	P_05	63.42	63.10	63.26	61.54	59.63	60.50	60.19	60.35							
	TTI	1.09	1.09	1.08	1.13	1.02	1.02	1.02	1.02	75	65	1.09	1.02		**1.10**	**1.02**
	PTI	1.18	1.19	1.19	1.22	1.09	1.07	1.08	1.08	75	65	1.19	1.09	**7**	**1.20**	**1.10**
112N05311	**Count**	9,282	18,495	9,170	34,656	7,141	16,004	7,026	28,052							
	Avg	69.09	68.24	69.03	65.74	63.61	63.56	63.54	62.66							
	P_05	63.10	62.24	62.67	58.29	59.04	60.60	60.20	56.85							
	TTI	1.09	1.10	1.09	1.14	1.02	1.02	1.02	1.04	75	65	1.10	1.02			
	PTI	1.19	1.20	1.20	1.29	1.10	1.07	1.08	1.14	75	65	1.20	1.10			
112N05312	**Count**	9,260	18,336	9,011	33,794	6,795	15,303	6,624	26,517							
	Avg	69.31	68.41	69.05	66.10	63.71	63.75	63.65	63.00							
	P_05	63.30	62.53	62.53	58.89	58.89	61.02	60.30	57.34					**8**		
	TTI	1.08	1.10	1.09	1.13	1.02	1.02	1.02	1.03	75	65	1.10	1.02		**1.10**	**1.02**
	PTI	1.18	1.20	1.20	1.27	1.10	1.07	1.08	1.13	75	65	1.20	1.10		**1.20**	**1.10**
112N05313	**Count**	9,180	18,282	9,104	34,920	7,941	16,541	7,580	29,723							
	Avg	69.55	68.62	69.35	66.83	64.26	63.91	64.25	63.79							
	P_05	64.16	63.14	63.14	61.96	60.27	61.20	60.82	60.82					**9**		
	TTI	1.08	1.09	1.08	1.12	1.01	1.02	1.01	1.02	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.17	1.19	1.19	1.21	1.08	1.06	1.07	1.07	75	65	1.19	1.08		**1.19**	**1.08**
112N05314	**Count**	9,347	18,597	9,240	35,458	7,870	16,693	7,622	29,802							
	Avg	69.92	68.84	69.41	66.87	64.27	63.93	64.16	63.71							
	P_05	64.70	63.30	63.30	61.96	60.31	61.21	60.68	60.67					**10**		
	TTI	1.07	1.09	1.08	1.12	1.01	1.02	1.01	1.02	75	65	1.09	1.02		**1.09**	**1.02**
	PTI	1.16	1.18	1.18	1.21	1.08	1.06	1.07	1.07	75	65	1.18	1.08		**1.18**	**1.08**
112N05315	**Count**	7,838	15,108	6,875	24,238	4,728	10,905	4,574	18,405							
	Avg	68.50	67.33	67.80	65.78	64.10	63.79	63.90	63.45							
	P_05	60.65	60.65	60.65	59.42	59.42	60.65	60.65	59.42					**11**		
	TTI	1.09	1.11	1.11	1.14	1.01	1.02	1.02	1.02	75	65	1.11	1.02		**1.10**	**1.02**
	PTI	1.24	1.24	1.24	1.26	1.09	1.07	1.07	1.09	75	65	1.24	1.09		**1.21**	**1.09**
112N05316	**Count**	9,006	17,606	8,405	30,583	6,384	13,988	5,968	23,914							

TMC		All Vehicles				Trucks				Free-Flow Speed		TMC Results		Segment	Segment Results	
		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks		All Veh	Trucks
	Avg	69.31	67.90	68.57	66.32	64.35	63.81	64.15	63.72							
	P_05	62.98	61.76	61.76	61.16	60.01	60.78	60.01	60.01							
	TTI	1.08	1.10	1.09	1.13	1.01	1.02	1.01	1.02	75	65	1.10	1.02			
	PTI	1.19	1.21	1.21	1.23	1.08	1.07	1.08	1.08	75	65	1.21	1.08			
112N05317	**Count**	9,176	18,060	8,744	31,980	6,272	13,891	5,941	23,541							
	Avg	70.21	68.94	69.45	67.05	63.83	63.60	63.74	63.42							
	P_05	63.41	62.09	62.09	60.82	58.43	60.20	59.60	59.60							
	TTI	1.07	1.09	1.08	1.12	1.02	1.02	1.02	1.02	75	65	1.09	1.02			
	PTI	1.18	1.21	1.21	1.23	1.11	1.08	1.09	1.09	75	65	1.21	1.11			
112N05318	**Count**	9,349	18,615	9,203	35,246	8,016	16,609	7,212	29,270							
	Avg	70.18	68.76	69.30	66.96	64.18	63.91	63.98	63.71							
	P_05	64.71	63.01	62.74	61.40	59.63	60.37	60.12	60.12							
	TTI	1.07	1.09	1.08	1.12	1.01	1.02	1.02	1.02	75	65	1.09	1.02			
	PTI	1.16	1.19	1.20	1.22	1.09	1.08	1.08	1.08	75	65	1.20	1.09			
112N05319	**Count**	9,356	18,631	9,227	35,379	8,028	16,687	7,241	29,372							
	Avg	70.73	69.09	69.68	67.26	64.92	64.43	64.38	64.09							
	P_05	65.14	63.60	63.30	62.14	61.01	61.57	61.01	61.01							
	TTI	1.06	1.09	1.08	1.12	1.00	1.01	1.01	1.01	75	65	1.09	1.01		**1.08**	**1.01**
	PTI	1.15	1.18	1.18	1.21	1.07	1.06	1.07	1.07	75	65	1.18	1.07		**1.19**	**1.05**
112N05320	**Count**	9,175	18,000	8,602	31,166	6,632	14,379	5,836	24,013							
	Avg	70.77	68.72	69.22	67.08	64.78	64.33	64.26	64.05							
	P_05	64.37	62.72	61.93	61.15	60.40	61.15	60.40	61.15					**12**		
	TTI	1.06	1.09	1.08	1.12	1.00	1.01	1.01	1.01	75	65	1.09	1.01			
	PTI	1.17	1.20	1.21	1.23	1.08	1.06	1.08	1.06	75	65	1.21	1.08			
112N05321	**Count**	3,001	5,614	2,297	6,221	867	2,119	725	3,016							
	Avg	72.67	71.06	72.04	69.17	64.39	64.20	64.45	64.10							
	P_05	63.86	63.86	63.86	63.86	63.86	63.86	63.86	63.86							
	TTI	1.03	1.06	1.04	1.08	1.01	1.01	1.01	1.01	75	65	1.06	1.01			
	PTI	1.17	1.17	1.17	1.17	1.02	1.02	1.02	1.02	75	65	1.17	1.02			
112N05160	**Count**	9,122	17,788	8,350	30,099	6,431	13,855	5,533	23,153							
	Avg	70.90	68.73	69.31	66.98	64.66	64.17	64.18	63.85							
	P_05	64.14	62.14	62.14	61.18	60.26	61.18	60.26	60.26							
	TTI	1.06	1.09	1.08	1.12	1.01	1.01	1.01	1.02	75	65	1.09	1.01		**1.10**	**1.02**
	PTI	1.17	1.21	1.21	1.23	1.08	1.06	1.08	1.08	75	65	1.21	1.08	**13**	**1.22**	**1.12**
112N05161	**Count**	9,331	18,566	9,136	34,637	7,783	16,145	6,833	28,530							
	Avg	71.03	69.14	69.88	67.47	64.95	64.60	64.65	64.41							
	P_05	65.26	63.54	63.54	62.32	60.75	61.13	60.75	60.75							
	TTI	1.06	1.08	1.07	1.11	1.00	1.01	1.01	1.01	75	65	1.08	1.01			
	PTI	1.15	1.18	1.18	1.20	1.07	1.06	1.07	1.07	75	65	1.18	1.07			

		All Vehicles				Trucks				Free-Flow Speed		TMC Results			Segment Results	
TMC		AM	Mid-Day	PM	Night	AM	Mid-Day	PM	Night	All Veh	Trucks	All Veh	Trucks	Segment	All Veh	Trucks
112N05162	Count	9,307	18,498	9,142	33,974	6,708	14,988	6,337	25,463							
	Avg	69.12	66.97	67.39	65.40	62.48	62.58	62.50	62.40							
	P_05	61.93	59.89	59.12	57.62	54.19	56.55	55.18	56.20							
	TTI	1.09	1.12	1.11	1.15	1.04	1.04	1.04	1.04	75	65	1.12	1.04			
	PTI	1.21	1.25	1.27	1.30	1.20	1.15	1.18	1.16	75	65	1.27	1.20			
112N04615	Count	9,305	18,532	9,139	34,371	6,670	15,267	6,546	26,443							
	Avg	69.55	67.85	68.19	66.66	64.18	63.82	63.75	63.70							
	P_05	64.11	62.66	62.03	61.63	59.70	60.46	60.08	60.46							
	TTI	1.08	1.11	1.10	1.13	1.01	1.02	1.02	1.02	75	65	1.11	1.02		**1.09**	**1.05**
	PTI	1.17	1.20	1.21	1.22	1.09	1.08	1.08	1.08	75	65	1.21	1.09		**1.26**	**1.24**
112N04616	Count	9,268	18,447	9,058	33,434	6,487	14,968	6,357	25,566							
	Avg	68.72	67.13	67.47	66.06	64.00	63.70	63.65	63.45							
	P_05	63.05	61.51	61.51	60.53	59.57	60.05	59.57	59.57							
	TTI	1.02	1.04	1.04	1.06	1.02	1.02	1.02	1.02	70	65	1.04	1.02			
	PTI	1.11	1.14	1.14	1.16	1.09	1.08	1.09	1.09	70	65	1.14	1.09			
112N04617	Count	8,463	16,532	7,666	25,547	4,268	10,631	4,145	17,128							
	Avg	67.19	65.76	65.91	64.61	62.88	62.87	62.62	62.46							
	P_05	60.09	58.66	58.66	57.30	57.30	58.66	57.30	57.30							
	TTI	1.04	1.06	1.06	1.08	1.03	1.03	1.04	1.04	70	65	1.06	1.04			
	PTI	1.16	1.19	1.19	1.22	1.13	1.11	1.13	1.13	70	65	1.19	1.13			
112N04618	Count	9,183	18,143	8,901	31,570	5,618	13,437	5,623	22,707					**14**		
	Avg	65.40	64.20	64.10	62.83	60.85	61.12	60.70	60.56							
	P_05	58.25	57.37	56.51	54.09	52.59	54.09	52.59	52.59							
	TTI	1.07	1.09	1.09	1.11	1.07	1.06	1.07	1.07	70	65	1.09	1.07			
	PTI	1.20	1.22	1.24	1.29	1.24	1.20	1.24	1.24	70	65	1.24	1.24			
112N04619	Count	8,628	16,462	8,295	19,793	1,506	4,454	2,041	5,350							
	Avg	67.42	65.83	62.83	65.38	61.66	61.71	58.24	61.41							
	P_05	59.61	57.84	46.00	55.64	53.60	54.09	39.74	52.16							
	TTI	1.04	1.06	1.11	1.07	1.05	1.05	1.12	1.06	70	65	1.11	1.12			
	PTI	1.17	1.21	1.52	1.26	1.21	1.20	1.64	1.25	70	65	1.52	1.64			
112N05163	Count	9,231	18,285	8,925	32,604	5,771	13,833	5,769	23,450							
	Avg	68.47	66.58	66.81	65.50	62.19	62.30	62.07	62.37							
	P_05	60.97	59.42	58.43	58.43	50.81	55.21	52.33	56.10							
	TTI	1.10	1.13	1.12	1.15	1.05	1.04	1.05	1.04	75	65	1.13	1.05			
	PTI	1.23	1.26	1.28	1.28	1.28	1.18	1.24	1.16	75	65	1.28	1.28			

FREIGHT DATA

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
Segment 1									
IH 37 CROSSOVER OP	406191	14.24	-	-	Good	No		18.17	-
US 77 SB CONN UP	406007	14.53	16.42	-	Good	No		13.76	2.66
US 77 NB CONN UP	406193	14.58	16.42	-	Good	No		16.29	0.13
IH 37 CONN FM 624 OP	406192	14.59	-	-	Good	No		13.91	-
US 77 SB OP	406196	14.73	-	-	Good	No		16.74	-
IH 37 & US 77 UP	406194	14.81	16.33	-	Good	No		16.28	0.05
SHARPSBURG RD OP	406197	15.31	-	-	Good	No		16.55	-
SHARPSBURG RD OP	406195	15.31	-	-	Good	No		19.50	-
NUECES RIVER OP	405048	16.64	-	-	Good	No		#N/A	-
NUECES RIVER OP	405199	16.60	-	-	Good	No		#N/A	-
				0.00					
Indicator Score			**16.33**	**N/A**	**Good**				
Segment 2									
CONN TO US 77 NB UP	405112	17.18	16.42	-	Good	Yes		16.28	0.14
US 77 SB OP	405189	17.43	-	16.83	Good	Yes		16.68	-
CR 1726-COOPER RD UP	405111	20.58	16.58	-	Good	No		16.50	0.08
IH 37 WFR UP	405039	22.66	13.58	-	Good	No	yes	13.54	0.04
SH 234 & UPRR OP	405109	22.61	-	-	Good	No		22.28	-
SH 234 & UPRR OP	405110	22.62	-	-	Good	No		22.18	-
IH 37 WFR UP	405038	22.64	13.83	-	Good	No	yes	13.97	FALSE
FM 796 UP	405108	23.12	16.08	-	Good	No		16.14	FALSE
CR 21 UP	405116	25.59	16.33	-	Good	No		16.37	FALSE
FM 630 UP	405117	28.41	16.33	-	Good	No		16.36	FALSE
ARROYO NOMBRE DE DIOS OP	404120	30.52	-	-	Good	No		#N/A	-
ARROYO NOMBRE DE DIOS OP	404119	30.53	-	-	Good	No		#N/A	-
ARROYO NOMBRE DE DIOS OP	404118	30.52	-	-	Good	No		#N/A	-
ARROYO NOMBRE DE DIOS OP	404009	30.56	-	-	Good	No		#N/A	-
				16.83					
Indicator Score			**13.58**	**16.83**	**Good**				
Segment 3									
SH 188 UP	404121	31.09	16.75	-	Good	No		16.63	0.12
Indicator Score			**16.75**		**Good**				

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
Segment 4									
SPUR 459 OP	403123	34.56	-	-	Good	No		15.50	-
SPUR 459 OP	403124	34.56	-	-	Good	No		15.33	-
ABANDONED RR OP	403125	35.82	-	-	Good	No		#N/A	-
ABANDONED RR OP	403126	35.82	-	-	Good	No		#N/A	-
SH 359 OP	403127	36.15	-	-	Good	No		16.79	-
SH 359 OP	403128	36.15	-	-	Good	No		17.71	-
FM 3377 UP	403130	38.02	16.33	-	Good	No		16.35	FALSE
FM 888 OP	402133	40.39	-	-	Good	No		17.42	-
FM 888 OP	402134	40.39	-	-	Good	No		15.76	-
RUFE WMS HOLLOW OP	402138	42.85	-	-	Good	No		#N/A	-
RUFE WMS HOLLOW OP	402137	42.85	-	-	Good	No		#N/A	-
CR 350 UP	402140	45.10	16.50	-	Good	No		16.52	FALSE
WEATHERSBY HOLLOW OP	402141	45.86	-	-	Good	No		#N/A	-
WEATHERSBY HOLLOW OP	402142	45.86	-	-	Good	No		#N/A	-
FM 534 UP	402144	47.22	16.25	-	Good	No		16.24	0.01
				0.00					
Indicator Score			**16.25**	**N/A**	**Good**				
Segment 5									
MUSTANG CREEK OP	402160	48.62	-	-	Good	No		#N/A	-
MUSTANG CREEK OP	402161	48.63	-	-	Good	No		#N/A	-
HAILEY RNCH CR 356 UP	402156	51.19	16.17	-	Good	No		16.14	0.03
LA PARA CREEK OP	402152	52.09	-	-	Good	No		#N/A	-
LA PARA CREEK OP	402153	52.11	-	-	Good	No		#N/A	-
LA PARA CREEK OP	402154	52.12	-	-	Good	No		#N/A	-
LA PARA CREEK OP	402019	52.11	-	-	Good	No		#N/A	-
HAILEY HOLLOW OP	402149	54.30	-	-	Good	No		#N/A	-
HAILEY HOLLOW OP	402150	54.32	-	-	Good	No		#N/A	-
US 59 OP	402148	56.48	-	16.67	Good	Yes		16.76	-
US 59 OP	402147	56.49	-	16.75	Good	yes		16.60	-
				16.67					
Indicator Score			**16.17**	**16.67**	**Good**				
Segment 6									
GAMBLE GULLY OP	402145	57.01	-	-	Good	No		#N/A	-
GAMBLE GULLY OP	402146	57.01	-	-	Good	No		#N/A	-
LITTLE GAMBLE GULLY OP	401167	59.12	-	-	Good	No		#N/A	-

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
LITTLE GAMBLE GULLY OP	401168	59.11	-	-	Good	No		#N/A	-
FM 799 OP	401165	59.72	-	-	Good	No		16.63	-
FM 799 OP	401166	59.72	-	-	Good	No		16.73	-
WALLER CREEK OP	401163	61.02	-	-	Good	No		#N/A	-
WALLER CREEK OP	401164	61.04	-	-	Good	No		#N/A	-
SULPHUR CREEK OP	401033	65.30	-	-	Good	No		#N/A	-
SULPHUR CREEK OP	401177	65.27	-	-	Good	No		#N/A	-
SULPHUR CREEK OP	401178	65.24	-	-	Good	No		#N/A	-
SULPHUR CREEK OP	401179	65.24	-	-	Good	No		#N/A	-
FM 1358/LEMLEY ST UP	401180	65.75	16.67	-	Good	No		16.68	FALSE
CR 207 UP	401181	67.20	16.92	-	Good	No		16.85	0.07
ROCK QUARRY BRANCH OP	401182	68.58	-	-	Good	No		#N/A	-
ROCK QUARRY BRANCH OP	401183	68.60	-	-	Good	No		#N/A	-
SH 72 OP	401184	69.18	-	-	Good	No		16.36	-
SH 72 OP	401185	69.18	-	-	Good	No		16.47	-
HACKBERRY CREEK OP	401175	72.13	-	-	Good	No		#N/A	-
HACKBERRY CREEK OP	401176	72.14	-	-	Good	No		#N/A	-
HACKBERRY CREEK OP	401174	72.12	-	-	Good	No		#N/A	-
US 281 NB & EFR OP	307248	72.81	-	16.58	Good	Yes		16.08	-
US 281 NB & EFR OP	307247	72.80	-	16.42	Good	Yes		16.34	-
				16.42					
Indicator Score			**16.67**	**16.42**	**Good**				
Segment 7									
BRUSH PEN HOLLOW CREEK OP	307021	76.15	-	-	Good	No		#N/A	-
BRUSH PEN HOLLOW CREEK OP	307210	76.16	-	-	Good	No		#N/A	-
BRUSH PEN HOLLOW CREEK OP	307211	76.16	-	-	Good	No		#N/A	-
BRUSH PEN HOLLOW CREEK OP	307212	76.15	-	-	Good	No		#N/A	-
FM 2049 UP	307213	76.69	17.17	-	Good	No		17.13	0.04
SAN CHRISTOVAL CREEK OP	307214	77.29	-	-	Good	No		#N/A	-
SAN CHRISTOVAL CREEK OP	307215	77.29	-	-	Good	No		#N/A	-
FRONTAGE ROAD CROSSING OP	307218	80.87	-	-	Good	No		14.84	-
FRONTAGE ROAD CROSSING OP	307217	80.87	-	-	Good	No		14.94	-
SALT BRANCH CREEK OP	307223	83.08	-	-	Good	No		#N/A	-
SALT BRANCH CREEK OP	307221	83.07	-	-	Good	No		#N/A	-
SALT BRANCH CREEK OP	307222	83.08	-	-	Good	No		#N/A	-
SALT BRANCH CREEK OP	307224	83.10	-	-	Good	No		#N/A	-
FM 99 UP	307225	83.47	16.50	-	Good	No		16.45	0.05

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
OLMOS CREEK OP	306193	83.91	-	-	Good	No		#N/A	-
OLMOS CREEK OP	306194	83.91	-	-	Good	No		#N/A	-
				0.00					
Indicator Score			**16.50**	**N/A**	**Good**				
Segment 8									
LIPAN CREEK OP	306188	88.41	-	-	Good	No		#N/A	-
LIPAN CREEK OP	306189	88.40	-	-	Good	No		#N/A	-
LIPAN CREEK OP	306190	88.40	-	-	Good	No		#N/A	-
LIPAN CREEK OP	306191	88.41	-	-	Good	No		#N/A	-
FM 1099 & DRAIN OP	306172	88.56	-	-	Good	No		16.39	-
FM 1099 & DRAIN OP	306173	88.57	-	-	Good	No		16.32	-
FM 791 UP	306169	90.44	16.17	-	Good	No		15.13	1.04
				0.00					
Indicator Score			**16.17**	**N/A**	**Good**				
Segment 9									
BORREGO CREEK OP	306165	91.23	-	-	Good	No		#N/A	-
BORREGO CREEK OP	306166	91.22	-	-	Good	No		#N/A	-
ATASCOSA RIVER OP	305163	91.44	-	-	Good	No		#N/A	-
ATASCOSA RIVER OP	305164	91.43	-	-	Good	No		#N/A	-
US 281A CONN OP	305161	92.42	-	-	Good	No		16.42	-
US 281A CONN OP	305160	92.43	-	-	Good	No		16.47	-
UPRR OP	305013	92.74	-	-	Good	No		#N/A	-
UPRR OP	305159	92.75	-	-	Good	No		#N/A	-
UPRR OP	305158	92.76	-	-	Good	No		#N/A	-
UPRR OP	305157	92.80	-	-	Good	No		#N/A	-
				0.00					
Indicator Score			**0.00**	**N/A**	**Good**				
Segment 10									
FM 541 OP	305153	98.19	-	-	Good	No		18.10	-
FM 541 OP	305154	98.19	-	-	Good	No		16.48	-
				0.00					
Indicator Score			**0.00**	**N/A**	**Good**				
Segment 11									
US 281 NB CONN UP	310258	103.97	16.33	-	Good	No		16.30	0.03

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
SP 199 UP	310257	104.44	16.33	-	Good	No		16.33	0.00
COUGHRAN RD UP	310254	106.44	15.83	-	Good	No	yes	15.87	FALSE
UPRR & ATASCOSA RIVER OP	310251	107.52	-	-	Good	No		#N/A	-
UPRR & ATASCOSA RIVER OP	310252	107.53	-	-	Good	No		#N/A	-
CORGEY RD UP	310250	108.55	16.33	-	Good	No		16.24	0.09
SH 97 EB UP	310244	109.82	16.33	-	Good	No		16.17	0.16
SH 97 WB UP	310245	109.83	16.08	-	Good	No		15.90	0.18
				0.00					
Indicator Score			**15.83**	**N/A**	**Good**				
Segment 12									
FM 3006 UP	310234	113.81	16.83	-	Good	No		16.80	0.03
FM 1784 OP	310229	116.22	-	-	Good	No		15.98	-
FM 1784 OP	310228	116.24	-	-	Good	No		16.65	-
FM 536 UP	310097	117.57	17.33	-	Good	No		17.22	0.11
				0.00					
Indicator Score			**16.83**	**N/A**	**Good**				
Segment 13									
HARDY RD UP	309096	121.00	16.42	-	Good	No		16.30	0.12
PRIEST-MATHIS RD UP	309095	122.70	16.33	-	Good	No		16.19	0.14
				0.00					
Indicator Score			**16.33**	**N/A**	**Good**				
Segment 14									
LOOP 1604 OP	309091	125.43	-	-	Good	No		16.71	-
LOOP 1604 OP	309092	125.43	-	-	Good	No		16.50	-
SAN ANTONIO RIVER OP	309089	126.59	-	-	Good	No		#N/A	-
SAN ANTONIO RIVER OP	309090	126.59	-	-	Good	No		#N/A	-
SOUTHTON RD (DONOP RD) OP	309087	130.07	-	-	Good	No		14.87	-
SOUTHTON RD (DONOP RD) OP	309088	130.07	-	-	Good	No		14.36	-
SP RR OP	308082	130.63	-	-	Good	No		#N/A	-
SP RR OP	308083	130.63	-	-	Good	No		#N/A	-
SPUR 122 / US 181 UP	308080	131.89	16.50	-	Good	No		16.40	0.10
OLD US 181/SPUR 122 OP	308177	132.62	-	-	Good	No		15.39	-
OLD US 181 / SPUR 122 OP	308176	132.60	-	-	Good	No		15.57	-
SALADO CREEK OP	308074	132.78	-	-	Good	No		#N/A	-
SALADO CREEK OP	308073	132.78	-	-	Good	No		#N/A	-

Structure Name	Structure #	Milepost	UP Clearance	OP Clearance	Load Rating	Primary Freight Network	UP hotspot	Lidar Clearance	Difference
CORPUS CHRISTI RD OP	308071	133.39	-	-	Good	No		15.05	-
CORPUS CHRISTI RD OP	308072	133.39	-	-	Good	No		14.77	-
IH 37 NB TO 410 WB OP	308200	133.39	-	-	Good	No		16.33	-
IH 410 OP	308198	133.71	-	-	Good	No		16.38	-
IH 410 OP	308196	133.71	-	-	Good	No		16.33	-
IH 37 SB TO 410 EB OP	308197	134.11	-	-	Good	No		16.45	-
SALADO CREEK UP	308070	133.75	FALSE	-	Good	No		#N/A	#N/A
				0.00					
Indicator Score			**16.50**	**N/A**	**Good**				

APPENDIX E

TRAFFIC PROJECTION

METHODOLOGY MEMO

AECOM
9400 Amberglen Boulevard
Austin
TX, 78729
USA
aecom.com

Project name:
I-37

Project ref:

To: Texas Department of Transportation

CC:

From:
AECOM IH 37 Project Team

Date:
January 12, 2017

DRAFT

Memo

Subject: IH 37 Traffic Projection Technical Memo

This memo summarizes traffic projection results for the I-37 Corridor Study Project.

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Background and Introduction

This technical memorandum documents the procedure and results for Task 2.3 – Traffic Forecasting and Modeling of the I-37 project, following the methodology outlined in the previous traffic projection methodology memorandum.

The Statewide Analysis Model – Version 3 (SAM-V3) provides the baseline for the future traffic projection. The model projections are then validated using TxDOT's traffic counts. The growth rate is examined for reasonableness check and subsequently, adjustments are made to produce final traffic projections.

SAM-V3 is a traditional four-step multi-modal travel demand model that provides highway traffic forecasts for both passenger travel and freight transport, intercity and high speed passenger rail ridership, freight rail tonnage and train forecast, and air passenger travel to and from Texas airports. The model network includes roadway, passenger rail, passenger air routes, passenger high-speed rail, freight rail, and freight waterways. It has two Traffic Analysis Zone (TAZ) structures: one for passenger travel and the other for freight analysis. For passenger travel, there are 4535 internal zones and 122 external stations at the state lines of Texas. The TAZ structure was developed from U.S. Census block geography. The freight analysis is based TX-NAFF TAZ structure which covers Texas at the County level and the rest of North America at the State/Province level.

SAM-V3 is a large-scale multi-modal system. The model data obtained from TxDOT included model inputs (demographic and network data) for base year 2010, interim years 2020, 2030, and forecasting year 2040. The model platform has the ability to run scenarios with different zonal demographics and network alternatives. We have executed full model runs for model base year 2010, interim years 2020, 2030, and forecasting year 2040, and obtained daily and peak hour traffic projections.

For this project, SAM-V3 model projections are used as a baseline value and a corridor-level validation and reasonableness check were conducted. The historical saturation counts and growth, as well as future demographic growth and projected traffic growth in the study area, were also reviewed to produce reasonable future traffic projections.

Study area, Project Segments, Base Year, and Forecast Year

The draft study area and preliminary project segments are shown in **Figure 1**. The study corridor is a 1-mile wide corridor with a 5-mile buffer of I-37. The corridor is about 120 miles long and is divided into 14 segments.

The base year for the project is year 2015 and the planning horizon year is 2040. The 2015 model projections are obtained through the interpolation of year 2010 and year 2020 model projections. Year 2040 model projections are obtained from the model run. No interim year analysis is required for the project.

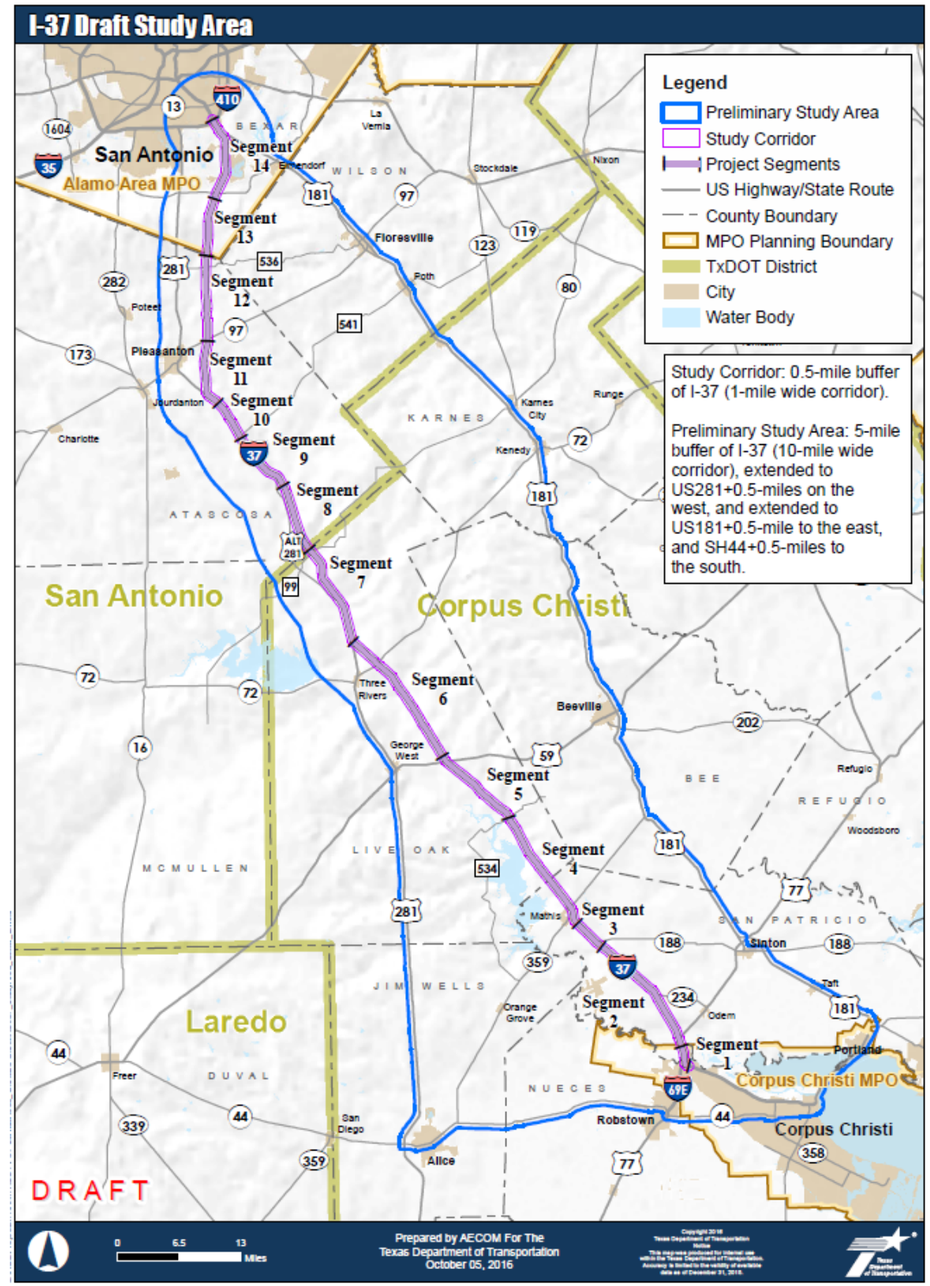


Figure 1: Study Area

Corridor-Level Validation and Reasonableness Check

AECOM conducted a corridor-level validation and reasonableness check on SAM-V3 traffic projections. The purpose of the corridor-level validation is to quantitatively measure how well SAM-V3 traffic forecast performs against the traffic counts along I-37 corridor to help validate SAM future projections.

Model Flow vs. Daily Counts: Base Year 2015

For model base year 2010, there are a total of 30 annual average daily traffic (AADT) count locations along the I-37 corridor. For project base year 2015, there are a total of 34 AADT counts along the study corridor. The relative root mean square error (RMSE), also referred to as percent RMSE, was calculated to measure the goodness-of-fit for the model projections, as shown in **Table 1**.

Table 1: I-37 Model Flow vs. Traffic Counts Comparison Statistics

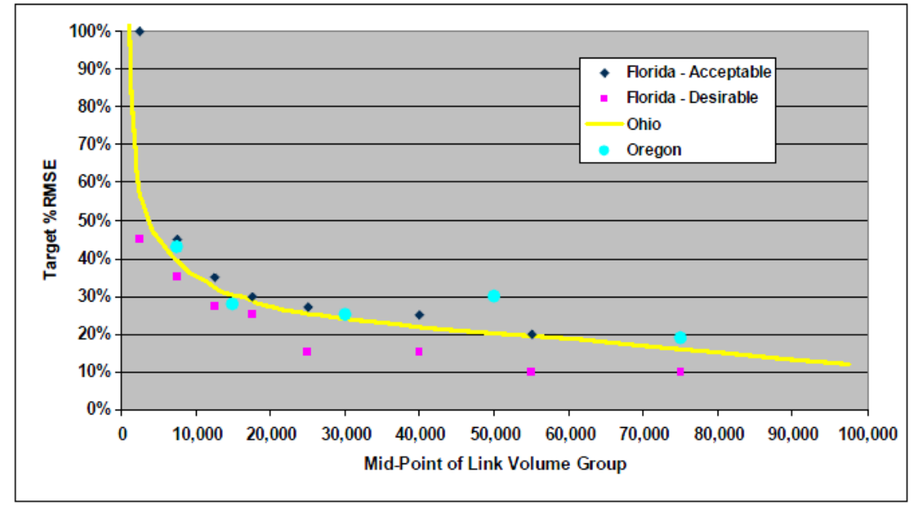
Year	Observations	RMSE	% RMSE	Sum of Count	Sum of Flows	%Flow/Count
2010	30	14,157.68	35.58	1,193,700	1,042,169.42	-12.69
2015	34	9,194.57	31.68	986,842	761,521.73	-22.83
2015	33	7,233.20	26.39	904,430	712,989.36	-21.17

RMSE is frequently used to measure the differences between values predicted by the model and the values actually observed, representing the sample standard deviation. For year 2010, the percent RMSE for the study corridor is about 35.58% and 31.68% for year 2015, indicating that the traffic projected by the model is closer to the field counts in 2015 than in 2010.

FHWA's *Travel Model Validation and Reasonableness Checking Manual* provides target percent RMSE guidelines based on the link volume group, as shown in **Figure 2**. The guidelines recommend that if mid-point of link volume group is greater than 15,000, the target percent RMSE should be around or below 30%.

For project base year 2015, the AADT counts range from 15,000 to 82,412. At these count locations, the model estimates for daily traffic flows range from 12,867 to 48,532. The percent RMSE of 31.68% for the corridor may be considered acceptable but not desirable. In addition, the flow vs. count summary (%Flow/Count in the table) indicates that the model significantly underestimates the volumes along the corridor. The total traffic flow estimated by the model is 22.83% lower than the total AADT counts and further investigation is needed for flow/count comparison.

By examining the counts, the largest discrepancy between estimated traffic and daily count occurs at the most northern count location (15H261), just south of SH 122. The location has a daily traffic of 82,412 and the projected traffic flow for 2015 is 48,532. If we eliminate this count location, the percent RMSE improves to 26.39% (as shown in **Table 1**). However, on the average, the estimated flow is still 21.17% below the counts.



Sources: Ohio: Giaimo, Gregory, Travel Demand Forecasting Manual 1–Traffic Assignment Procedures; Florida: FSUTMS-Cube Framework Phase II, Model Calibration and Validation Standards: Model Validation Guidelines and Standards; and Oregon: FSUTMS-Cube Framework Phase II, Model Calibration and Validation Standards, Draft Technical Memorandum 1.

Figure 2: Target %RMSE (Source: FHWA's *Travel Model Validation and Reasonableness Checking Manual, 2nd edition*)

Table 2 presents the list of model projected daily flow vs. field counted AADT for year 2015. The count locations and segment ID are presented in geographic order from north to south. The table also shows the percentage difference of estimated flow compared to daily count. The percentage flow/count difference confirms that the model significantly underestimates the traffic for base year 2015 for I-37 corridor.

Table 2: Year 2015 Model Flow Vs. Daily Counts

LinkID	Count Location	Total Flow	Daily Counts	Segment	% Difference
767599	15H261	48,532	82,412	14	-41.1%
767331	15H259	40,811	44,079	14	-7.4%
3327739	15H258A	23,937	33,504	14	-28.6%
766418	15SP321	23,937	40,559	13	-41.0%
766096	15E9A	25,435	34,788	13	-26.9%
765992	7D2A	25,435	34,788	12	-26.9%
762504	7H9	23,959	33,514	12	-28.5%
761051	7H13	21,859	32,228	12	-32.2%
760691	7H12	13,366	23,317	11	-42.7%

760642	7H22	14,086	23,496	11	-40.0%
3327728	7H21	21,134	27,829	11	-24.1%
750435	7H20A	22,312	27,517	9	-18.9%
750353	7H102	21,250	26,211	9	-18.9%
756544	7H101	21,158	25,573	8	-17.3%
755319	7H108A	22,361	19,843	8	12.7%
755588	149H103A	20,338	27,493	7	-26.0%
752020	149SP232	21,710	28,522	7	-23.9%
754201	149H125	12,868	18,216	6	-29.4%
754304	149H123	14,700	21,988	6	-33.1%
753158	149H122	14,221	21,041	6	-32.4%
779599	149H3A	14,221	20,472	6	-30.5%
779566	149SP54	15,534	18,172	5	-14.5%
736906	149D10	16,315	24,655	4	-33.8%
735218	149H10	17,355	18,082	4	-4.0%
735296	149D11	17,916	17,782	4	0.8%
736545	205E129A	17,916	15,000	4	19.4%
736592	205H100	17,489	15,000	4	16.6%
735851	205H102	16,270	25,569	4	-36.4%
736454	205H104	24,569	25,055	3	-1.9%
739264	205H83A	21,485	29,012	2	-25.9%
739313	205H83	20,969	23,577	2	-11.1%
739788	205H68	22,717	24,665	2	-7.9%
741034	205H67A	42,678	51,685	1	-17.4%
740965	178E100	42,678	51,198	1	-16.6%

Model Growth Rate Evaluation: 2015 – 2040

As part of the reasonableness check, the SAM traffic projection growth (2015 to 2040) and the model population growth in the TAZs that are adjacent to I-37 corridor were examined. The adjacent TAZs and I-37 corridor segments are illustrated in **Figure 3**. The corridor is highlighted in purple with segment labels, and the adjacent TAZ selections are shaded red. In addition to the investigation of traffic and population growth projected by the model, the historic growth rate of saturation counts (2000 to 2015) was also calculated.

Table 3 presents the growth rate for traffic projections from 2015 to 2040. The traffic projection indicates that the northern segments close to San Antonio (i.e., segments 12 through 14) experience faster growth rate than the middle rural segments and the southern segments that are close to the Corpus Christi metropolitan area. The traffic projections indicate that segments in the southern portion of the corridor have the lowest growth rate.

Table 4 presents the population growth rate of adjacent TAZs. In the northern segments, the population growth is consistent with traffic projection growth, at around 4%. However, in the middle and southern segments, the population growth rates are less than traffic growth. This may be due to a significant portion of traffic in the rural segment of the corridor is through traffic and the adjacent population growth does not reflect the through traffic growth.

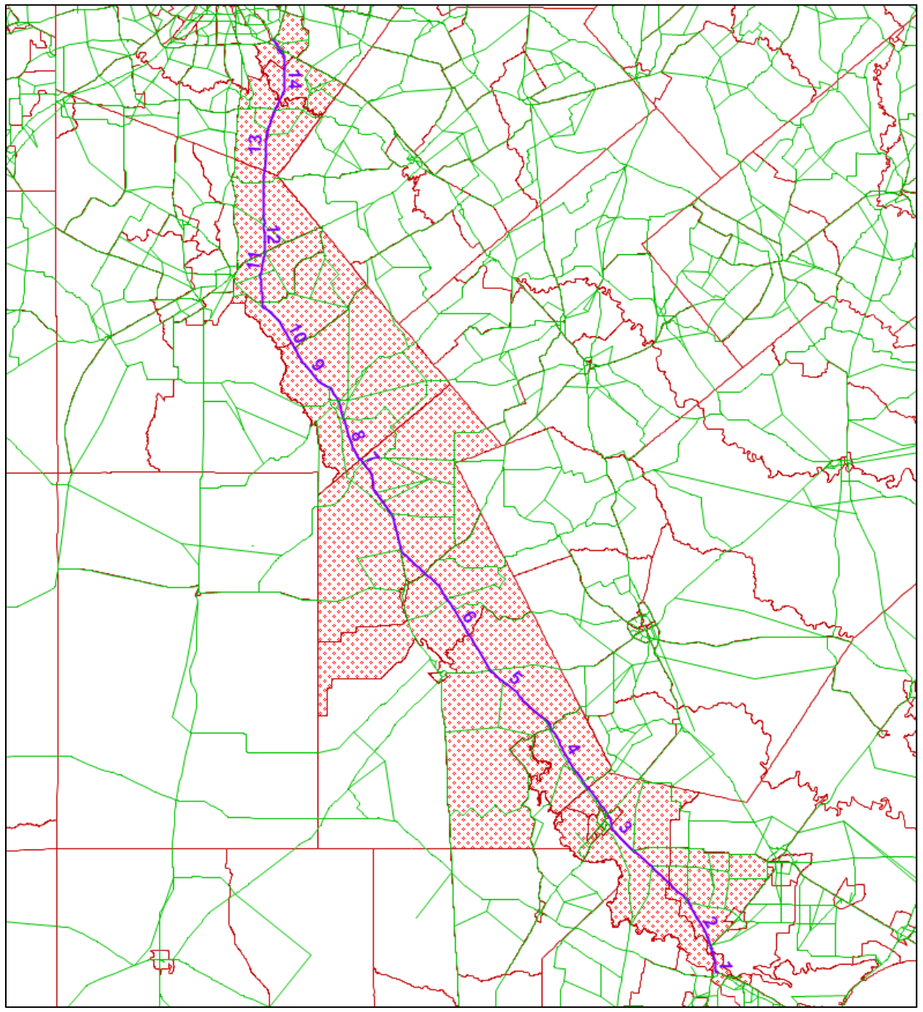


Figure 3: I-37 Corridor Segments and Adjacent TAZs

Table 3: Growth Rate for Traffic Projections: 2015 - 2040

Segments	Number of Links	Total 2015 Flow	Total 2040 Flow	2015 – 2040 Growth	Annual Linear Growth
Seg. 12-14	19	578876	1174195	102.8%	4.1%
Seg. 4-11	32	577882.5	878817.9	52.1%	2.1%
Seg. 1-3	14	477488.6	591331.6	23.8%	1.0%

Table 4: Growth Rate for Adjacent TAZ Population: 2015 – 2040

Segments	Total Population 2015	Total Population 2040	2015 – 2040 Growth	Annual Linear Growth
Seg. 12-14	32625	65620	101.1%	4.0%
Seg. 4-11	9529	12261	28.7%	1.1%
Seg. 1-3	15064	16491	9.5%	0.4%

Traffic Projection

Traffic Count Growth Rate

As the model validation and reasonableness check indicates that the model significantly underestimates the daily volume of I-37 corridor, we recommend using 2015 AADT counts and applying growth factors to 2015 AADT to obtain 2040 daily volume projections.

Along I-37 corridor, there are a total of 35 count locations with historic counts. The earliest year when the counts are available ranges from 1999 to 2011. One of the problems of using growth rates from counts is that traffic counts fluctuate to reflect local economic condition. Therefore, a growth rate based on historic counts in a short period may not be appropriate for long term planning horizon traffic projections. As most of the count locations along the corridor have more than 15 years of historical counts available, a more reliable growth rate for 2040 traffic projection can be derived. **Table 5** presents the annual linear growth rate for each count location, from south to north along the corridor.

Table 5: Growth Rates for Traffic Counts

Location ID	Segment	Annual Linear Growth Rate	Earliest Year When Count is Available
178E100	1	3.75%	1999
205H67A	1	2.50%	2002
205H68	2	3.32%	1999
205H83	2	3.64%	1999
205H83A	2	5.81%	2001
205H104	3	3.66%	1999
205H102	4	7.07%	1999
205H100	4	1.31%	1999
205E129A	4	1.02%	1999
149D11	4	4.84%	2011
149H10	4	2.51%	1999
149D10	4	16.65%	2011
149SP54	5	2.42%	1999
149H3A	6	4.07%	1999
149H122	6	4.02%	1999
149H123	6	3.71%	1999
149H125	6	3.92%	1999
149SP232	7	8.48%	2008
149H103A	7	5.85%	1999
7H108A	8	2.42%	1999
7H101	8	5.25%	1999
7H102	9	5.54%	1999
7H20A	9	7.00%	2001
7H21	11	4.90%	1999
7H22	11	4.55%	1999
7H12	11	4.31%	1999
7H13	12	5.33%	1999
7H9	12	5.58%	1999
7D2A	12	11.24%	2011
15E9A	13	5.70%	1999
15SP321	13	7.71%	2011
15H258A	14	2.06%	2001
15H259	14	3.59%	1999
15H261	14	3.85%	1999

Average growth rates for the southern, middle, and northern segments were calculated and are presented in **Table 6** (two locations with outliner growth rates, 149D10 and 7D2A, are excluded in the calculation).

Table 6: 2015 – 2040 Growth by Segments

Segments	Annual Linear Growth Rate	2015 - 2040 Growth
Seg. 1 – 3 (South)	3.78%	95%
Seg, 4 – 11 (Middle)	4.38%	109%
Seg. 12 – 14 (North)	4.83%	121%

For southern segments, the growth from 2015 – 2040 is 95%, and 109% for middle segments and 121% for northern segments. The growth in northern segments is close to the model projection (121% vs. 109%). However, the growth rates based on historical traffic counts are much higher for middle and southern segments than those of model-based growth. As we anticipate a larger portion of traffic in the middle and southern segments will be through traffic, it is safe to conclude that traffic in these segments will grow faster than the local population growth. The historic counts over the past 16-year period confirm this conclusion and thus justifies using these growth rates for 2040 daily volume projection.

2040 Traffic Estimates

As the model validation and reasonableness check indicates that the model significantly underestimates the daily volume of I-37 corridor, we recommend using 2015 AADT counts and applying growth factors to 2015 AADT to obtain 2040 daily volume projections. After evaluating the study area, traffic counts, and model projections, a hybrid approach was developed to estimate the 2040 traffic projections:

- Growth rates from 2015 – 2040 derived from historic traffic counts were used along with 2015 AADT counts, when available, as a base for 2040 projection.
- For roadway segments (links) where 2015 AADT counts are not available (a total of 64 links for the study corridor and 34 with AADT counts), 2015 model projections are used as base and are proportionally adjusted to keep the entire corridor projections consistent with the counts.
- Then, the growth rates are applied to adjusted 2015 projections to obtain 2040 projection.

The 2015 AADT counts, traffic projections for existing 2015 and future horizon 2040 are shown in **Table 7**. The links are shown in geographic order from southern segments to northern segments. **Figure 4** shows the thematic maps illustrating main lane traffic volumes for 2015 and 2040. The typical segment link volumes are labeled in thousands in the thematic map.

Table 7: Daily Traffic Projections for 2015 & 2040

Link ID	Length	Count Location ID	Segment	2015 AADT	2015 Daily Projection	2040 Daily Projection
740943	0.135		1		38,414	74,907
740924	0.031		1		51,441	100,309
740965	1.945	178E100	1	51,198	51,198	99,836
741034	0.539	205H67A	1	51,685	51,685	100,785
741486	0.074		2		50,591	98,652
741048	0.035		2		50,591	98,652
739788	5.517	205H68	2	24,665	24,665	48,096
739917	0.532		2		23,770	46,351
740230	2.199		2		24,857	48,471
739313	2.960	205H83	2	23,577	23,577	45,975
739778	1.000		2		25,467	49,660
739264	1.646	205H83A	2	29,012	29,012	56,573
736454	3.455	205H104	3	25,055	25,055	48,857
735851	1.629	205H102	4	25,569	25,569	53,439
736592	1.819	205H100	4	15,000	15,000	31,349
736545	1.581	205E129A	4	15,000	15,000	31,349
735296	0.799	149D11	4	17,782	17,782	37,164
735218	1.690	149H10	4	18,082	18,082	37,791
736906	5.129	149D10	4	24,655	24,655	51,528
734476	0.343		5		17,402	36,370
734418	1.331		5		17,402	36,370
734198	5.860		5		17,807	37,216
779640	0.409		5		18,171	37,977
779566	1.361	149SP54	5	18,172	18,172	37,979
779599	3.235	149H3A	6	20,472	20,472	42,786
753158	4.394	149H122	6	21,041	21,041	43,975
753137	1.312		6		22,373	46,759
754304	3.750	149H123	6	21,988	21,988	45,954
754201	3.785	149H125	6	18,216	18,216	38,071
752013	0.029		7		28,921	60,444
752020	2.609	149SP232	7	28,522	28,522	59,610
752033	1.075		7		28,921	60,444
755588	3.085	149H103A	7	27,493	27,493	57,460
3235891	3.688		7		27,093	56,624
755456	0.469		7		29,788	62,256
755319	4.859	7H108A	8	19,843	19,843	41,471
756544	1.789	7H101	8	25,573	25,573	53,447

Link ID	Length	Count Location ID	Segment	2015 AADT	2015 Daily Projection	2040 Daily Projection
750353	2.018	7H102	9	26,211	26,211	54,780
750435	5.750	7H20A	9	27,517	27,517	57,510
760536	4.726		10		29,266	61,165
3327732	0.038		10		29,266	61,165
3240749	0.038		10		29,266	61,165
3327728	0.746	7H21	11	27,829	27,829	58,162
760642	0.673	7H22	11	23,496	23,496	49,106
760691	5.391	7H12	11	23,317	23,317	48,732
761051	3.994	7H13	12	32,228	32,228	71,223
761758	2.399		12		33,803	74,704
762504	1.339	7H9	12	33,514	33,514	74,065
765992	1.152	7D2A	12	34,788	34,788	76,881
766096	1.623	15E9A	13	34,788	34,788	76,881
766113	2.119		13		34,788	76,881
766367	0.232		13		34,788	76,881
766373	0.141		13		35,209	77,811
766384	0.132		13		35,209	77,811
766400	0.133		13		35,209	77,811
766418	1.622	15SP321	13	40,559	40,559	89,635
3327744	0.066		13		40,559	89,635
766932	0.066		13		40,559	89,635
3327739	0.602	15H258A	14	33,504	40,559	89,635
767331	4.755	15H259	14	44,079	44,079	97,414
767472	0.119		14		44,079	97,414
768526	1.596		14		44,079	97,414
767599	0.700	15H261	14	82,412	82,412	182130
767559	1.101		14		89,569	197,947

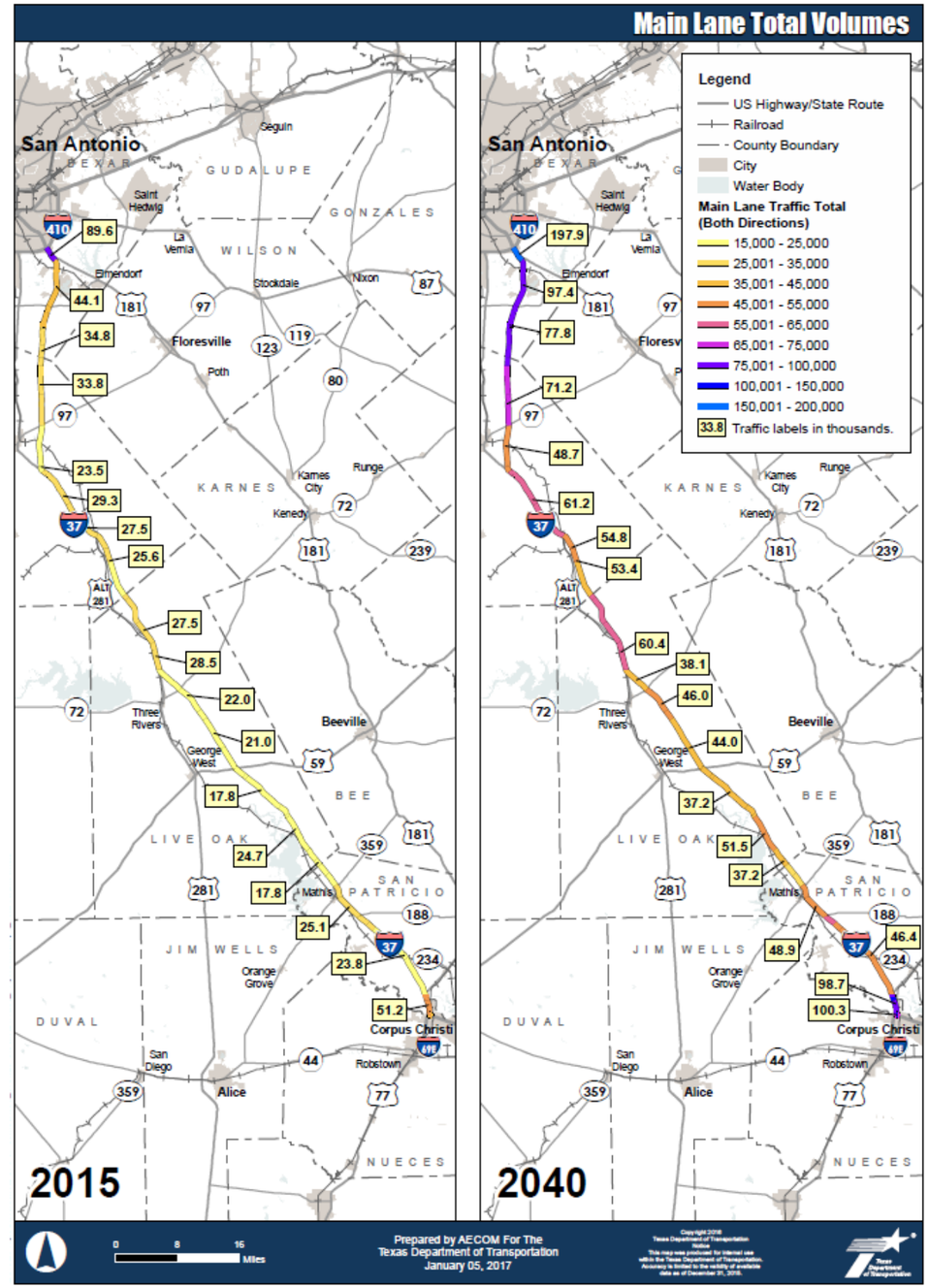


Figure 4: 2015 and 2040 Main Lane Traffic Projections

Frontage Road Volumes

The I-37 corridor in the study area does not have continuous frontage roads on both sides. **Figure 5** illustrates the corridor frontage road location in the study area.

Historically, the traffic counts collected by TxDOT along I-37 corridor had not distinguished main lane and frontage road traffic. In recent years the data collection practice has changed and AADT counts at main lane and frontage roads are available respectively.

The possibility of modifying the roadway network to add frontage roads was considered. However, after coding a significant amount of the frontage roads along the I-37 corridor, it was concluded that the frontage road projections obtained in this way may not be accurate since the corridor mainly goes through the rural area of the State connecting San Antonio and Corpus Christi. The roadway network is sparse and there are not many feeder roads connected to the corridor and the frontage roads. Therefore, within the model, the frontage road traffic projection is mainly done to split the traffic between main lane and frontage road. Under the principles of user equilibrium assignment, for uncongested portion of roadway network such as the rural sections of I-37 corridor, the traffic split will be determined by travel time as in the all-or-nothing traffic assignment. In other words, since the corridor is not congested, the traffic will use I-37 main lane as it travels rather than using the frontage road.

After a thorough consideration of the underlying theory of traffic assignment, workload of coding detailed frontage road network, and the test results with frontage roads, it is determined that the future frontage road projections will be derived proportionally based on frontage road counts. **Table 8** presents 2015 frontage road volume counts. For the corridor segments with two-way frontage road, the frontage road volumes shown are for two-way total volumes.

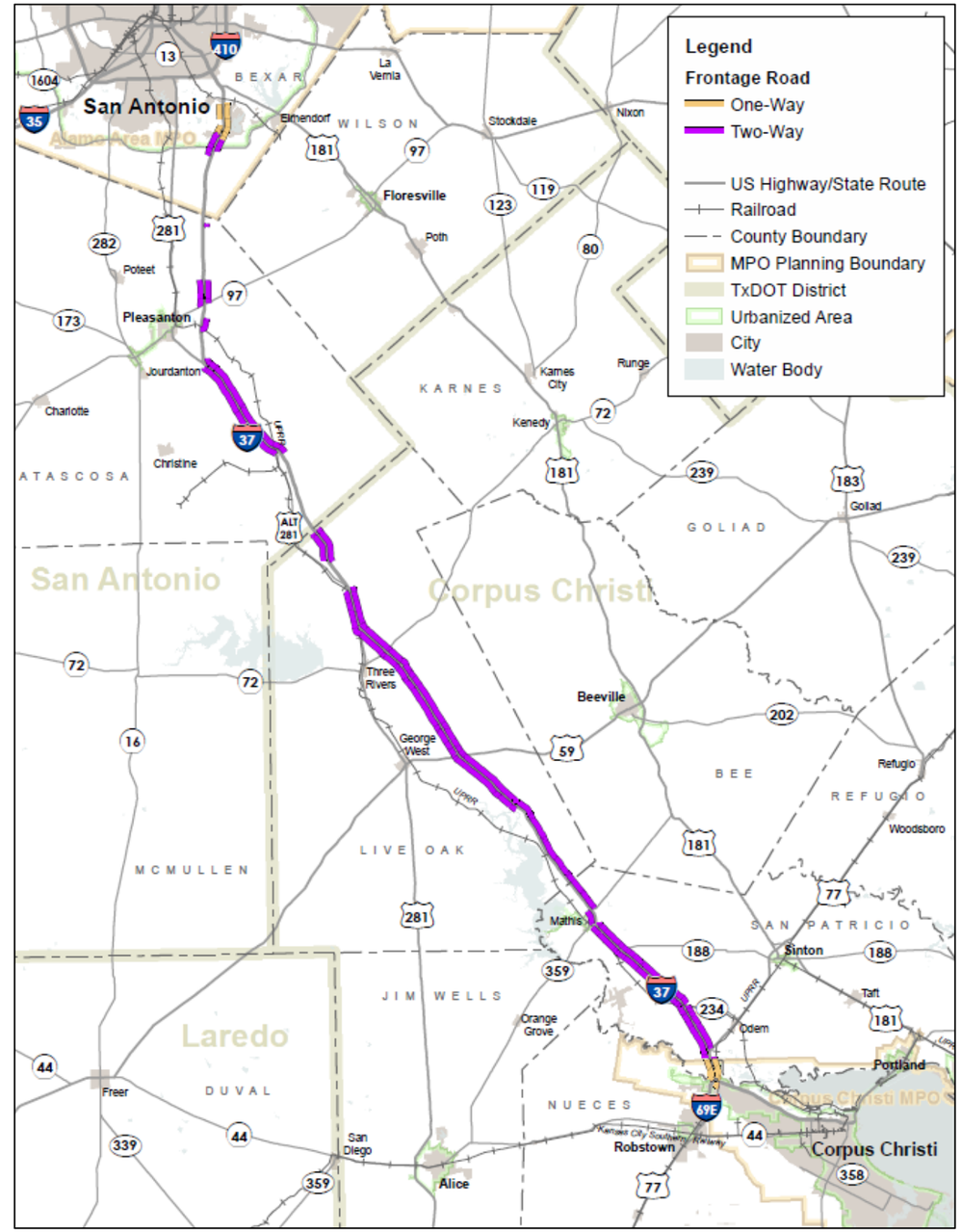


Figure 5: I-37 Frontage Road Location

Table 8: 2015 Frontage Road Counts

Count Location ID	Segment	Main Lane AADT	Frontage Road North	Frontage Road South	Total Frontage Road	% Total Frontage Road
178E100	1	51,198	1,008	1,156	2,164	4.2%
205H67A	1	51,685	88	147	235	0.5%
205H68	2	24,665	96	69	165	0.7%
205H83	2	23,577	45	168	213	0.9%
205H83A	2	29,012	153	213	366	1.3%
205H104	3	25,055	496	117	613	2.4%
205H102	4	25,569	768	153	921	3.6%
205H100	4	15,000	433	N/A	433	2.9%
205E129A	4	15,000	89	N/A	89	0.6%
149D11	4	17,782	456	N/A	456	2.6%
149H10	4	18,082	50	N/A	50	0.3%
149D10	4	24,655	22	N/A	22	0.1%
MS54	5	17,433	N/A	247	247	1.4%
149SP54	5	18,172	61	285	346	1.9%
149H3A	6	20,472	353	166	519	2.5%
149H122	6	21,041	602	102	704	3.3%
149H123	6	21,988	322	398	720	3.3%
149H125	6	18,216	771	186	957	5.3%
149SP232	7	28,522	1,288	753	2,041	7.2%
7H108A	8	19,843	463	787	1,250	6.3%
7H102	9	26,211	10	N/A	10	0.0%
7H20A	9	27,517	188	105	293	1.1%
7H21	10	27,829	1,075	291	1,366	4.9%
7H22	11	23,496	1,505	N/A	1,505	6.4%
7H13	12	32,228	616	83	699	2.2%
15SP321	13	40,559	4,105	29	4,134	10.2%
15H258A	14	33,504	4,849	4,578	9,427	28.1%
15H258	14	33,504	5,713	7,190	12,903	38.5%
M1621	14	43,310	520	78	598	1.4%
15H259	14	44,079	4,949	3,043	7,992	18.1%
15H261	14	82,412	N/A	1,198	1,198	1.5%

The frontage road volumes for the corridor were estimated using the 2015 and 2040 main lane volumes from Table 7 and the percentage distributions from Table 8. For the links where frontage road counts are not available, the frontage road volume percentage from the nearest count is used to calculate the frontage road volume. As there are multiple frontage road counts in some segments, the resulting frontage road percentage varies within certain segments.

It should be noted that the frontage road volumes obtained in this way are an average estimate, as the frontage volumes vary, sometimes significantly, in mid-segment and at upstream and downstream of intersections. The resulting frontage road volumes are presented in **Table 9**. The thematic maps of 2015 and 2040 frontage road volumes are shown in **Figure 6**.

Table 9: Frontage Road Volume Projections

Segment	LinkID	2015 Main Lane Traffic	2040 Main Lane Traffic	2015 Frontage Road Total	2040 Frontage Road Total	% FR/Mainline
1	740943	38,414	74,907	1,623	3,166	4.2%
1	740924	51,441	100,309	2,174	4,239	4.2%
1	740965	51,198	99,836	2,164	4,219	4.2%
1	741034	51,685	100,785	235	458	0.5%
2	741486	50,591	98,652	338	659	0.7%
2	741048	50,591	98,652	338	659	0.7%
2	739788	24,665	48,096	165	321	0.7%
2	739917	23,770	46,351	159	310	0.7%
2	740230	24,857	48,471	166	324	0.7%
2	739313	23,577	45,975	213	415	0.9%
2	739778	25,467	49,660	230	448	0.9%
2	739264	29,012	56,573	366	713	1.3%
3	736454	25,055	48,857	613	1,195	2.4%
4	735851	25,569	53,439	921	1,924	3.6%
4	736592	15,000	31,349	433	904	2.9%
4	736545	15,000	31,349	89	186	0.6%
4	735296	17,782	37,164	456	953	2.6%
4	735218	18,082	37,791	50	104	0.3%
4	736906	24,655	51,528	22	45	0.1%
5	734476	17,402	36,370	174	363	1.0%
5	734418	17,402	36,370	174	363	1.0%
5	734198	17,807	37,216	178	372	1.0%
5	779640	18,171	37,977	181	379	1.0%
5	779566	18,172	37,979	346	723	1.9%
6	779599	20,472	42,786	519	1,084	2.5%
6	753158	21,041	43,975	704	1,471	3.3%
6	753137	22,373	46,759	738	1,543	3.3%
6	754304	21,988	45,954	720	1,504	3.3%
6	754201	18,216	38,071	957	2,000	5.3%
7	752013	28,921	60,444	1,822	3,807	6.3%
7	752020	28,522	59,610	2,041	4,265	7.2%

Segment	LinkID	2015 Main Lane Traffic	2040 Main Lane Traffic	2015 Frontage Road Total	2040 Frontage Road Total	% FR/Mainline
7	752033	28,921	60,444	2,069	4,325	7.2%
7	755588	27,493	57,460	0	0	0
7	3235891	27,093	56,624	19,38	4,051	7.2%
7	755456	29,788	62,256	0	0	0
8	755319	19,843	41,471	0	0	0
8	756544	25,573	53,447	0	0	0
9	750353	26,211	54,780	10	20	0.0%
9	750435	27,517	57,510	293	612	1.1%
10	760536	29,266	61,165	1,434	2,997	4.9%
10	3327732	29,266	61,165	1,434	2,997	4.9%
10	3240749	29,266	61,165	1,434	2,997	4.9%
11	3327728	27,829	58,162	1,366	2,854	4.9%
11	760642	23,496	49,106	1,505	3145	6.4%
11	760691	23,317	48,732	0	0	0
12	761051	32,228	71,223	699	1,544	2.2%
12	761758	33,803	74,704	0	0	0
12	762504	33,514	74,065	0	0	0
12	765992	34,788	76,881	0	0	0
13	766096	34,788	76,881	0	0	0
13	766113	34,788	76,881	0	0	0
13	766367	34,788	76,881	0	0	0
13	766373	35,209	77,811	0	0	0
13	766384	35,209	77,811	0	0	0
13	766400	35,209	77,811	0	0	0
13	766418	40,559	89,635	0	0	0
13	3327744	40,559	89,635	4,134	9,136	10.2%
13	766932	40,559	89,635	4,134	9,136	10.2%
14	3327739	40,559	89,635	11,412	25,220	28.1%
14	767331	44,079	97,414	7,992	17,662	18.1%
14	767472	44,079	97,414	0	0	0
14	768526	44,079	97,414	0	0	0
14	767599	82,412	182,130	0	0	0
14	767559	89,569	197,947	0	0	0

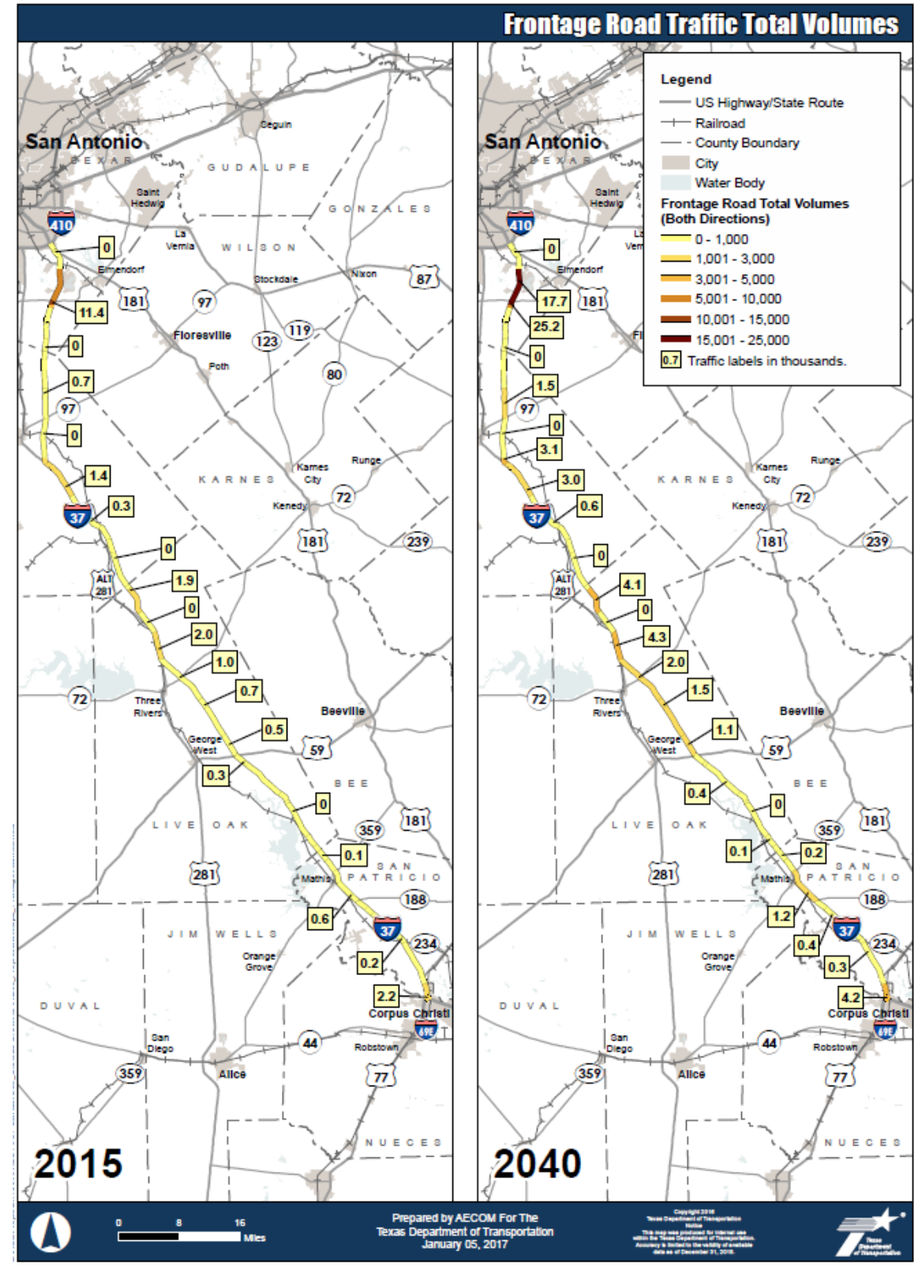


Figure 6: 2015 and 2040 Frontage Road Volumes

Peak Hour Traffic

TxDOT's traffic count database provides 30th highest hourly volume at certain count locations. The 30th highest hourly volume can be used to calculate K-values and the K-values can be used to estimate peak hour traffic volumes. There are a total of 10 count locations along I-37 with 30th highest hourly volume recorded. The 30th highest hourly volume and resulting K-value for 2015 are presented in **Table 10**.

Table 10: 30th Highest Hourly Volume and K-Value

LOCATION_ID	Segment	AADT_2015	DHV30_2015	K_Value2015
M1243	1	68,368	5,277	8%
MS54	6	17,433	1,036	6%
S54	6	19,067	3,005	16%
S232	7	26,072	3,594	14%
LW512	7	22,658	1,325	6%
149D10A	8	34,386	1,760	5%
A321	13	41,251	4,320	10%
S321	13	40,560	4,314	11%
MS321	13	32,295	2,575	8%
M1621	14	43,310	3,408	8%

The peak hour traffic counts indicate that K-values in the northern segments range from 8% to 11% and around 8% in the southern segments. It is recommended to use 9% for segments 1 through 3 and segments 12 through 14. In the middle rural segments, the K-values range from 5% to 16% with an average of 9%. As K-value usually is higher in rural area, it is recommended to use 12% for segments 4 through 11. The proposed K-values are presented in **Table 11** and these factors can be applied to mainline volumes to estimate peak hour traffic.

Table 11: K-Value by Segments

Segments	K-Value
Seg. 1 – 3 (South)	9%
Seg, 4 – 11 (Middle)	12%
Seg. 12 – 14 (North)	9%

Freight Truck Traffic Projection

Methodology for Calculating Main lane Freight Truck Traffic Projections

Due to the lack of vehicle classification counts along the corridor, the project team could not adjust model projections or develop historic growth rates for freight traffic, as was done for total traffic projections. Instead, the project team used observed vehicle classification count data along the corridor and proven TxDOT methodology to determine truck percentages to apply to total traffic projections. The TxDOT methodology employs the Half Growth Method, represented by the following equation:

$$Truck\% = \frac{\mathrm{AB} + \mathrm{C}}{2\mathrm{B}}$$

Where,

- A = % trucks (counts)
- B = Beginning year average daily traffic (ADT)
- C = Number of trucks (counts)

One caveat to this method is that if the total count ADT is greater than or equal to twice the projected ADT, the following formula is used:

$$Truck\% = \frac{\mathrm{AB} + \mathrm{C}}{\mathrm{D}}$$

Where,

- D = ADT (counts)

In order to get the variable inputs for the Half Growth equation, available vehicle classification count data was matched to each of the 14 corridor segments based on the characteristic of the segments and intersection of major cross-streets. In other words, if there were no major cross-streets between multiple corridor segments and no major nearby factors that might potentially impact freight truck traffic, the count data would be matched to multiple comparable segments—and the links within those segments. **Table 12** below lists the available 2015 vehicle classification (MVC) counts taken from the TxDOT Traffic Count Database System (TCDS) website, including count location ID, total volumes, truck volumes, and truck percentage. Note that Truck Volume and Truck % includes FHWA vehicle classifications 5 through 13.

Table 12: TxDOT Vehicle Classification Counts (2015)

Segment	Location ID	County	Facility	Volume	Truck Volume	Truck %
5	MS54	Live Oak	Main lane	14,540	3,504	24.10%
5	MS54FR	Live Oak	Frontage	306	23	7.52%
7	LW512	Live Oak	Main lane	18,897	5,249	27.78%
13	MS321	Bexar	Main lane	31,173	6,933	22.24%
14	M1621	Bexar	Main lane	43,970	8,188	18.62%
14	M1621FR	Bexar	Frontage	671	31	4.62%

For each model network link, which included 2015 and 2040 daily traffic flows, the corresponding count data and projected daily traffic flows (represented as ADT in the equation above) were input into the equation, resulting in a truck percentage for each link. The process was completed using both 2015 and 2040 daily projected traffic flows (from **Table 7**). The estimated truck percentages, for each link, were then multiplied by the projected traffic flows to get 2015 and 2040 daily freight truck main lane traffic projections. **Table 13** shows the calculated truck percentages for each link, along with the count station ID from which input data was taken to enter into the Half Growth equation.

Table 13: Truck Percentages for Freight Truck Traffic Projection (2015 & 2040)

Link ID	Count Station ID	Segment	2015 Main lane Truck %	2040 Main lane Truck %
740943	MS54	1	16.61%	14.39%
740924	MS54	1	15.46%	13.80%
740965	MS54	1	15.47%	13.80%
741034	MS54	1	15.44%	13.79%
741486	MS54	2	15.51%	13.83%
741048	MS54	2	15.51%	13.83%
739788	MS54	2	19.15%	15.69%
739917	MS54	2	19.42%	15.83%
740230	MS54	2	19.10%	15.66%
739313	MS54	2	19.48%	15.86%
739778	MS54	2	18.93%	15.58%
739264	MS54	2	18.09%	15.15%
736454	MS54	3	19.04%	15.64%
735851	MS54	4	18.90%	15.33%
736592	MS54	4	23.73%	17.64%
736545	MS54	4	23.73%	17.64%
735296	MS54	4	21.90%	16.76%
735218	MS54	4	21.74%	16.69%
736906	MS54	4	19.16%	15.45%
734476	MS54	5	22.12%	16.87%
734418	MS54	5	22.12%	16.87%
734198	MS54	5	21.89%	16.76%
779640	MS54	5	21.69%	16.66%
779566	MS54	5	21.69%	16.66%
779599	MS54	6	20.61%	16.14%
753158	MS54	6	20.38%	16.03%
753137	MS54	6	19.88%	15.80%
754304	MS54	6	20.02%	15.86%
754201	MS54	6	21.67%	16.65%
752013	LW512	7	22.96%	18.23%
752020	LW512	7	23.09%	18.29%
752033	LW512	7	22.96%	18.23%
755588	LW512	7	23.44%	18.46%
3235891	LW512	7	23.58%	18.52%
755456	LW512	7	22.70%	18.11%
755319	LW512	8	27.12%	20.22%
756544	LW512	8	24.15%	18.80%
750353	LW512	9	23.90%	18.68%
750435	LW512	9	23.43%	18.45%
760536	LW512	10	22.86%	18.18%
3327732	LW512	10	22.86%	18.18%
3240749	LW512	10	22.86%	18.18%
3327728	LW512	11	23.32%	18.40%
760642	LW512	11	25.06%	19.23%
760691	LW512	11	25.15%	19.28%
761051	MS321	12	21.88%	15.99%
761758	MS321	12	21.38%	15.76%
762504	MS321	12	21.46%	15.80%
765992	MS321	12	21.08%	15.63%
766096	MS321	13	21.08%	15.63%
766113	MS321	13	21.08%	15.63%
766367	MS321	13	21.08%	15.63%
766373	MS321	13	20.97%	15.58%
766384	MS321	13	20.97%	15.58%
766400	MS321	13	20.97%	15.58%
766418	MS321	13	19.67%	14.99%
3327744	MS321	13	19.67%	14.99%
766932	MS321	13	19.67%	14.99%
3327739	M1621	14	19.40%	13.88%
767331	M1621	14	18.60%	13.51%
767472	M1621	14	18.60%	13.51%
768526	M1621	14	18.60%	13.51%
767599	M1621	14	14.28%	11.56%
767559	M1621	14	13.88%	11.38%

Freight Truck Main lane Traffic Projections (2015 & 2040)

The 2015 and 2040 daily traffic projections (see **Table 7**) were used as the base for estimating freight truck traffic projections, again due to a lack of available vehicle class counts in the corridor. Calculating the freight truck traffic simply involved multiplying the truck percentages by the total daily traffic projections for each link for both 2015 and 2040. **Table 14** below shows the estimated freight truck main lane traffic projections for the base and horizon years. The thematic map of main lane truck volumes is shown in **Figure 7**.

Table 14: Daily Freight Truck Main Lane Traffic Projections (2015 & 2040)

Link ID	Segment	2015 Main Lane Truck Traffic	2040 Main Lane Truck Traffic
740943	1	6,381	10,778
740924	1	7,951	13,839
740965	1	7,921	13,782
741034	1	7,980	13,897
741486	2	7,848	13,640
741048	2	7,848	13,640
739788	2	4,724	7,548
739917	2	4,616	7,337
740230	2	4,747	7,593
739313	2	4,593	7,292
739778	2	4,821	7,736
739264	2	5,248	8,569
736454	3	4,771	7,639
735851	4	4,833	8,191
736592	4	3,560	5,530
736545	4	3,560	5,530
735296	4	3,895	6,230
735218	4	3,931	6,306
736906	4	4,723	7,961
734476	5	3,849	6,135
734418	5	3,849	6,135
734198	5	3,898	6,237
779640	5	3,942	6,328
779566	5	3,942	6,328
779599	6	4,219	6,908
753158	6	4,287	7,051
753137	6	4,448	7,386
754304	6	4,402	7,289
754201	6	3,947	6,340
752013	7	6,642	11,020
752020	7	6,586	10,904
752033	7	6,642	11,020
755588	7	6,443	10,606
3235891	7	6,388	10,490
755456	7	6,762	11,272
755319	8	5,381	8,385
756544	8	6,177	10,048
750353	9	6,265	10,233
750435	9	6,447	10,613
760536	10	6,690	11,120
3327732	10	6,690	11,120
3240749	10	6,690	11,120
3327728	11	6,490	10,703
760642	11	5,888	9,445
760691	11	5,863	9,393
761051	12	7,050	11,386
761758	12	7,225	11,774
762504	12	7,193	11,703
765992	12	7,335	12,016
766096	13	7,335	12,016
766113	13	7,335	12,016
766367	13	7,335	12,016
766373	13	7,382	12,119
766384	13	7,382	12,119
766400	13	7,382	12,119
766418	13	7,977	13,434
3327744	13	7,977	13,434
766932	13	7,977	13,434
3327739	14	7,870	12,439
767331	14	8,198	13,163
767472	14	8,198	13,163
768526	14	8,198	13,163
767599	14	11,767	21,050
767559	14	12,433	22,523

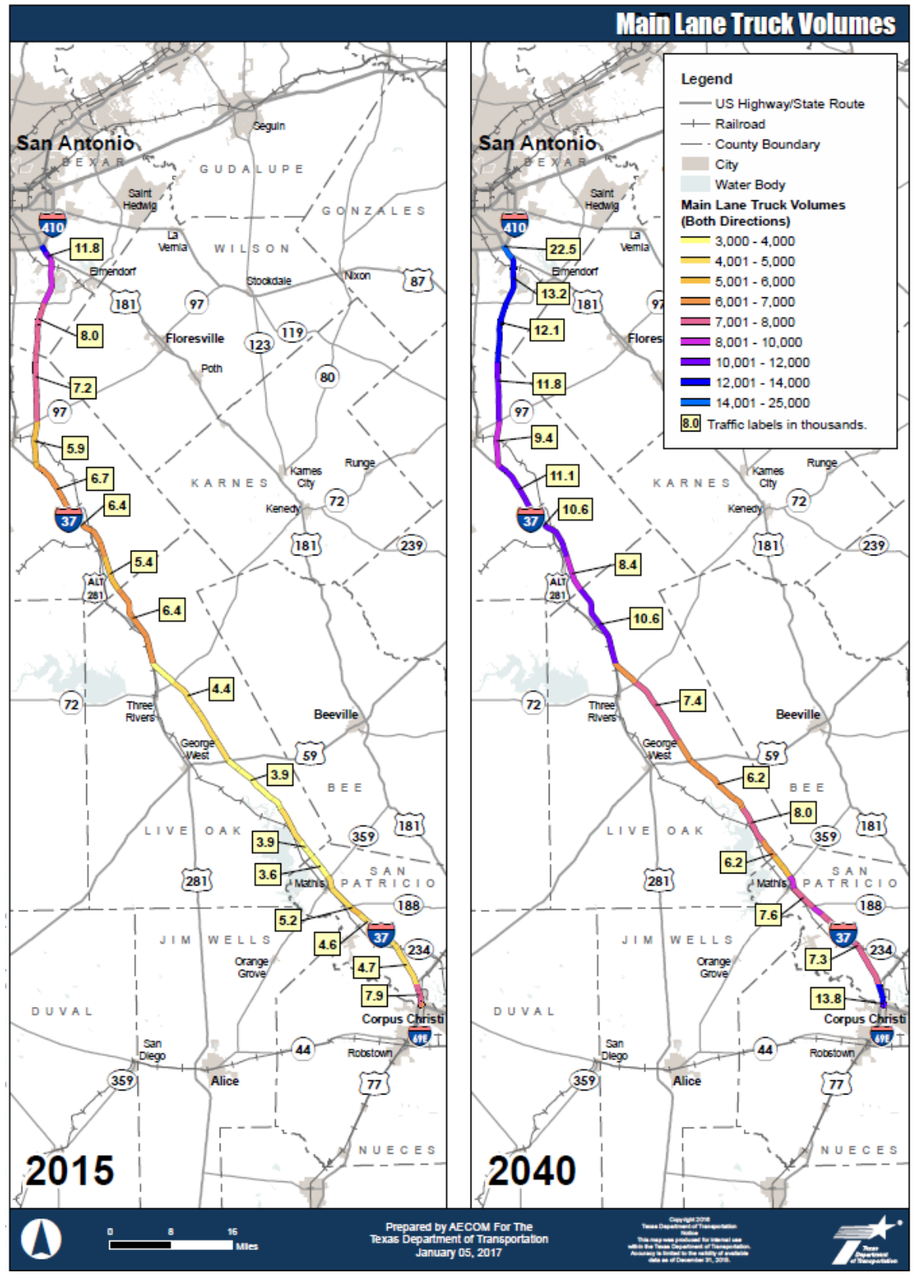


Figure 7: Main Lane Truck Volumes

Freight Truck Frontage Road Traffic Projections (2015 & 2040)

Freight truck traffic for frontage roads was also estimated using the Half Growth Method to determine truck percentage and by applying the percentage to total daily traffic projections. However, there are only two vehicle classification counts for frontage roads along the entire corridor. Therefore, the project team gathered additional input data from the 2015 TxDOT RHiNo database which provides total ADT, number of trucks, and truck percentage for frontage roads. The RHiNo data was used to calculate truck percentage when frontage vehicle classification count data was not available, which was a majority of the corridor. **Table 15** below shows the estimated freight truck frontage road traffic projections for the base and horizon years. The thematic map is shown in **Figure 8**.

Table 15: Daily Freight Truck Frontage Road Traffic Projections (2015 & 2040)

Link ID	Segment	2015 Frontage Road Truck Traffic	2040 Frontage Road Truck Traffic
740943	1	556	882
740924	1	672	1109
740965	1	891	1314
741034	1	107	228
741486	2	25	41
741048	2	25	41
739788	2	21	29
739917	2	17	25
740230	2	27	35
739313	2	29	40
739778	2	34	47
739264	2	42	62
736454	3	53	78
735851	4	371	573
736592	4	39	60
736545	4	8	12
735296	4	40	62
735218	4	5	8
736906	4	12	18
734476	5	10	17
734418	5	10	17
734198	5	11	15
779640	5	11	15
779566	5	25	39
779599	6	53	82
753158	6	331	511

753137	6	339	528
754304	6	71	110
754201	6	385	595
752013	7	813	1231
752020	7	859	1327
752033	7	865	1340
755588	7	0	0
3235891	7	103	210
755456	7	0	0
755319	8	0	0
756544	8	0	0
750353	9	0	0
750435	9	20	31
760536	10	115	179
3327732	10	115	179
3240749	10	115	179
3327728	11	112	173
760642	11	139	215
760691	11	0	0
761051	12	51	82
761758	12	0	0
762504	12	0	0
765992	12	0	0
766096	13	0	0
766113	13	0	0
766367	13	0	0
766373	13	0	0
766384	13	0	0
766400	13	0	0
766418	13	0	0
3327744	13	223	350
766932	13	223	350
3327739	14	532	884
767331	14	200	423
767472	14	0	0
768526	14	0	0
767599	14	0	0
767559	14	0	0

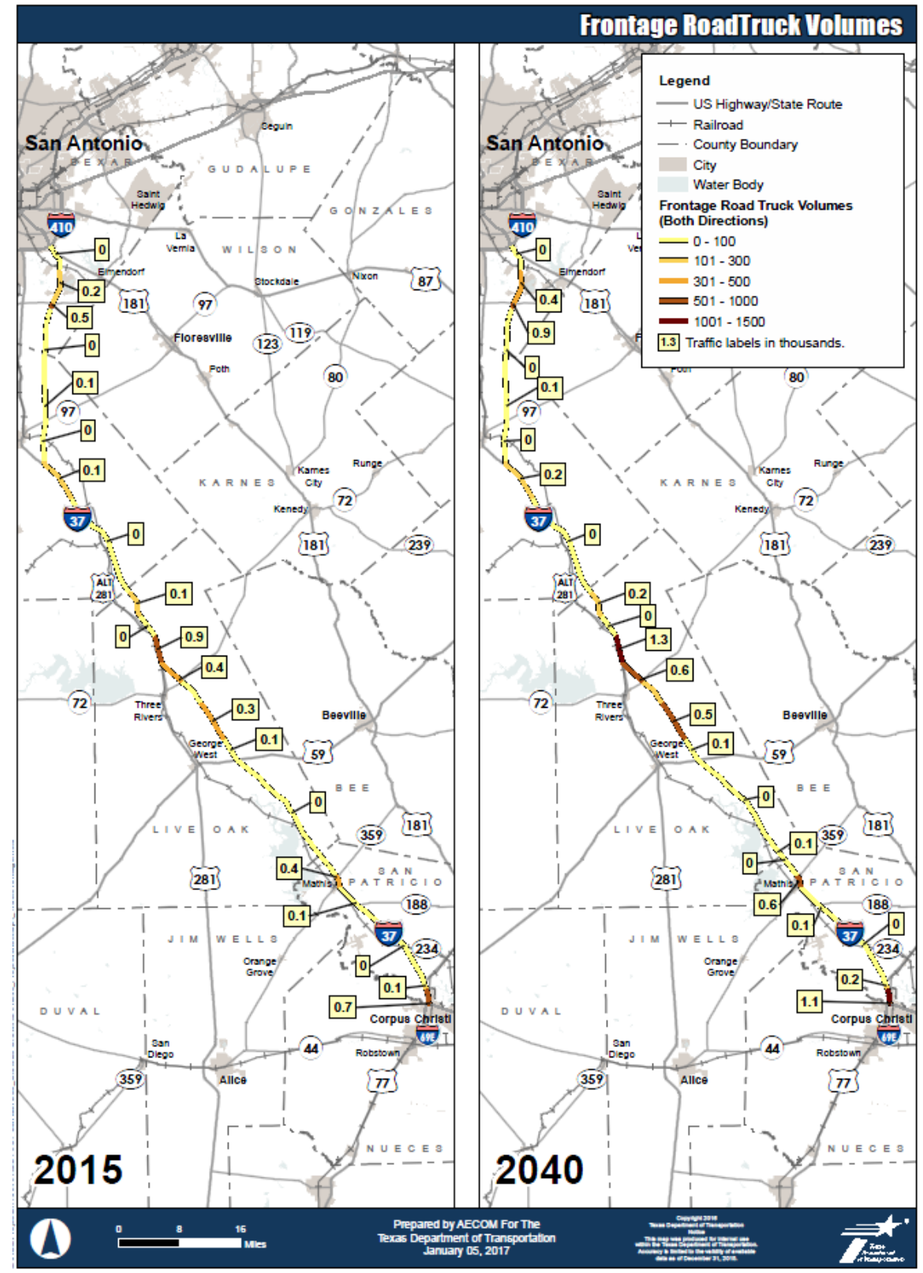


Figure 8: 2015 and 2040 Frontage Road Truck Volumes

Note, again, that these projections are estimates. Due to the nature of frontage roads and the fact that they are not continuous throughout the corridor, assumptions were made regarding traffic volumes when matching the RHiNo data to the appropriate model network links. For example, RHiNo frontage roads connecting to a highway turn-around may only run the length of half of a model network link. Since the model network links did not exactly match the RHiNo frontage road segments, professional judgement was used to match the appropriate RHiNo frontage road data to model network links.

APPENDIX F

NEEDS ANALYSIS

MAINLANES PAVEMENT INVESTMENT HISTORY

		Category 1				Category 2				Category 3				Category 4			
Segment	Segment Length	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment
1	3	0	0.6	0.6	20.0%	0.1	0.1	0.15	5.0%	0.1	5.4	5.45	181.7%	0	0	0	0.0%
2	14	0	16.6	16.6	118.6%	17.5	13.6	22.35	159.6%	14	19.7	26.7	190.7%	0	0	0	0.0%
3	3	0	10.3	10.3	343.3%	5.9	0	2.95	98.3%	3	3	4.5	150.0%	0	0	0	0.0%
4	14	11.8	26	31.9	227.9%	11.2	0	5.6	40.0%	20.6	14	24.3	173.6%	0	0	0	0.0%
5	9	9	17.9	22.4	248.9%	0	0	0	0.0%	17.5	9	17.75	197.2%	0	0.5	0.5	5.6%
6	16	11.8	28.2	34.1	213.1%	0	0	0	0.0%	16.4	16.2	24.4	152.5%	0	16	16	100.0%
7	11	0	3.7	3.7	33.6%	0	0	0	0.0%	0.1	21.8	21.85	198.6%	0	0.1	0.1	0.9%
8	7	0	0	0	0.0%	0	0	0	0.0%	0	7	7	100.0%	0	0	0	0.0%
9	7	0	0	0	0.0%	0	0	0	0.0%	0	10.1	10.1	144.3%	0	0	0	0.0%
10	5	0	0	0	0.0%	0	0	0	0.0%	0	9	9	180.0%	0	0	0	0.0%
11	7	0	0	0	0.0%	6	6	9	128.6%	0	7	7	100.0%	0	0	0	0.0%
12	8	0	0	0	0.0%	8	8	12	150.0%	0	1.5	1.5	18.8%	0	6.5	6.5	81.3%
13	7	0	0	0	0.0%	7	0.7	4.2	60.0%	0	6.3	6.3	90.0%	0	0.7	0.7	10.0%
14	9	0	0	0	0.0%	6	0	3	33.3%	0	12.4	12.4	137.8%	0	0	0	0.0%

		Cat 1		Cat 2		Cat 3		Cat 4		
Segment	Segment Length	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	**Weighted Score**
1	3	20.0%	1	5.0%	3	181.7%	4	0.0%	6	7.6
2	14	118.6%	1	159.6%	3	190.7%	4	0.0%	6	13.6
3	3	343.3%	1	98.3%	3	150.0%	4	0.0%	6	12.4
4	14	227.9%	1	40.0%	3	173.6%	4	0.0%	6	10.4
5	9	248.9%	1	0.0%	3	197.2%	4	5.6%	6	10.7
6	16	213.1%	1	0.0%	3	152.5%	4	100.0%	6	14.2
7	11	33.6%	1	0.0%	3	198.6%	4	0.9%	6	8.3
8	7	0.0%	1	0.0%	3	100.0%	4	0.0%	6	4.0
9	7	0.0%	1	0.0%	3	144.3%	4	0.0%	6	5.8
10	5	0.0%	1	0.0%	3	180.0%	4	0.0%	6	7.2
11	7	0.0%	1	128.6%	3	100.0%	4	0.0%	6	7.9
12	8	0.0%	1	150.0%	3	18.8%	4	81.3%	6	10.1
13	7	0.0%	1	60.0%	3	90.0%	4	10.0%	6	6.0
14	9	0.0%	1	33.3%	3	137.8%	4	0.0%	6	6.5

FRONTAGE ROAD PAVEMENT INVESTMENT HISTORY

		Category 1				Category 2				Category 3				Category 4			
Segment	Segment Length	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment	Total of uni-directional paving miles	Total of bi-directional paving miles	Total length	% of segment
1	3	0	8.4	8.4	280.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
2	14	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	13.4	13.4	95.7%
3	3	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	3	3	100.0%
4	14	6.1	0	3.05	21.8%	0	0	0	0.0%	0	0	0	0.0%	1.6	3.2	4	28.6%
5	9	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	7.5	0	3.75	41.7%
6	16	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
7	11	0	3.6	3.6	32.7%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
8	7	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
9	7	0	0	0	0.0%	0	0	0	0.0%	3	0	1.5	21.4%	0	0	0	0.0%
10	5	0	0	0	0.0%	0	0	0	0.0%	4	0	2	40.0%	0	0	0	0.0%
11	7	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
12	8	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
13	7	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%
14	9	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%	0	0	0	0.0%

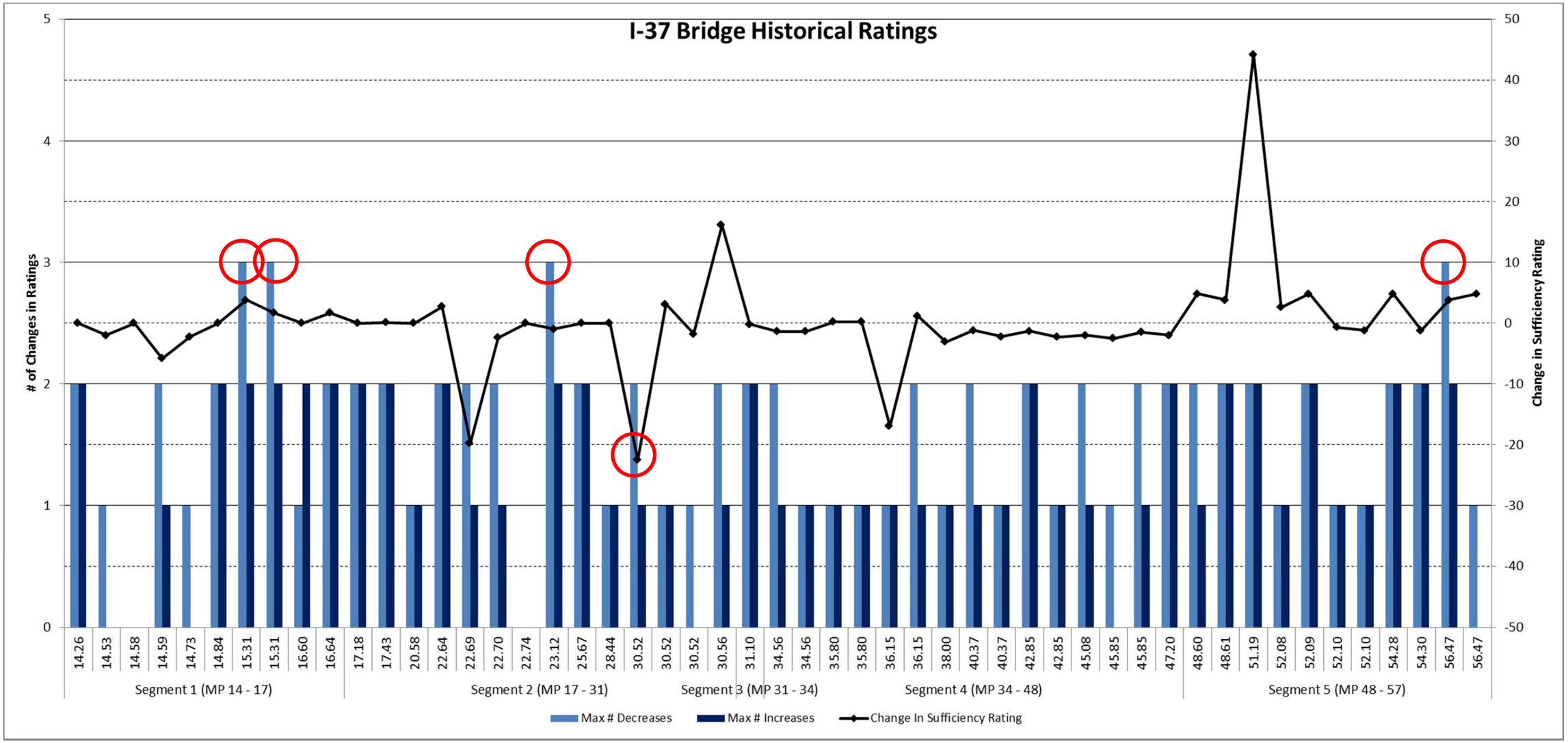
		Cat 1		Cat 2		Cat 3		Cat 4		
Segment	Segment Length	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	% of Segment	Relative Cost Value	**Weighted Score**
1	3	280.0%	1	0.0%	3	0.0%	4	0.0%	6	2.8
2	14	0.0%	1	0.0%	3	0.0%	4	95.7%	6	5.7
3	3	0.0%	1	0.0%	3	0.0%	4	100.0%	6	6.0
4	14	21.8%	1	0.0%	3	0.0%	4	28.6%	6	1.9
5	9	0.0%	1	0.0%	3	0.0%	4	41.7%	6	2.5
6	16	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0
7	11	32.7%	1	0.0%	3	0.0%	4	0.0%	6	0.3
8	7	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0
9	7	0.0%	1	0.0%	3	21.4%	4	0.0%	6	0.9
10	5	0.0%	1	0.0%	3	40.0%	4	0.0%	6	1.6
11	7	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0
12	8	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0
13	7	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0
14	9	0.0%	1	0.0%	3	0.0%	4	0.0%	6	0.0

PAVEMENT INVESTMENT SUMMARY

Segment	Segment Length	Mainline Score	Frt Rd Score	Mainline Z-Score	Mainline Level of Historical Investment	Frt Rd Z-Score	Frontage Road Level of Historical Investment
1	3	7.6	2.8	-0.42	Medium	0.60	High
2	14	13.6	5.7	1.52	High	2.01	High
3	3	12.4	6.0	1.13	High	2.13	High
4	14	10.4	1.9	0.49	Medium	0.18	Medium
5	9	10.7	2.5	0.58	High	0.45	Medium
6	16	14.2	0.0	1.72	High	-0.75	Low
7	11	8.3	0.3	-0.19	Medium	-0.59	Low
8	7	4.0	0.0	-1.59	Low	-0.75	Low
9	7	5.8	0.9	-1.02	Low	-0.33	Medium
10	5	7.2	1.6	-0.56	Low	0.02	Medium
11	7	7.9	0.0	-0.34	Medium	-0.75	Low
12	8	10.1	0.0	0.39	Medium	-0.75	Low
13	7	6.0	0.0	-0.94	Low	-0.75	Low
14	9	6.5	0.0	-0.78	Low	-0.75	Low

Threshold from avg. to above avg.	0.50	> 10.45	0.50	> 2.60
Threshold from avg. to below avg.	-0.50	< 7.37	-0.50	< 0.52

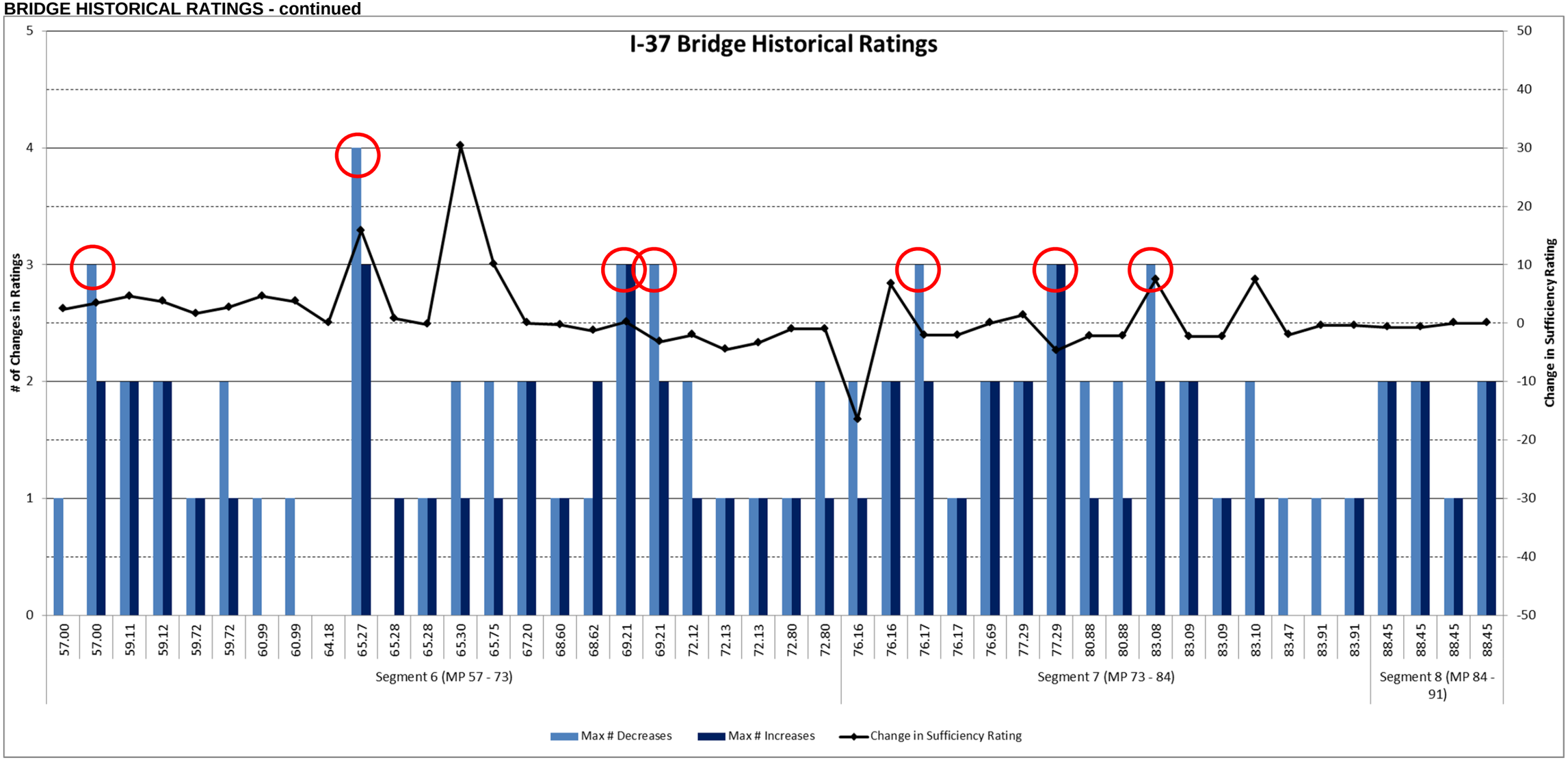
BRIDGE HISTORICAL RATINGS



O Identifies the bridge indicated is of concern from a historical ratings perspective

- Maximum # Decreases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating decreased from 1994 to 2014. (Higher number could indicate a more dramatic decline in the performance of the bridge.)
- Maximum # Increases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating increased from 1994 to 2014. (Higher number could indicate a higher level of investment.)
- Change in Sufficiency Rating: Cumulative change in Sufficiency Rating from 1994 to 2014. (Bigger negative number could indicate a more dramatic decline in the performance of the bridge.)

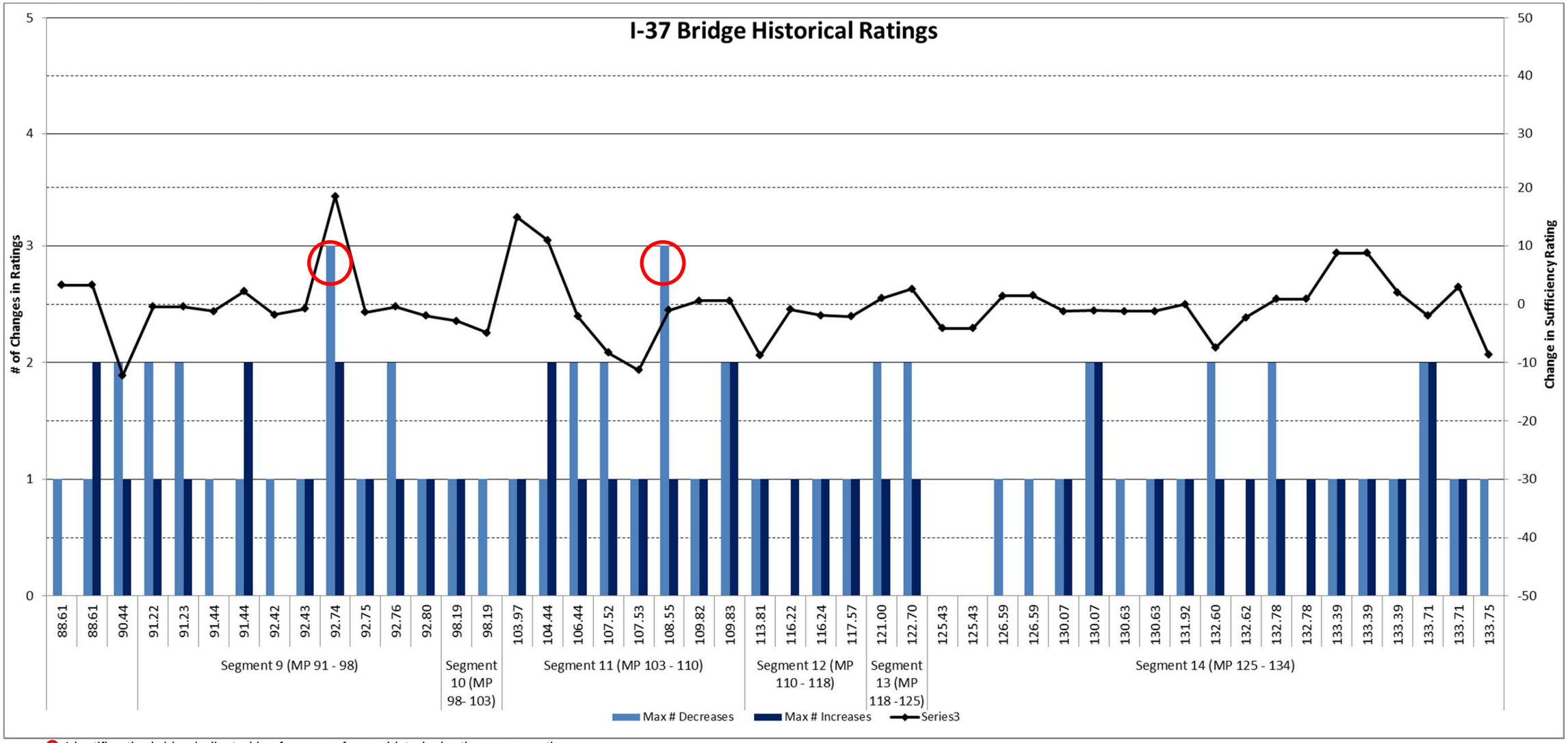
BRIDGE HISTORICAL RATINGS - continued



O Identifies the bridge indicated is of concern from a historical ratings perspective

- Maximum # Decreases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating decreased from 1994 to 2014. (Higher number could indicate a more dramatic decline in the performance of the bridge.)
- Maximum # Increases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating increased from 1994 to 2014. (Higher number could indicate a higher level of investment.)
- Change in Sufficiency Rating: Cumulative change in Sufficiency Rating from 1994 to 2014. (Bigger negative number could indicate a more dramatic decline in the performance of the bridge

BRIDGE HISTORICAL RATINGS - continued



Identifies the bridge indicated is of concern from a historical ratings perspective

- Maximum # Decreases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating decreased from 1994 to 2014. (Higher number could indicate a more dramatic decline in the performance of the bridge.)
- Maximum # Increases: Maximum number of times that the Deck Rating, Substructure Rating, or Superstructure Rating increased from 1994 to 2014. (Higher number could indicate a higher level of investment.)
- Change in Sufficiency Rating: Cumulative change in Sufficiency Rating from 1994 to 2014. (Bigger negative number could indicate a more dramatic decline in the performance of the bridge.)

TRAFFIC AND LANE DIAGRAMS

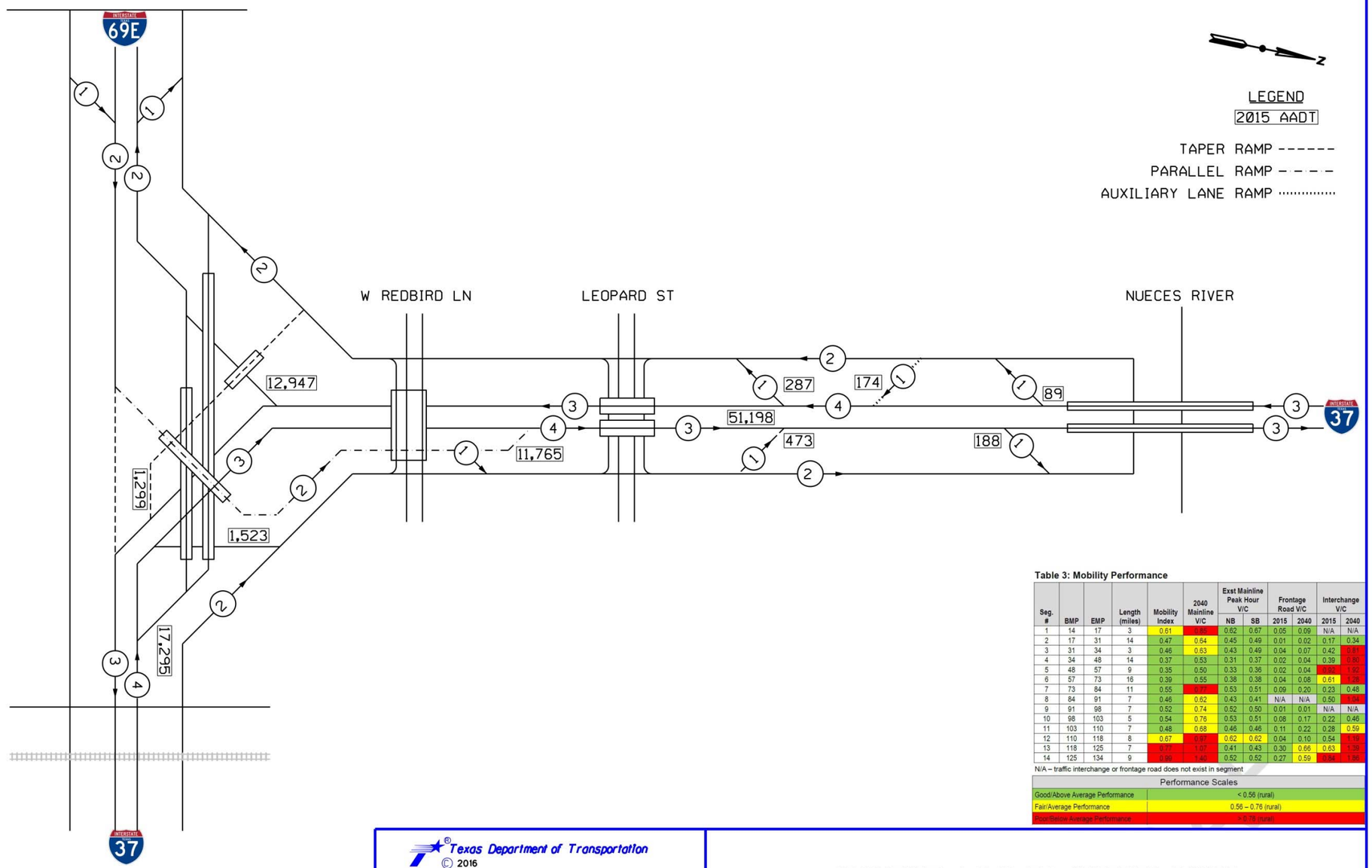


Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.85	0.62	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.92	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.13
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.63	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.84	1.86

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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SEGMENT 1: I-69 TO NUECES RIVER

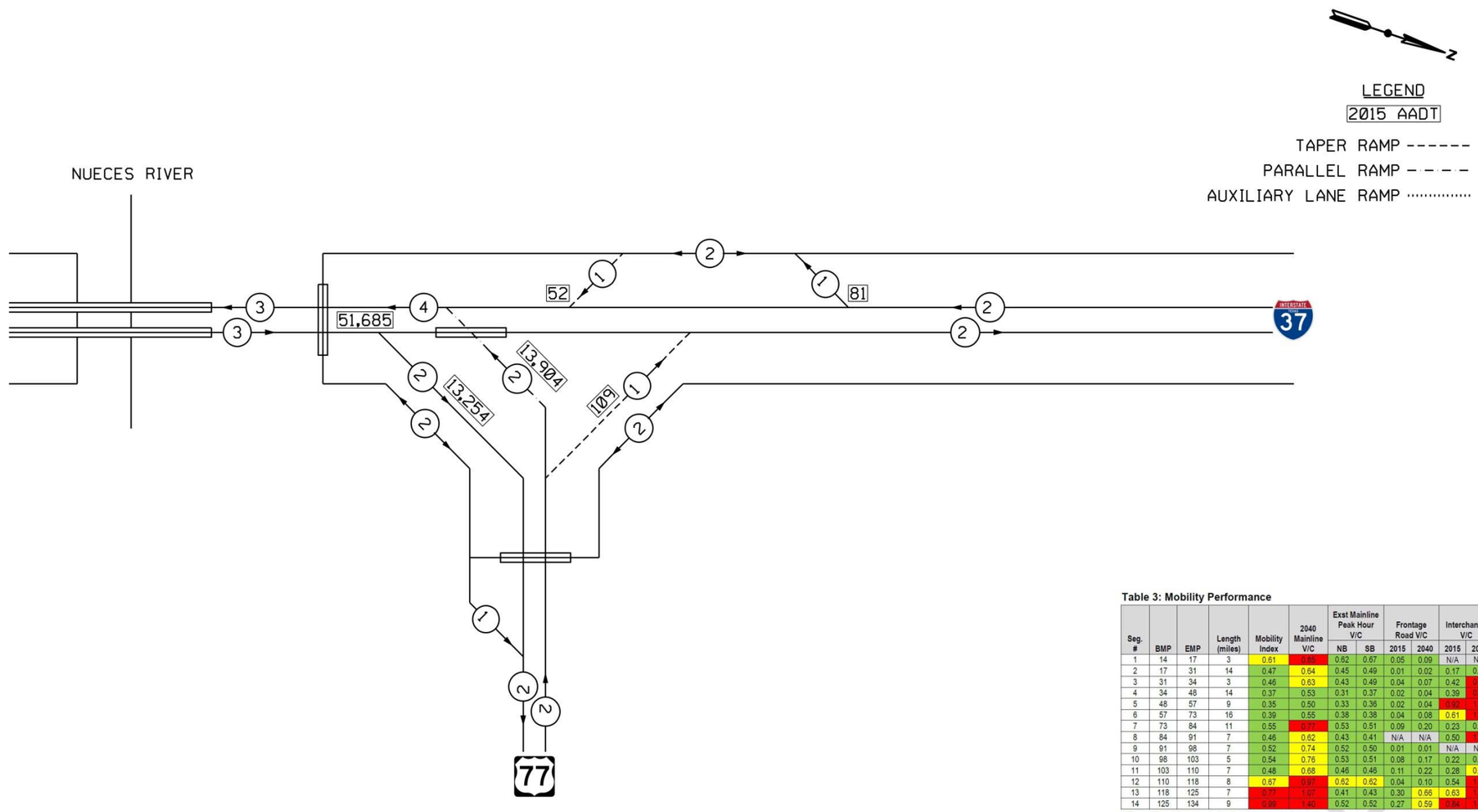

Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.85	0.62	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.92	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.19
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.63	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.84	1.85

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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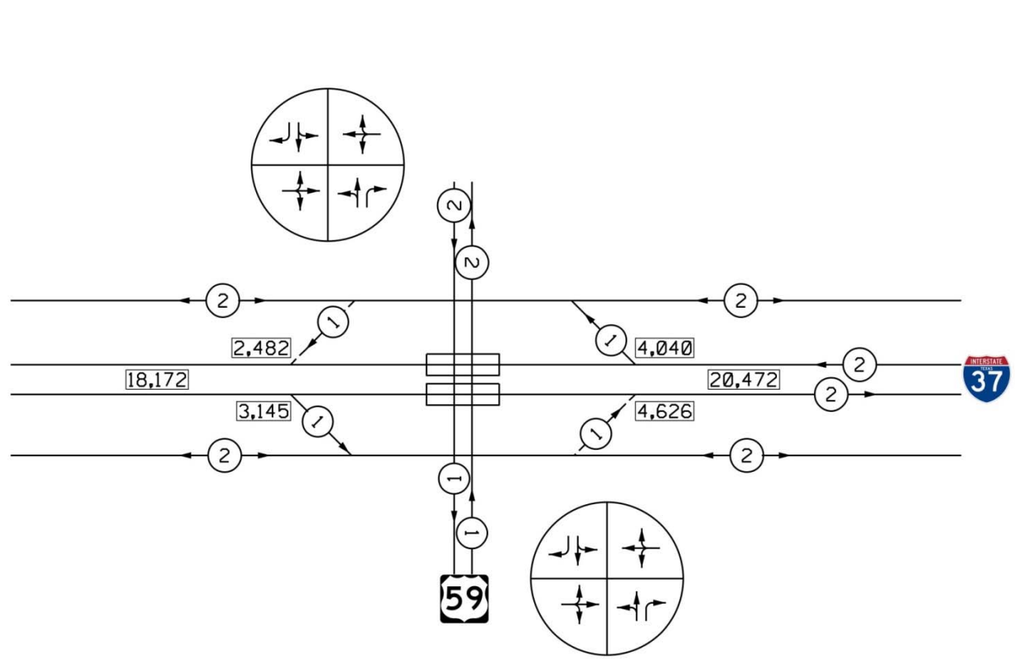
SEGMENT 2: NUECES RIVER TO US 77



LEGEND

2015 AADT

TAPER RAMP ------

PARALLEL RAMP - - - -

AUXILIARY LANE RAMP .....

Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.82	0.52	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.92	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.19
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.63	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.84	1.86

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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SEGMENT 5: US 59 INTERCHANGE

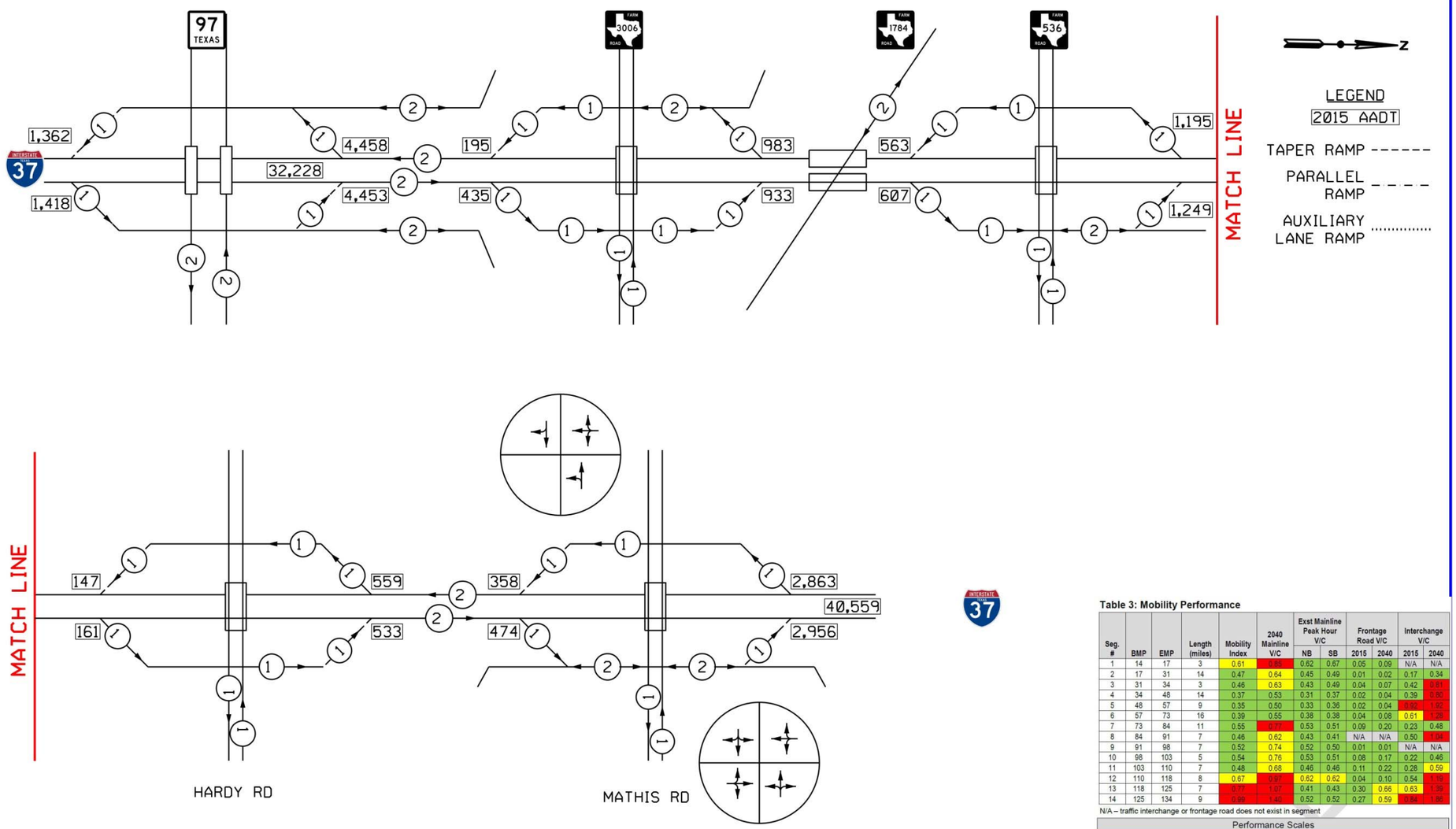

Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.89	0.62	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.92	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.19
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.63	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.84	1.86

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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SEGMENTS 12, 13: SH 97 TO MATHIS ROAD

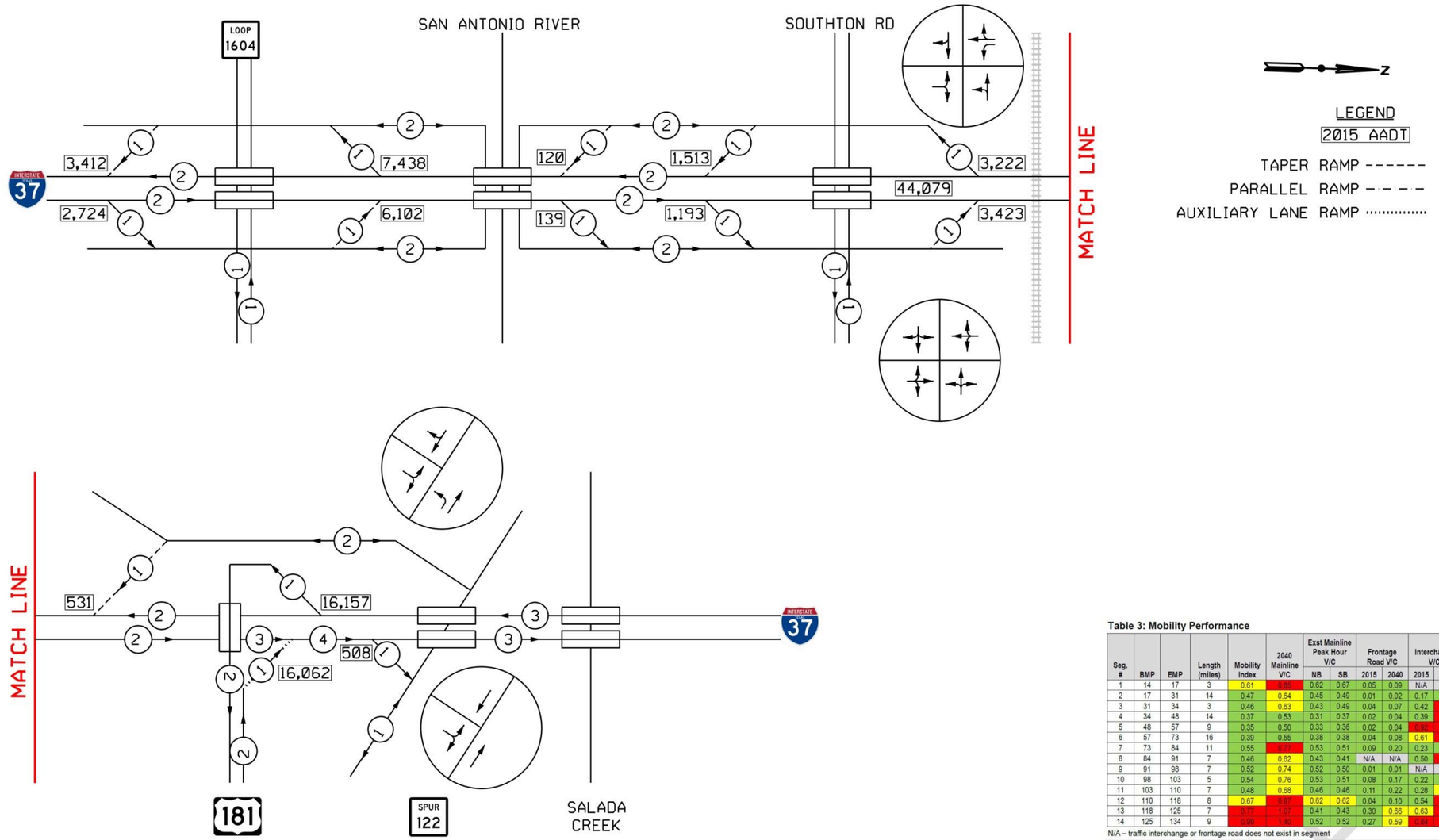

Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.89	0.62	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.95	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.19
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.63	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.84	1.86

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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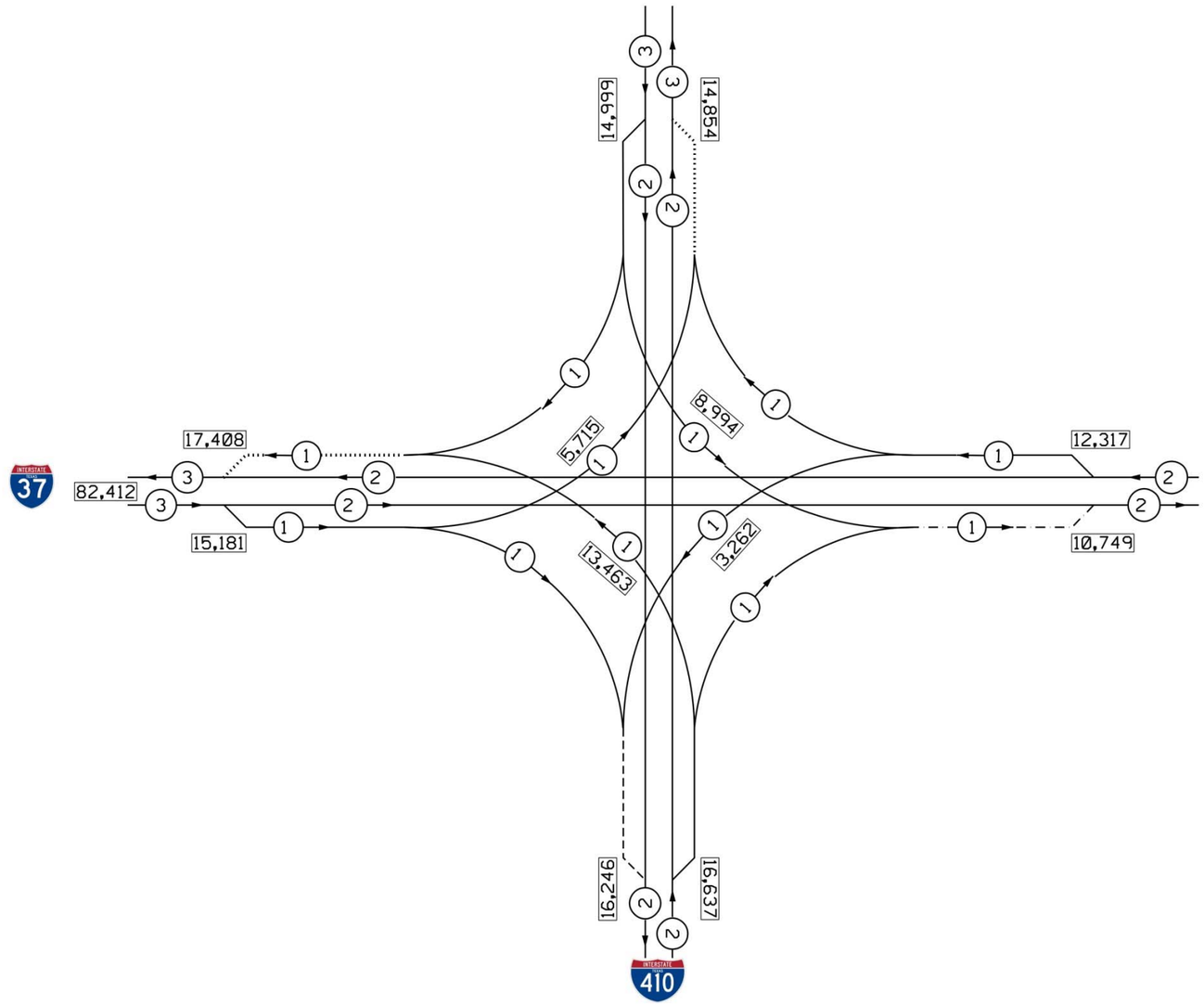
SEGMENT 14: SH 1604 TO SPUR 122



LEGEND

2015 AADT

TAPER RAMP ------

PARALLEL RAMP - - - -

AUXILIARY LANE RAMP .....

Table 3: Mobility Performance

Seg. #	BMP	EMP	Length (miles)	Mobility Index	2040 Mainline V/C	Exst Mainline Peak Hour V/C		Frontage Road V/C		Interchange V/C	
						NB	SB	2015	2040	2015	2040
1	14	17	3	0.61	0.85	0.62	0.67	0.05	0.09	N/A	N/A
2	17	31	14	0.47	0.64	0.45	0.49	0.01	0.02	0.17	0.34
3	31	34	3	0.46	0.63	0.43	0.49	0.04	0.07	0.42	0.81
4	34	48	14	0.37	0.53	0.31	0.37	0.02	0.04	0.39	0.80
5	48	57	9	0.35	0.50	0.33	0.36	0.02	0.04	0.92	1.92
6	57	73	16	0.39	0.55	0.38	0.38	0.04	0.08	0.61	1.28
7	73	84	11	0.55	0.77	0.53	0.51	0.09	0.20	0.23	0.48
8	84	91	7	0.46	0.62	0.43	0.41	N/A	N/A	0.50	1.04
9	91	98	7	0.52	0.74	0.52	0.50	0.01	0.01	N/A	N/A
10	98	103	5	0.54	0.76	0.53	0.51	0.08	0.17	0.22	0.46
11	103	110	7	0.48	0.68	0.46	0.46	0.11	0.22	0.28	0.59
12	110	118	8	0.67	0.97	0.62	0.62	0.04	0.10	0.54	1.13
13	118	125	7	0.77	1.07	0.41	0.43	0.30	0.66	0.83	1.39
14	125	134	9	0.99	1.40	0.52	0.52	0.27	0.59	0.94	1.86

N/A – traffic interchange or frontage road does not exist in segment

Performance Scales	
Good/Above Average Performance	< 0.56 (rural)
Fair/Average Performance	0.56 – 0.76 (rural)
Poor/Below Average Performance	> 0.76 (rural)

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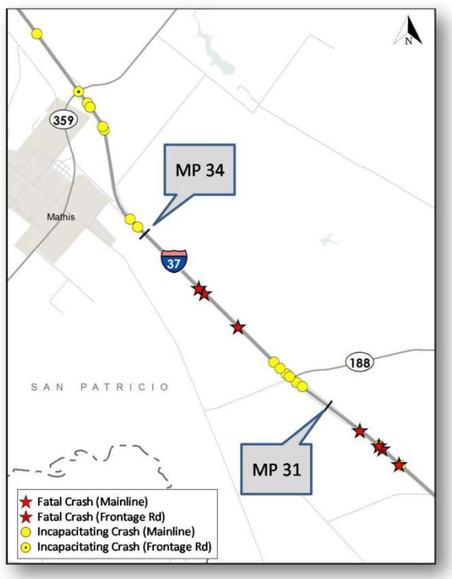
SEGMENT 14: I-410 INTERCHANGE

Segment 3 – SH 188 to SH 359

Length = 3 miles

Lanes = 4

2015 ADT = 25,100



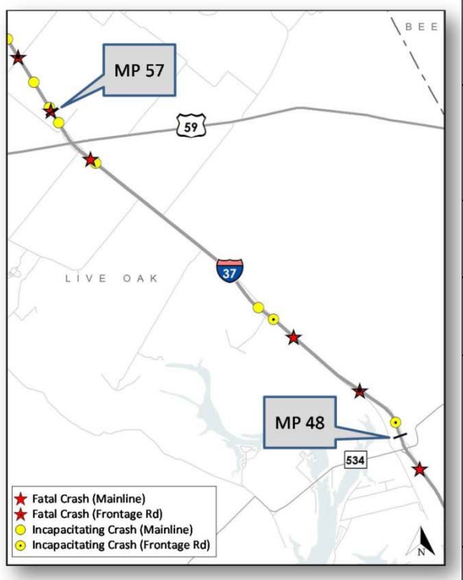
Segments	SEGMENT 3		
	Mainline		Frontage Road
Performance	Poor		Poor
Need	High		High
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	66 total crashes	9 K&A crashes	7 total crashes
	3 crashes were fatal (5%)	3 crashes were fatal	0 crashes were fatal
	6 crashes involve incapacitating injuries (9%)	6 crashes involve incapacitating injuries	0 crashes involve incapacitating injuries
	0 crashes involve trucks	0 crashes involve trucks	0 crashes involve trucks
	2 crashes involve motorcycle	2 crashes involve motorcycle	0 crashes involve motorcycle
Crash Severity	59% involve not-injured	67% involve incapacitating injury	71% involve not-injured
	15% involve non-incapacitating injury	33% involve fatality	14% involve possible injury
	12% involve possible injury		14% involve unknown
Contributing Factors	55% involve driver improper action	56% involve driver improper action	86% involve driver improper action
	12% involve driver physical condition	33% involve under influence	14% involve inattention/distraction
	11% involve speeding	22% involve speeding	14% involve speeding
	11% involve under influence		
Light Condition	55% occur in daylight condition	56% occur in dark, unlighted condition	86% occur in daylight condition
	44% occur in dark, unlighted condition	33% occur in daylight condition	14% occur in dark, unlighted condition
	2% occur in dusk condition	11% occur in dusk condition	
First Harmful Event Type	41% involve collision with other motor vehicle	44% involve collision with other motor vehicle	57% involve collision with other motor vehicle
	21% involve overturning	33% involve overturning	29% involve collision with fixed object
	15% involve collision with fixed object	22% involve collision with fixed object	14% involve overturning
Weather Condition	77% occur in clear condition	89% occur in clear condition	100% occur in clear condition
	15% occur in cloudy condition	11% occur in cloudy condition	
	8% occur in rain condition		
Surface Condition	89% occur in dry condition	100% occur in dry condition	100% occur in dry condition
	9% occur in wet condition		
	2% occur in standing water condition		
Manner of Collision	58% involve one motor vehicle - going straight	56% involve one motor vehicle - going straight	43% involve angle - both going straight
	17% involve same direction - both going straight, rear end	22% involve same direction - both going straight, rear end	29% involve one motor vehicle - going straight
	17% involve same direction - both going straight, sideswipe	11% involve opposite direction - both going straight	14% involve one motor vehicle - turning right
		11% involve same direction - one straight, one stopped	14% involve same direction - both going straight, rear end
Vehicle Direction of Travel	52% involve vehicle traveling southbound	56% involve vehicle traveling northbound	71% involve vehicle traveling northbound
	48% involve vehicle traveling northbound	44% involve vehicle traveling southbound	29% involve vehicle traveling southbound

Segment 5 – CR 354 to US 59

Length = 9 miles

Lanes = 4

2015 ADT = 18,200



Segments	SEGMENT 5		
	Mainline		Frontage Road
Performance	Fair		Poor
Need	Medium		High
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	165 total crashes	5 K&A crashes	25 total crashes
	2 crashes were fatal (1%)	2 crashes were fatal	1 crashes were fatal (4%)
	3 crashes involve incapacitating injuries (2%)	3 crashes involve incapacitating injuries	2 crashes involve incapacitating injuries (8%)
	15 crashes involve trucks	1 crashes involve trucks	3 crashes involve trucks
	1 crashes involve motorcycle	0 crashes involve motorcycle	2 crashes involve motorcycle
Crash Severity	69% involve not-injured	60% involve incapacitating injury	64% involve not-injured
	14% involve non-incapacitating injury	40% involve fatality	12% involve non-incapacitating injury
	13% involve possible injury		12% involve possible injury
Contributing Factors	52% involve driver improper action	80% involve driver improper action	68% involve driver improper action
	22% involve driver physical condition	60% involve driver physical condition	32% involve inattention/distraction
	17% involve speeding	40% involve under influence	24% involve speeding
Light Condition	60% occur in daylight condition	60% occur in daylight condition	52% occur in daylight condition
	36% occur in dark, unlighted condition	40% occur in dark, unlighted condition	28% occur in dark, unlighted condition
			12% occur in dawn condition
First Harmful Event Type	42% involve collision with fixed object	80% involve collision with fixed object	56% involve collision with other motor vehicle
	26% involve collision with other motor vehicle	20% involve overturning	20% involve collision with fixed object
	18% involve overturning		12% involve overturning
Weather Condition	63% occur in clear condition	80% occur in clear condition	52% occur in clear condition
	18% occur in rain condition	20% occur in cloudy condition	32% occur in cloudy condition
	15% occur in cloudy condition		8% occur in rain condition
Surface Condition	78% occur in dry condition	80% occur in dry condition	80% occur in dry condition
	17% occur in wet condition	20% occur in wet condition	12% occur in wet condition
	4% occur in standing water condition		4% occur in ice condition
			4% occur in standing water condition
Manner of Collision	73% involve one motor vehicle - going straight	100% involve one motor vehicle - going straight	44% involve one motor vehicle - going straight
	15% involve same direction - both going straight, rear end		20% involve same direction - one straight, one stopped
	7% involve same direction - both going straight, sideswipe		16% involve angle - both going straight
Vehicle Direction of Travel	59% involve vehicle traveling northbound	100% involve vehicle traveling northbound	68% involve vehicle traveling northbound
	41% involve vehicle traveling southbound		32% involve vehicle traveling southbound

Segment 6 – US 59 to US 281

Length = 16 miles

Lanes = 4

2015 ADT = 20,400

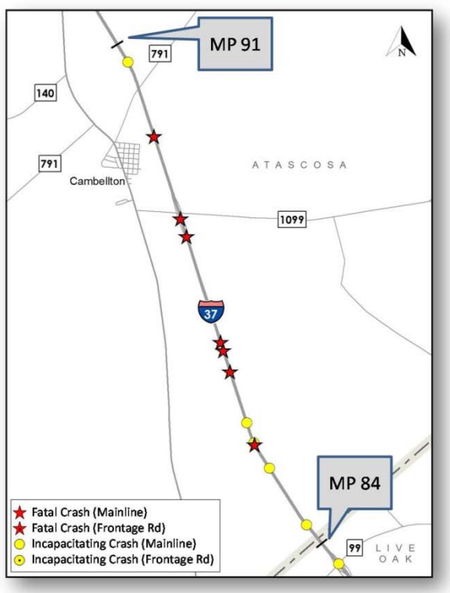
Segments	SEGMENT 6		
	Mainline		Frontage Road
Performance	Fair		Fair
Need	Low		Medium
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	202 total crashes	19 K&A crashes	31 total crashes
	6 crashes were fatal (3%)	6 crashes were fatal (32%)	2 crashes were fatal (6%)
	13 crashes involve incapacitating injuries (6%)	13 crashes involve incapacitating injuries (68%)	0 crashes involve incapacitating injuries
	38 crashes involve trucks	3 crashes involve trucks	5 crashes involve trucks
	4 crashes involve motorcycle	1 crashes involve motorcycle	0 crashes involve motorcycle
Crash Severity	56% involve not-injured	68% involve incapacitating injury	65% involve not-injured
	20% involve non-incapacitating	32% involve fatality	19% involve non-incapacitating
	14% involve possible injury		10% involve possible injury
Contributing Factors	49% involve driver improper action	58% involve driver improper action	74% involve driver improper action
	20% involve driver physical condition	26% involve driver physical condition	13% involve inattention/distraction
	12% involve inattention/distraction	16% involve inattention/distraction	13% involve speeding
		16% involve under influence	
Light Condition	57% occur in daylight condition	53% occur in dark, unlighted condition	84% occur in daylight condition
	36% occur in dark, unlighted condition	42% occur in daylight condition	13% occur in dark, unlighted condition
	2% occur in dark, lighted condition	5% occur in dark, lighted condition	3% occur in dawn condition
	2% occur in dawn condition		
First Harmful Event Type	28% involve collision with other motor vehicle	37% involve collision with fixed object	65% involve collision with other motor vehicle
	27% involve collision with fixed object	26% involve collision with other motor vehicle	16% involve overturning
	27% involve overturning	26% involve overturning	10% involve collision with fixed object
Weather Condition	65% occur in clear condition	58% occur in clear condition	68% occur in clear condition
	21% occur in cloudy condition	37% occur in cloudy condition	32% occur in cloudy condition
	11% occur in rain condition	5% occur in rain condition	
Surface Condition	81% occur in dry condition	79% occur in dry condition	100% occur in dry condition
	13% occur in wet condition	11% occur in wet condition	
	3% occur in standing water condition	11% occur in standing water condition	
Manner of Collision	72% involve one motor vehicle - going straight	74% involve one motor vehicle - going straight	39% involve angle - both going straight
	14% involve same direction - both going straight, rear end	11% involve opposite direction - both going straight	32% involve one motor vehicle - going striaght
	10% involve same direction - both going straight, sideswipe	5% involve angle - one straight, one stopped	6% involve opposite direction - one straight, one left turn
		5% involve same direction - both going straight, sideswipe	6% involve same direction - one straight, one stopped
		5% involve same direction - one straight, one stopped	
Vehicle Direction of Travel	51% involve vehicle traveling northbound	53% involve vehicle traveling northbound	55% involve vehicle traveling northbound
	49% involve vehicle traveling southbound	47% involve vehicle traveling southbound	45% involve vehicle traveling southbound

Segment 8 – CR 99 to US 281 ALT

Length = 7 miles

Lanes = 4

2015 ADT = 22,700



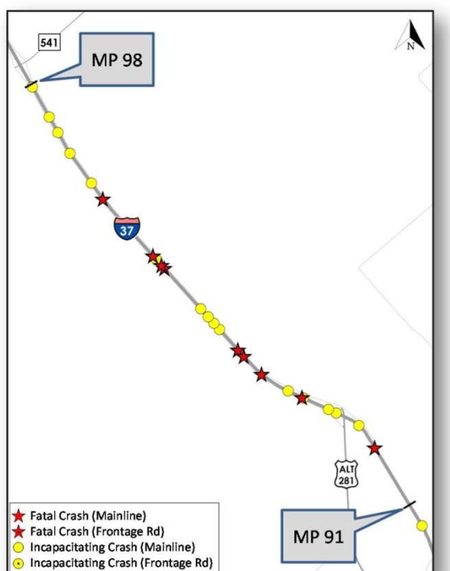
Segments	SEGMENT 8		
	Mainline		Frontage Road
Performance	Fair		N/A
Need	Low		N/A
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	126 total crashes	12 K&A crashes	2 total crashes
	7 crashes were fatal (6%)	7 crashes were fatal (58%)	0 crashes were fatal
	5 crashes involve incapacitating injuries (4%)	5 crashes involve incapacitating injuries (42%)	0 crashes involve incapacitating injuries
	22 crashes involve trucks	2 crashes involve trucks	0 crashes involve trucks
	1 crashes involve motorcycle	1 crashes involve motorcycle	0 crashes involve motorcycle
Crash Severity	64% involve not-injured	58% involve fatality	50% involve not-injured
	17% involve possible injury	42% involve incapacitating injury	50% involve possible injury
	10% involve non-incapacitating		
Contributing Factors	52% involve driver improper action	58% involve driver physical condition	100% involve driver improper action
	23% involve driver physical condition	50% involve driver improper action	50% involve under influence
	15% involve inattention/distraction	25% involve under influence	
Light Condition	60% occur in daylight condition	58% occur in daylight condition	50% occur in daylight condition
	33% occur in dark, unlighted condition	42% occur in dark, unlighted condition	50% occur in dark, unlighted condition
	3% occur in dawn condition		
First Harmful Event Type	35% involve collision with fixed object	67% involve overturning	100% involve collision with other motor vehicle
	29% involve overturning	25% involve collision with fixed object	
	24% involve collision with other motor vehicle	8% involve collision with other motor vehicle	
Weather Condition	75% occur in clear condition	83% occur in clear condition	100% occur in clear condition
	17% occur in cloudy condition	17% occur in cloudy condition	
	7% occur in rain condition		
Surface Condition	90% occur in dry condition	100% occur in dry condition	100% occur in dry condition
	8% occur in wet condition		
	2% occur in standing water condition		
Manner of Collision	76% involve one motor vehicle - going striaght	92% involve one motor vehicle - going striaght	100% involve angle - both going straight
	11% involve same direction - both going straight, rear end	8% involve same direction - both going straight, rear end	
	7% involve same direction - both going straight, sideswipe		
Vehicle Direction of Travel	50% involve vehicle traveling northbound	58% involve vehicle traveling southbound	50% involve vehicle traveling northbound
	50% involve vehicle traveling southbound	42% involve vehicle traveling northbound	50% involve vehicle traveling southbound

Segment 9 – US 281 ALT to FM 541

Length = 7 miles

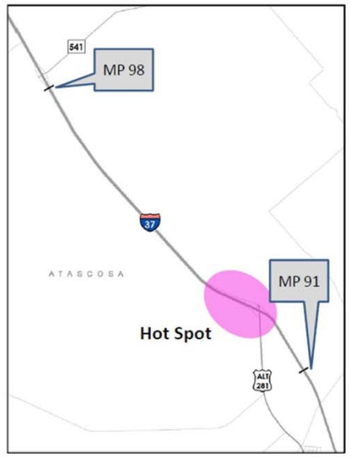
Lanes = 4

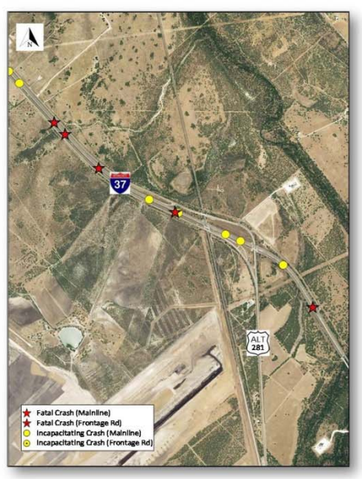
2015 ADT = 26,900



Segments	SEGMENT 9		
	Mainline		Frontage Road
Performance	Poor		Good
Need	High		None
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	208 total crashes	24 K&A crashes	3 total crashes
	9 crashes were fatal (4%)	9 crashes were fatal (38%)	0 crashes were fatal
	15 crashes involve incapacitating injuries (7%)	15 crashes involve incapacitating injuries (63%)	0 crashes involve incapacitating injuries
	28 crashes involve trucks	2 crashes involve trucks	2 crashes involve trucks
	4 crashes involve motorcycle	2 crashes involve motorcycle	0 crashes involve motorcycle
Crash Severity	60% involve not-injured	63% involve incapacitating injury	67% involve not-injured
	19% involve possible injury	38% involve fatality	33% involve possible injury
	9% involve non-incapacitating injury		
Contributing Factors	50% involve driver improper action	75% involve driver improper action	33% involve driver improper action
	19% involve driver physical condition	17% involve inattention/distraction	33% involve driver physical condition
	15% involve inattention/distraction	17% involve driver physical condition	33% involve speeding
Light Condition	60% occur in daylight condition	54% occur in daylight condition	67% occur in daylight condition
	38% occur in dark, unlighted condition	42% occur in dark, unlighted condition	33% occur in dark, unlighted condition
	1% occur in dark, lighted condition	4% occur in dark, lighted condition	
	1% occur in dusk condition		
First Harmful Event Type	38% involve overturning	50% involve overturning	67% involve collision with fixed object
	33% involve collision with fixed object	29% involve collision with fixed object	33% involve overturning
	18% involve collision with other motor vehicle	13% involve collision with other motor vehicle	
Weather Condition	75% occur in clear condition	79% occur in clear condition	67% occur in clear condition
	13% occur in cloudy condition	13% occur in cloudy condition	33% occur in cloudy condition
	10% occur in rain condition	4% occur in fog condition	
		4% occur in rain condition	
Surface Condition	87% occur in dry condition	88% occur in dry condition	100% occur in dry condition
	12% occur in wet condition	13% occur in wet condition	
	1% occur in ice condition		
Manner of Collision	82% involve one motor vehicle - going straight	88% involve one motor vehicle - going straight	100% involve one motor vehicle - going straight
	11% involve same direction - both going straight, sideswipe	4% involve same direction - both going straight, rear end	
	6% involve same direction - both going straight, rear end	4% involve same direction - both going straight, sideswipe	
		4% involve same direction - one straight, one stopped	
Vehicle Direction of Travel	57% involve vehicle traveling northbound	63% involve vehicle traveling northbound	67% involve vehicle traveling northbound
	43% involve vehicle traveling southbound	38% involve vehicle traveling southbound	33% involve vehicle traveling southbound

Segment 9 – Hot Spot Location





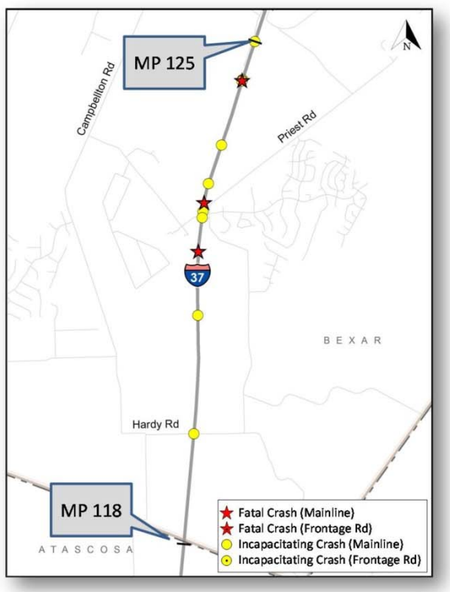
Segments	SEGMENT 9	
	Freeway Hot Spot Location	
Performance	Poor	
Need	High	
	All Crashes	K & A Crashes
Segment Crash Overview	96 total crashes	15 K&A crashes
	7 crashes were fatal (7%)	7 crashes were fatal
	8 crashes involve incapacitating injuries (8%)	8 crashes involve incapacitating injuries
	16 crashes involve trucks	2 crashes involve trucks
	3 crashes involve motorcycle	1 crashes involve motorcycle
Crash Severity	57% involve not-injured	53% involve incapacitating injury
	20% involve possible injury	47% involve fatality
	8% involve incapacitating injury	
Contributing Factors*	55% involve driver improper action	73% involve driver improper action
	15% involve inattention/distraction	20% involve inattention/distraction
	15% involve driver physical condition	13% involve driver physical condition
		13% involve under influence
Light Condition	58% occur in daylight condition	67% occur in daylight condition
	40% occur in dark, unlighted condition	27% occur in dark, unlighted condition
	2% occur in dark, lighted condition	7% occur in dark, lighted condition
First Harmful Event Type	38% involve overturning	47% involve overturning
	28% involve collision with fixed object	27% involve collision with fixed object
	23% involve collision with other motor vehicle	13% involve collision with other motor vehicle
Weather Condition	74% occur in clear condition	87% occur in clear condition
	14% occur in cloudy condition	13% occur in cloudy condition
	11% occur in rain condition	
Surface Condition	86% occur in dry condition	100% occur in dry condition
	14% occur in wet condition	
Manner of Collision	77% involve one motor vehicle - going straight	87% involve one motor vehicle - going straight
	16% involve same direction - both going straight, sideswipe	7% involve same direction - both going straight, rear end
	6% involve same direction - both going straight, rear end	7% involve same direction - both going straight, sideswipe
Vehicle Direction of Travel	52% involve vehicle traveling southbound	53% involve vehicle traveling northbound
	48% involve vehicle traveling northbound	47% involve vehicle traveling southbound

Segment 13 – CR 536 to SH 1604

Length = 7 miles

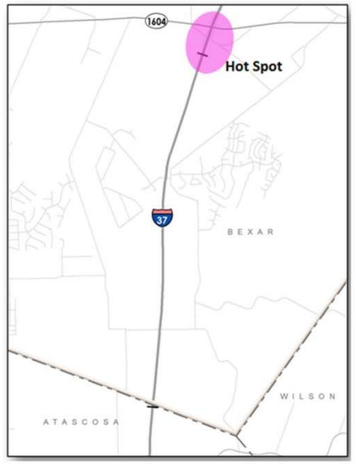
Lanes = 4

2015 ADT = 37,700



Segments	SEGMENT 13		
	Mainline		Frontage Road
Performance	Good		Good
Need	None		None
	All Crashes	K & A Crashes	All Crashes
Segment Crash Overview	112 total crashes	12 K&A crashes	No crash record was found
	3 crashes were fatal (3%)	3 crashes were fatal (25%)	
	9 crashes involve incapacitating injuries (8%)	9 crashes involve incapacitating injuries (75%)	
	13 crashes involve trucks	3 crashes involve trucks	
	0 crashes involve motorcycle	0 crashes involve motorcycle	
Crash Severity	54% involve not-injured	75% involve incapacitating injury	
	17% involve possible injury	25% involve fatality	
	12% involve non-incapacitating injury		
Contributing Factors	50% involve driver improper action	42% involve driver improper action	
	42% involve inattention/distraction	42% involve inattention/distraction	
	13% involve driver physical condition	17% involve driver physical condition	
		17% involve speeding	
		17% involve under influence	
Light Condition	46% occur in daylight condition	67% occur in dark, unlighted condition	
	45% occur in dark, unlighted condition	33% occur in daylight condition	
	4% occur in dark, lighted condition		
	4% occur in dawn condition		
First Harmful Event Type	35% involve collision with other motor vehicle	42% involve overturning	
	31% involve overturning	17% involve collision with fixed object	
	22% involve collision with fixed object	17% involve collision with other motor vehicle	
Weather Condition	71% occur in clear condition	75% occur in clear condition	
	19% occur in cloudy condition	17% occur in cloudy condition	
	5% occur in fog condition	8% occur in fog condition	
Surface Condition	88% occur in dry condition	100% occur in dry condition	
	12% occur in wet condition		
Manner of Collision	65% involve one motor vehicle - going straight	83% involve one motor vehicle - going straight	
	16% involve same direction - both going straight, rear end	8% involve same direction - both going straight, rear end	
	10% involve same direction - both going straight, sideswipe	8% involve same direction - one straight, one stopped	
Vehicle Direction of Travel	48% involve vehicle traveling southbound	58% involve vehicle traveling southbound	
	46% involve vehicle traveling northbound	42% involve vehicle traveling northbound	
	6% unknown		

Segment 13 – Hot Spot Location



Segments	SEGMENT 13	
	Mainline Hot Spot Location	
Performance	Poor	
Need	High	
	All Crashes	K & A Crashes
Segment Crash Overview	97 total crashes	8 K&A crashes
	2 crashes were fatal (2%)	2 crashes were fatal
	6 crashes involve incapacitating injuries (6%)	6 crashes involve incapacitating injuries
	12 crashes involve trucks	3 crashes involve trucks
	3 crashes involve motorcycle	1 crashes involve motorcycle
Crash Severity	64% involve not-injured	75% involve incapacitating injury
	15% involve possible injury	25% involve fatality
	7% involve non-incapacitating injury	
Contributing Factors*	55% involve driver improper action	88% involve driver improper action
	52% involve inattention/distraction	25% involve inattention/distraction
	12% involve driver physical condition	13% involve driver physical condition
		13% involve speeding
		13% involve under influence
Light Condition	54% occur in daylight condition	88% occur in dark, unlighted condition
	38% occur in dark, unlighted condition	13% occur in daylight condition
	5% occur in dark, lighted condition	
First Harmful Event Type	54% involve collision with other motor vehicle	38% involve collision with fixed object
	24% involve collision with fixed object	25% involve overturning
	12% involve overturning	13% involve collision with other motor vehicle
		13% involve collision with other object
		13% involve collision with pedestrian
Weather Condition	77% occur in clear condition	88% occur in clear condition
	13% occur in cloudy condition	13% occur in cloudy condition
	5% occur in rain condition	
Surface Condition	88% occur in dry condition	88% occur in dry condition
	10% occur in wet condition	13% occur in wet condition
	2% occur in ice condition	
Manner of Collision	44% involve one motor vehicle - going straight	88% involve one motor vehicle - going straight
	16% involve same direction - both going straight, rear end	13% involve same direction - both going straight, rear end
	11% involve same direction - both going straight, sideswipe	
Vehicle Direction of Travel	47% involve vehicle traveling northbound	63% involve vehicle traveling southbound
	46% involve vehicle traveling southbound	38% involve vehicle traveling northbound
	6% involve unknown direction	

APPENDIX G

LIFE CYCLE COST ANALYSIS

Pavement Life-Cycle Cost Analysis Worksheet

Project Details				
Project title	I-37			
Route	Frt Rds, Segment 2 & 3			
Milepost begin	20			
Milepost end	34			
Existing Roadway Characteristics				
Surface type (Asphalt or Concrete)		=	Asphalt	*<<Select from Pull-down List>>*
# of directions of travel (1 = one-way; 2 = two-way)		=	2	
# of lanes (in one direction)		=	2	
Width of typical lane (ft)		=	12	
Left shoulder width (ft)		=	2	
Right shoulder width (ft)		=	2	
Total roadway analysis segment length (centerline miles)		=	14	
Current year		=	2016	
Elevation (> 4,000 ft or < 4,000 ft)?		=	< 4,000 ft	*<<Select from Pull-down List>>*
Roadway width (ft) [each direction lanes & shoulders]		=	28	
Total lane-miles [total traffic direction lanes & shoulders]		=	65.3	
Total square feet [total traffic direction lanes & shoulders]		=	4,139,520	
Total square yards [total traffic direction lanes & shoulders]		=	459,947	
LCCA Parameters				
Analysis period (years)		=	40	
Year of net present value		=	2017	
First year of improvements		=	2021	
Discount rate (%) - low		=	3%	
Discount rate (%) - high		=	7%	

Design Alternatives (DA)

Characteristics			Pavement Material Cost ($)		
Treatment Type	*Pavement Thickness*	*Typical Service Life (years)*	*Lane-miles*	*Square Feet*	*Square Yards*
Concrete Reconstruction	8"-12"	30-34	$350,000	$5.5	$50
Asphalt Reconstruction	8"-12"	26-30	$280,000	$4.4	$40
Concrete Medium Rehab	1"-3"	24-28	$75,000	$1.2	$11
Concrete Light Rehab	<1"	18-22	$50,000	$0.8	$7
Asphalt Medium Rehab	3"-8"	20-24	$105,000	$1.7	$15
Asphalt Light Rehab	<3"	14-18	$70,000	$1.1	$10

Reconstruction: Other Materials Cost Factor

1.60

Rehab: Other Materials Cost Factor

1.20

Total Cost Factor (e.g., includes design, mobilization, traffic control, contingency, etc.)

1.72

Treatment Type	Pavement Thickness	Typical Service Life (years)	Total Unit Cost ($) [includes material costs and indirect costs] Lane-miles	Square Feet	Square Yards	Total Bi-Directional Cost ($) Total Cost
Concrete Reconstruction	8"-12"	30-34	$963,200	$15.2	$137	$62,929,067
Asphalt Reconstruction	8"-12"	26-30	$770,560	$12.2	$109	$50,343,253
Concrete Medium Rehab	1"-3"	24-28	$154,800	$2.4	$22	$10,113,600
Concrete Light Rehab	<1"	18-22	$103,200	$1.6	$15	$6,742,400
Asphalt Medium Rehab	3"-8"	20-24	$216,720	$3.4	$31	$14,159,040
Asphalt Light Rehab	<3"	14-18	$144,480	$2.3	$21	$9,439,360

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Year	Project Number	Tracs No.	Direction of Improvement	Treatment Type	Improvement Description	Beg. MP	End MP	Length (miles)
1967	74-4-17		Both	Asphalt Reconstruction	New Construction	20	40	20
1982	74-3-19		Both	Asphalt Light Rehab	Seal coat	20	40	20
1990	74-3-27		Both	Asphalt Light Rehab	Seal coat	20	40	20
2003	73-14-005		Both	Asphalt Light Rehab	Seal Coat	20	40	20
2009	74-2-65		Both	Asphalt Medium Rehab	Medium Rehab	20	40	20
2017	74-2-79		Both	Asphalt Light Rehab	Seal coat	20	40	20

Interval between Improvements in Years	Treatment Type Options	Estimated Historical Interval Value between Improvements in Years
15	Concrete Reconstruction	
8	Asphalt Reconstruction	50
13	Concrete Medium Rehab	
6	Concrete Light Rehab	
8	Asphalt Medium Rehab	8
	Asphalt Light Rehab	9

Design Alternative # 2 - Asphalt Reconstruction

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Number of Years	Year	Asphalt Reconstruction	Agency Cost ($)	Net Present Value @ 3%	Net Present Value @ 7%
0	2016	None	$0	$0	$0
1	2017	None	$0	$0	$0
2	2018	None	$0	$0	$0
3	2019	None	$0	$0	$0
4	2020	None	$0	$0	$0
5	2021	Asphalt Reconstruction	$50,343,253	$44,729,329	$38,406,627
6	2022	None	$0	$0	$0
7	2023	None	$0	$0	$0
8	2024	None	$0	$0	$0
9	2025	None	$0	$0	$0
10	2026	None	$0	$0	$0
11	2027	None	$0	$0	$0
12	2028	None	$0	$0	$0
13	2029	None	$0	$0	$0
14	2030	None	$0	$0	$0
15	2031	None	$0	$0	$0
16	2032	None	$0	$0	$0
17	2033	None	$0	$0	$0
18	2034	None	$0	$0	$0
19	2035	Asphalt Light Rehab	$9,439,360	$5,544,629	$2,792,766
20	2036	None	$0	$0	$0
21	2037	None	$0	$0	$0
22	2038	None	$0	$0	$0
23	2039	None	$0	$0	$0
24	2040	None	$0	$0	$0
25	2041	None	$0	$0	$0
26	2042	None	$0	$0	$0
27	2043	Asphalt Medium Rehab	$14,159,040	$6,565,472	$2,438,123
28	2044	None	$0	$0	$0
29	2045	None	$0	$0	$0
30	2046	None	$0	$0	$0
31	2047	None	$0	$0	$0
32	2048	None	$0	$0	$0
33	2049	None	$0	$0	$0
34	2050	None	$0	$0	$0
35	2051	None	$0	$0	$0
36	2052	None	$0	$0	$0
37	2053	None	$0	$0	$0
38	2054	Asphalt Light Rehab	$9,439,360	$3,162,025	$772,223
39	2055	None	$0	$0	$0
40	2056	None	$0	$0	$0

Design Alternative # 2 - Asphalt Reconstruction

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Number of Years	Year	Asphalt Reconstruction	Agency Cost ($)	Net Present Value @ 3%	Net Present Value @ 7%
41	2057	None	$0	$0	$0
42	2058	None	$0	$0	$0
43	2059	None	$0	$0	$0
44	2060	None	$0	$0	$0
45	2061	None	$0	$0	$0
Pick Last Used DA treatment type to calculate Remaining Service Life ››		Asphalt Light Rehab	$5,309,640	$1,446,196	$270,507
Enter Year of Last Used DA Improvement ››		2054	Remaining Service Life Cost ^^		

	Net Present Value ($) @ 3%	Net Present Value ($) @ 7%
NET PRESENT VALUE	$58,555,258	$44,139,232
AGENCY COST	$78,071,373	

Design Alternative # 3 - Asphalt Medium Rehab

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Number of Years	Year	Asphalt Medium Rehab Focus	Agency Cost ($)	Net Present Value @ 3%	Net Present Value @ 7%
0	2016	None	$0	$0	$0
1	2017	None	$0	$0	$0
2	2018	None	$0	$0	$0
3	2019	None	$0	$0	$0
4	2020	None	$0	$0	$0
5	2021	Asphalt Medium Rehab	$14,159,040	$12,580,124	$10,801,864
6	2022	None	$0	$0	$0
7	2023	None	$0	$0	$0
8	2024	None	$0	$0	$0
9	2025	None	$0	$0	$0
10	2026	None	$0	$0	$0
11	2027	None	$0	$0	$0
12	2028	None	$0	$0	$0
13	2029	Asphalt Light Rehab	$9,439,360	$6,620,577	$4,191,189
14	2030	None	$0	$0	$0
15	2031	None	$0	$0	$0
16	2032	None	$0	$0	$0
17	2033	None	$0	$0	$0
18	2034	None	$0	$0	$0
19	2035	None	$0	$0	$0
20	2036	None	$0	$0	$0
21	2037	Asphalt Reconstruction	$50,343,253	$27,873,839	$13,009,653
22	2038	None	$0	$0	$0
23	2039	None	$0	$0	$0
24	2040	None	$0	$0	$0
25	2041	None	$0	$0	$0
26	2042	None	$0	$0	$0
27	2043	None	$0	$0	$0
28	2044	None	$0	$0	$0
29	2045	None	$0	$0	$0
30	2046	None	$0	$0	$0
31	2047	None	$0	$0	$0
32	2048	None	$0	$0	$0
33	2049	None	$0	$0	$0
34	2050	None	$0	$0	$0
35	2051	Asphalt Light Rehab	$9,439,360	$3,455,230	$946,006
36	2052	None	$0	$0	$0
37	2053	None	$0	$0	$0
38	2054	None	$0	$0	$0

Design Alternative # 3 - Asphalt Medium Rehab

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Number of Years	Year	Asphalt Medium Rehab Focus	Agency Cost ($)	Net Present Value @ 3%	Net Present Value @ 7%
39	2055	None	$0	$0	$0
40	2056	None	$0	$0	$0
41	2057	None	$0	$0	$0
42	2058	None	$0	$0	$0
43	2059	Asphalt Medium Rehab	$14,159,040	$4,091,385	$825,877
44	2060	None	$0	$0	$0
45	2061	None	$0	$0	$0
Pick Last Used DA treatment type to calculate Remaining Service Life ››		Asphalt Medium Rehab	$12,871,855	$3,505,930	$655,775
Enter Year of Last Used DA Improvement ››		2059	Remaining Service Life Cost ^^		

.

	Net Present Value ($) @ 3%	Net Present Value ($) @ 7%
NET PRESENT VALUE	$51,115,224	$29,118,814
AGENCY COST	$84,668,199	

Design Alternative # 4 - Asphalt Light Rehab

Frt Rds, Segment 2 & 3 MP 20 - MP 34

Number of Years	Year	Asphalt Light Rehab Focus	Agency Cost ($)	Net Present Value @ 3%	Net Present Value @ 7%
0	2016	None	$0	$0	$0
1	2017	None	$0	$0	$0
2	2018	None	$0	$0	$0
3	2019	None	$0	$0	$0
4	2020	None	$0	$0	$0
5	2021	Asphalt Light Rehab	$9,439,360	$8,386,749	$7,201,243
6	2022	None	$0	$0	$0
7	2023	None	$0	$0	$0
8	2024	None	$0	$0	$0
9	2025	None	$0	$0	$0
10	2026	None	$0	$0	$0
11	2027	None	$0	$0	$0
12	2028	None	$0	$0	$0
13	2029	Asphalt Reconstruction	$50,343,253	$35,309,745	$22,353,007
14	2030	None	$0	$0	$0
15	2031	None	$0	$0	$0
16	2032	None	$0	$0	$0
17	2033	None	$0	$0	$0
18	2034	None	$0	$0	$0
19	2035	None	$0	$0	$0
20	2036	None	$0	$0	$0
21	2037	None	$0	$0	$0
22	2038	None	$0	$0	$0
23	2039	None	$0	$0	$0
24	2040	None	$0	$0	$0
25	2041	None	$0	$0	$0
26	2042	None	$0	$0	$0
27	2043	Asphalt Light Rehab	$9,439,360	$4,376,981	$1,625,415
28	2044	None	$0	$0	$0
29	2045	None	$0	$0	$0
30	2046	None	$0	$0	$0
31	2047	None	$0	$0	$0
32	2048	None	$0	$0	$0
33	2049	None	$0	$0	$0
34	2050	None	$0	$0	$0
35	2051	Asphalt Medium Rehab	$14,159,040	$5,182,844	$1,419,010
36	2052	None	$0	$0	$0
37	2053	None	$0	$0	$0

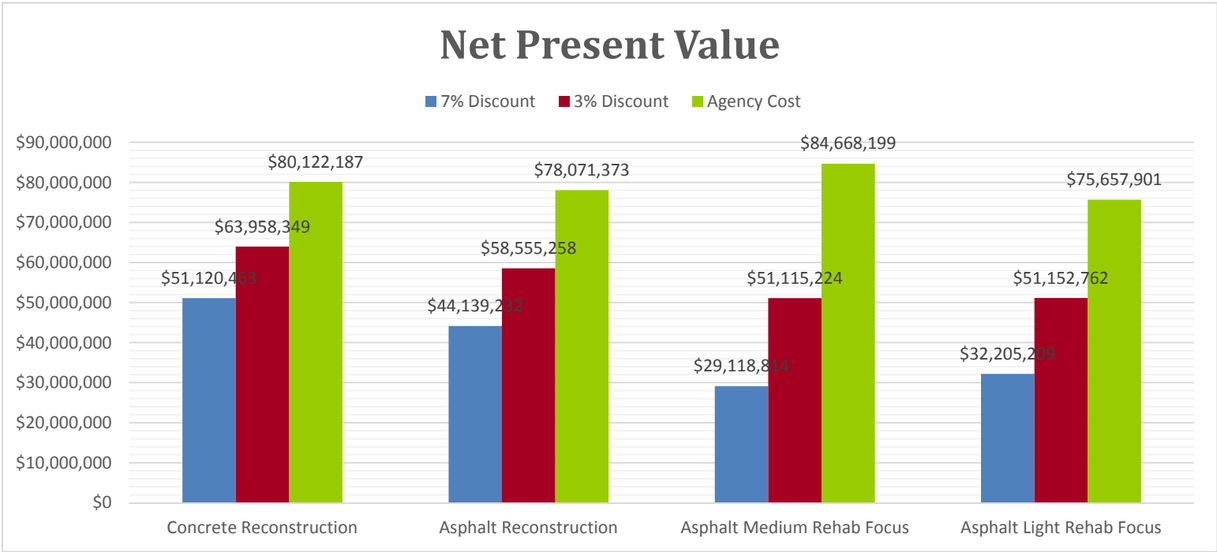
38	2054	None	$0	$0	$0
39	2055	None	$0	$0	$0
40	2056	None	$0	$0	$0
41	2057	None	$0	$0	$0
42	2058	None	$0	$0	$0
43	2059	None	$0	$0	$0
44	2060	None	$0	$0	$0
45	2061	None	$0	$0	$0
Pick Last Used DA treatment type to calculate Remaining Service Life ››		Asphalt Medium Rehab	$7,723,113	$2,103,558	$393,465
Enter Year of Last Used DA Improvement ››		2051	Remaining Service Life Cost ^^		

	Net Present Value ($) @ 3%	Net Present Value ($) @ 7%
NET PRESENT VALUE	$51,152,762	$32,205,209
AGENCY COST	$75,657,901	

Summary of LCCA Results

Frt Rds, Segment 2 & 3 MP 20 - MP 34

	Concrete Reconstruction	Asphalt Reconstruction	Asphalt Medium Rehab Focus	Asphalt Light Rehab Focus
Net Present Value - 3%	$63,958,349	$58,555,258	$51,115,224	$51,152,762
Net Present Value - 7%	$51,120,463	$44,139,232	$29,118,814	$32,205,209
Agency Cost	$80,122,187	$78,071,373	$84,668,199	$75,657,901



Corgey Road Bridge (I-37)

Bridge Information	
Bridge Deck Area (A225)	7560 SF
Year Built (N27)	1980
Exp Service Life	75 YR
Total Bridge Length (N49)	270 LF
Number of Spans (N45+N46)	4
Skew Angle (N34)	10 DEG
Average Elevation	390 FT
Max Pier Height	20 FT
* Amount of Widening for Bridge Replacement Alternative (FT)	0 FT
Revised Deck Area (Bridge Replace)	7560 FT
**Scour Critical Rating (N113)	9

Deterioration Slope				
Item	Deterioration Line Equation			Year Drop
	Slope =	Days	Years	
Substr	y =	-0.000082x	-0.0298x	33.56
Superstr	y =	-0.000082x	-0.0298x	33.56
Deck	y =	-0.000088x	-0.0322x	31.06

***Input 0 if no widening. Input should include widening on both sides of bridge if applicable.**

****If scour critical rating is 3 or lower, Option 2 should consider the implementation of scour countermeasures.**

Notes:

1. Widening is intended only to correct lane and/or shoulder width deficiencies. It is not intended for adding traffic capacity (i.e. adding general purpose lanes).

Cost Multipliers			
Elevation > 4000ft		390	1.00
Pier Height > 30ft		20	1.00
Length to # span ratio		67.50	1.1
Skew > 30degrees		10.00	1.00
Project Cost Multiplier		All Options	1.72

L to # Span Multiplier	
L/ # Span Ratio	Multiplier
=>100	1.00
=>60	1.10
<60	1.25

Skew Multiplier	
Skew	Multiplier
<30	1.00
=>30	1.10

Adjusted Bridge Replace Cost	
Base Bridge Replacement Cost (Per SF)	$90.00
Bridge Replacement Cost w/ Multipliers (Per SF)	$99.00

Elevation Multiplier	
Elev	Multiplier
<4000	1.00
=>4000	1.00

Pier H Multiplier	
Pier H	Multiplier
<30	1.00
=>30	1.10

User input cell

Only manipulate cell value after consulting with team

Bridge History (Inspections/As-builts)		
Description	Category	Year
Original construction I 37-2(46)104 - November 12, 1980 No other as-builts provided; 2012, 2014 and 2016 inspection reports were provided along with rating data from 1992-2017.		1980

Corgey Road Bridge (I-37)

Option 1 - Replace Bridge Now

Bridge Deck Area =	7560 SF
Widen Deck Area =	7560 SF
Year Built =	1980
Exp Service Life =	75 YR

Notes:
1. Red fill in "Year" column means current bridge is nearing the end of its expected service life.
2. When superstructure replacement is selected, deck replacement should be selected as well.
3. Deck Rehab does not account for any deck widening during replacement.
4. Widened deck area applies to bridge replacement only.
5. Repair deck (after bridge replace) should provide a deck deterioration of 1 point every 20 years.

Item	Deterioration Line Equation			Year Drop
	Slope =	Days	Years	
Substr	y =	-0.000082x	-0.030x	33.56
Superstr	y =	-0.000082x	-0.030x	33.56
Deck	y =	-0.000088x	-0.032x	31.06

		Substructure						*Superstructure*						*Deck*							*Summary*		
	Year	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Minimum Rating	Total Cost Per Year (2017 $ raw costs)	Present Value at 3%	Present Value at 7%
0	2017	5	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					6	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					7	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.								
1	2018	5						6						7									
2	2019	5						6						7									
3	2020	5						6						7									
4	2021	5						6						7									
5	2022	5						6						7									
6	2023	8	Replace (Bridge)	$99.00	$748,440.00	75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	$748,440.00	$626,806.72	$498,717.17
7	2024	8						8						8						8			
8	2025	8						8						8						8			
9	2026	8						8						8						8			
10	2027	8						8						8						8			
11	2028	8						8						8						8			
12	2029	8						8						8						8			
13	2030	8						8						8						8			
14	2031	8						8						8						8			
15	2032	8						8						8						8			
16	2033	7						7						7						7			
17	2034	7						7						7						7			
18	2035	7						7						7						7			
19	2036	7						7						7						7			
20	2037	7						7						7						7			
21	2038	7						7						7						7			
22	2039	7						7						7						7			
23	2040	7						7						7						7			
24	2041	7						7						7						7			
25	2042	6						6						6						6			
26	2043	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 0	7	$68,040.00	$31,549.79	$11,716.18
27	2044	7						7						7						7			
28	2045	7						7						7						7			
29	2046	7						7						7						7			
30	2047	7						7						7						7			
31	2048	7						7						7						7			
32	2049	7						7						7						7			
33	2050	7						7						7						7			
34	2051	7						7						7						7			
35	2052	7						7						7						7			
36	2053	6						6						6						6			
37	2054	6						6						6						6			
38	2055	6						6						6						6			
39	2056	6						6						6						6			
40	2057	6						6						6						6			
41	2058	6						6						6						6			
42	2059	6						6						6						6			
43	2060	6						6						6						6			
44	2061	6						6						6						6			
45	2062	5						5						5						5			
46	2063	6	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	6	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	6	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 0	6	$68,040.00	$17,468.35	$3,027.68
47	2064	6						6						6						6			
48	2065	6						6						6						6			
49	2066	6						6						6						6			
50	2067	6						6						6						6			
51	2068	6						6						6						6			
52	2069	6						6						6						6			
53	2070	6						6						6						6			
54	2071	6						6						6						6			
55	2072	5						5						5						5			
56	2073	5						5						5						5			
57	2074	5						5						5						5			
58	2075	5						5						5						5			
59	2076	5						5						5						5			
60	2077	5						5						5						5			
61	2078	5						5						5						5			
62	2079	5						5						5						5			
63	2080	5						5						5						5			
64	2081	5						5						5						5			
65	2082	5						5						5						5			
																				Total Cost =	**$884,520.00**	**$675,824.86**	**$513,461.04**

Average Rating =	6.45
End Rating =	5

Comments:

Corgey Road Bridge (I-37)

Option 2 - Perform Bridge Rehabilitiation Then Replace

Bridge Deck Area =	7560 SF
Widen Deck Area =	7560 SF
Year Built =	1980
Exp Service Life =	75 YR

Notes:

1. Red fill in "Year" column means current bridge is nearing the end of its expected service life.
2. When superstructure replacement is selected, deck replacement should be selected as well.
3. Deck Rehab does not account for any deck widening during replacement.
4. Widened deck area applies to bridge replacement only.
5. Repair deck (after bridge replace) should provide a deck deterioration of 1 point every 20 years. Repair (Deck) should maintain deck rating for life of repair, if the rating would otherwise drop a point (i.e., if the rating would drop from a "5" to a "4", Repair Deck would maintain a "5" at that year.)
6. For other repair items, the "+" value rating should be applied to improve the bridge rating's value for that year.

Item	Deterioration Line Equation			Year Drop
	Slope =	Days	Years	
Substr	y =	-0.000082x	-0.030x	33.56
Superstr	y =	-0.000082x	-0.030x	33.56
Deck	y =	-0.000088x	-0.032x	31.06

		Substructure						*Superstructure*						*Deck*							*Summary*		
	Year	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Minimum Rating	Total Cost Per Year (2017 $ raw costs)	Present Value at 3%	Present Value at 7%
0	2017	5	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					6	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					7	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.								
1	2018	5						6						7									
2	2019	5						6						7									
3	2020	5						6						7									
4	2021	5						6						7									
5	2022	5						6						7									
6	2023	7	Rehab (Substr)	$24.75	$187,110.00	50	+ 2	6						7						6	$187,110.00	$156,701.68	$124,679.29
7	2024	7						6						7						6			
8	2025	7						6						7						6			
9	2026	7						6						7						6			
10	2027	7						6						7						6			
11	2028	7						6						7						6			
12	2029	7						6						7						6			
13	2030	7						6						7						6			
14	2031	7						6						7						6			
15	2032	7						5	Repair (Supr - Conc)	$5.00	$37,800.00	34	+ 1	6						5	$37,800.00	$24,262.38	$13,700.46
16	2033	7						6						6						6			
17	2034	7						6						6						6			
18	2035	7						6						6						6			
19	2036	7						6						6						6			
20	2037	7						6						6						6			
21	2038	7						6						6						6			
22	2039	7						6						6						6			
23	2040	7						6						6						6			
24	2041	7						6						6						6			
25	2042	7						6						6						6			
26	2043	6						6						6						6			
27	2044	6						6						6						6			
28	2045	6						6						6						6			
29	2046	6						6						6						6			
30	2047	6						6						6						6			
31	2048	6						6						6						6			
32	2049	6						6						6						6			
33	2050	6						6						6						6			
34	2051	6						6						6						6			
35	2052	6						6						6						6			
36	2053	6						6						6						6			
37	2054	6						6						6						6			
38	2055	8	Replace (Bridge)	$99.00	$748,440.00	75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	$748,440.00	$243,412.26	$57,223.37
39	2056	8						8						8						8			
40	2057	8						8						8						8			
41	2058	8						8						8						8			
42	2059	8						8						8						8			
43	2060	8						8						8						8			
44	2061	8						8						8						8			
45	2062	8						8						8						8			
46	2063	8						8						8						8			
47	2064	7						7						7						7			
48	2065	7						7						7						7			
49	2066	7						7						7						7			
50	2067	7						7						7						7			
51	2068	7						7						7						7			
52	2069	7						7						7						7			
53	2070	7						7						7						7			
54	2071	7						7						7						7			
55	2072	7						7						7						7			
56	2073	7						7						7						7			
57	2074	6						6						6						6			
58	2075	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 0	7	$68,040.00	$12,251.95	$1,344.33
59	2076	7						7						7						7			
60	2077	7						7						7						7			
61	2078	7						7						7						7			
62	2079	7						7						7						7			
63	2080	7						7						7						7			
64	2081	7						7						7						7			
65	2082	7						7						7						7			
																				Total Cost =	**$1,041,390.00**	**$436,628.27**	**$196,947.45**

Average Rating =	6.58
End Rating =	7

Comments:

Corgey Road Bridge (I-37)

Option 3 - Perform Minimum Repairs Then Replace

Bridge Deck Area =	7560 SF
Widen Deck Area =	7560 SF
Year Built =	1980
Exp Service Life =	75 YR

Notes:

1. Red fill in "Year" column means current bridge is nearing the end of its expected service life.
2. When superstructure replacement is selected, deck replacement should be selected as well.
3. Deck Rehab does not account for any deck widening during replacement.
4. Widened deck area applies to bridge replacement only.
5. Repair deck (after bridge replace) should provide a deck deterioration of 1 point every 20 years. Repair (Deck) should maintain deck rating for life of repair, if the rating would otherwise drop a point (i.e., if the rating would drop from a "5" to a "4", Repair Deck would maintain a "5" at that year.
6. For other repair items, the "+" value rating should be applied to improve the bridge rating's value for that year.

Item	Deterioration Line Equation			Year Drop
	Slope =	Days	Years	
Substr	y =	-0.000082x	-0.030x	33.56
Superstr	y =	-0.000082x	-0.030x	33.56
Deck	y =	-0.000088x	-0.032x	31.06

		Substructure						*Superstructure*						*Deck*						*Summary*			
	Year	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Rating	Item	Cost (Per SF)	Cost (Total)	Service Life	Rating Increase	Minimum Rating	Total Cost Per Year (2017 $ raw costs)	Present Value at 3%	Present Value at 7%
0	2017	5	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					6	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.					7	No Rehab/Repair Work Can Be Done. Not Yet In 5-Year Program.								
1	2018	5						6						7									
2	2019	5						6						7									
3	2020	5						6						7									
4	2021	5						6						7									
5	2022	5						6						7									
6	2023	6	Repair (Substr)	$5.00	$37,800.00	34	+ 1	6						7						6	$37,800.00	$31,656.90	$25,187.74
7	2024	6						6						7						6			
8	2025	6						6						7						6			
9	2026	6						6						7						6			
10	2027	6						6						7						6			
11	2028	6						6						7						6			
12	2029	6						6						7						6			
13	2030	6						6						7						6			
14	2031	6						6						7						6			
15	2032	6						5	Repair (Supr - Conc)	$5.00	$37,800.00	34	+ 1	6						5	$37,800.00	$24,262.38	$13,700.46
16	2033	6						6						6						6			
17	2034	6						6						6						6			
18	2035	6						6						6						6			
19	2036	6						6						6						6			
20	2037	6						6						6						6			
21	2038	6						6						6						6			
22	2039	6						6						6						6			
23	2040	6						6						6						6			
24	2041	6						6						6						6			
25	2042	6						6						6						6			
26	2043	6						6						6						6			
27	2044	5						6						6						5			
28	2045	5						6						6						5			
29	2046	5						6						6						5			
30	2047	5						6						6						5			
31	2048	5						6						6						5			
32	2049	5						6						6						5			
33	2050	5						6						6						5			
34	2051	5						6						6						5			
35	2052	5						6						6						5			
36	2053	5						6						6						5			
37	2054	5						6						6						5			
38	2055	8	Replace (Bridge)	$99.00	$748,440.00	75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	Replace (Bridge)			75	Rating = 8	8	$748,440.00	$243,412.26	$57,223.37
39	2056	8						8						8						8			
40	2057	8						8						8						8			
41	2058	8						8						8						8			
42	2059	8						8						8						8			
43	2060	8						8						8						8			
44	2061	8						8						8						8			
45	2062	8						8						8						8			
46	2063	8						8						8						8			
47	2064	7						7						7						7			
48	2065	7						7						7						7			
49	2066	7						7						7						7			
50	2067	7						7						7						7			
51	2068	7						7						7						7			
52	2069	7						7						7						7			
53	2070	7						7						7						7			
54	2071	7						7						7						7			
55	2072	7						7						7						7			
56	2073	6						6						6						6			
57	2074	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 1	7	Repair (After Bridge Replace)	$3.00	$22,680.00	20	+ 0	7	$68,040.00	$12,619.51	$1,438.43
58	2075	7						7						7						7			
59	2076	7						7						7						7			
60	2077	7						7						7						7			
61	2078	7						7						7						7			
62	2079	7						7						7						7			
63	2080	7						7						7						7			
64	2081	7						7						7						7			
65	2082	7						7						7						7			
																				Total Cost =	**$892,080.00**	**$311,951.06**	**$97,550.00**

Average Rating =	6.40
End Rating =	7

Comments:

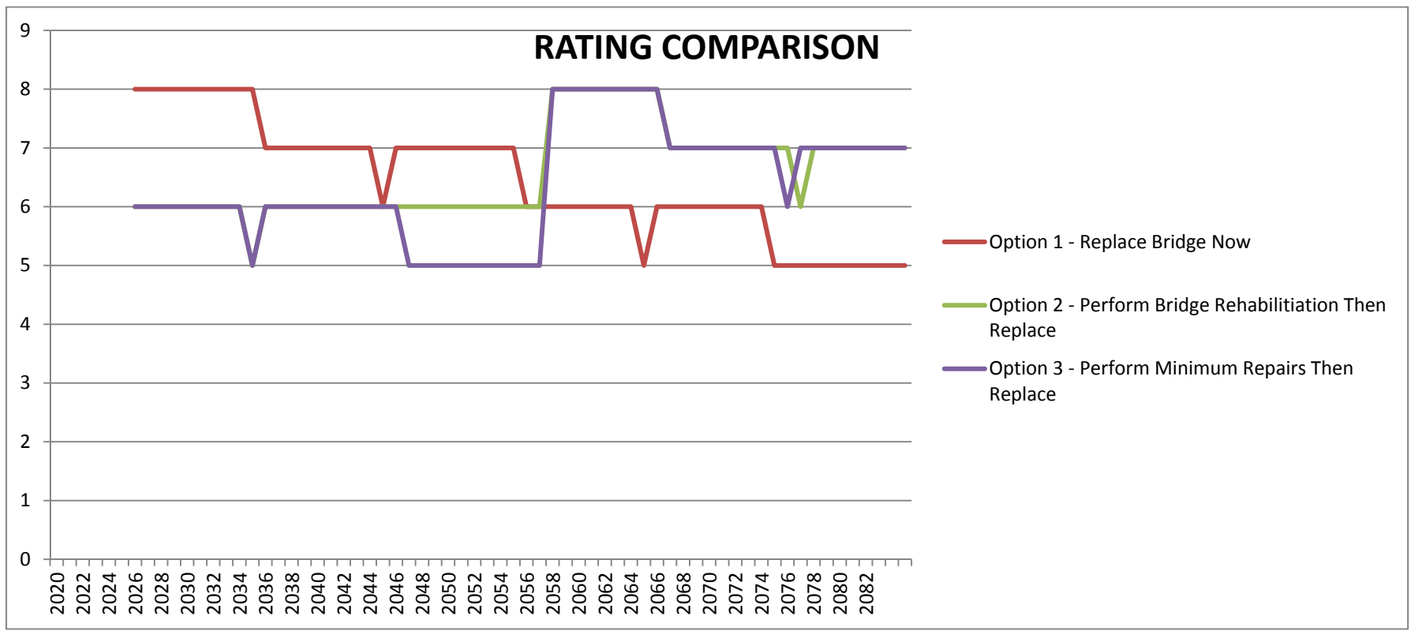
Corgey Road Bridge (I-37)

COST COMPARISON Present Value 2015 Dollars - Raw Costs			
OPTION	AGENCY COST	3%	7%
Option 1 (Replace)	$ 884,520.00	$675,824.86	$513,461.04
Option 2 (Rehab)	$ 1,041,390.00	$436,628.27	$196,947.45
Option 3 (Repair)	$ 892,080.00	$311,951.06	$97,550.00

Comparison to Replacement			
Option	Agency Cost	3%	7%
2 (Rehab)	84.94%	154.78%	260.71%
3 (Repair)	99.15%	216.64%	526.36%

COST COMPARISON Present Value 2015 Dollars - Fully Loaded Costs			
OPTION	AGENCY COST	3%	7%
Option 1 (Replace)	$1,521,374	$1,162,419	$883,153
Option 2 (Rehab)	$1,791,191	$751,001	$338,750
Option 3 (Repair)	$1,534,378	$536,556	$167,786

Bridge Ratings Per Option		
OPTION	AVG RATING	END RATING
Option 1 (Replace)	6.45	5
Option 2 (Rehab)	6.58	7
Option 3 (Repair)	6.40	7



APPENDIX H

SOLUTION UNIT PRICES AND CRASH MODIFICATIOHN FACTORS

SOLUTION	CONSTRUCTION UNIT COST		UNIT	CONSTRUCTION FACTOR^	LOADED COST		DESCRIPTION	CMF
REHABILITATION	**HIGH**	**LOW**			**HIGH**	**LOW**		
Rehabilitate Bridge - Deck Replacement	$95	$77	SF	1.72	$163	$132	Based on deck area; bridge only - no other costs included; includes full-depth bridge deck replacement	0.95
Rehabilitate Bridge - Sealing and Overlay	$9	$7	SF	1.72	$15	$11	Based on deck area; bridge only - no other costs included; includes crack sealing and overlay of deck area	0.95
INFRASTRUCTURE IMPROVEMENT								
Construct Entry/Exit Ramp	$526,000	$505,000	Each	1.72	$904,720	$868,600	Cost per ramp; includes pavement, striping, signing, RPMs, lighting, typical earthwork & drainage; does not include any major structures or improvements on crossroad	1.09
Replace Bridge (Short)	$81	$73	SF	1.72	$139	$125	Based on deck area; bridge only - no other costs included; cost developed generally applies to bridges crossing small washes	0.95
Replace Bridge (Medium)	$97	$87	SF	1.72	$167	$150	Based on deck area; bridge only - no other costs included; cost developed generally applies to bridges crossing over the mainline freeway, crossroads, or large washes	0.95
Replace Bridge (Long)	$119	$107	SF	1.72	$205	$184	Based on deck area; bridge only - no other costs included; cost developed generally applies to bridges crossing large rivers or canyons	0.95
Widen Bridge (Short)	$125	$113	SF	1.72	$215	$194	Based on deck area; cost of bridge approaches not included; cost developed generally applies to bridges crossing small washes	0.95
Widen Bridge (Medium)	$163	$146	SF	1.72	$280	$252	Based on deck area; cost of bridge approaches not included; cost developed generally applies to bridges crossing over the mainline freeway, crossroads, or large washes	0.95
Widen Bridge (Long)	$211	$190	SF	1.72	$363	$327	Based on deck area; cost of bridge approaches not included; cost developed generally applies to bridges crossing large rivers or canyons	0.95
Extend Acceleration/Deceleration Lanes	$441,000	$400,000	Each	1.72	$758,520	$688,000	For extension of acceleration/deceleration lane (AC) in one direction of travel; includes all costs except bridges; for generally at-grade facility with minimal walls and no major drainage improvements	0.21
ROADSIDE DESIGN								
Install Cable Barrier	$136,000	$131,000	Mile	1.56	$212,160	$204,360	In median	0.81 (run-off-road)
SAFETY								
Install Mainline Lane Departure Countermeasures	$18,000	$17,000	Mile	1.56	$28,080	$26,5200	Includes 1 mile of rumble strips (on each shoulder), striping (2 solid, 1 dashed), delineators (on both sides), raised/reflective pavement markers (on 3 stripes), and approximately 10 ground-mounted warning signs (chevrons, curve warning, etc.) for 1 direction of a divided roadway	0.65
Install Mainline Roadway Departure Countermeasures	$211,000	$193,000	Mile	1.56	$329,160	$301,080	Includes 1 mile of shoulder rehabilitation (total shoulder width of 14' and includes new striping and rumble strips on shoulders), minor slope grading, removal of fixed objects (natural objects, not utilities), 1,000 feet of guardrail (including 4 end sections), and installation of approximately 8 crash attenuators (for objects such as signs or utility poles)	0.62 (run-off-road)
Enhance Intersection Signing	$42,000	$28,000	Each	1.56	$65,520	$43,680	Includes removal of 8 signs and the installation of 10 signs (approx. 48" x 48" each, with posts and foundations) and 4 flashing warning beacons	0.75
Install Lighting - Continuous (connect to existing power)	$226,000	$224,000	Mile	1.56	$352,560	$349,440	One side of road only; offset lighting, not high-mast; does not include power supply; includes poles, luminaire, pull boxes, conduit, conductor	0.75 (dark, unlighted)
Install Lighting - Continuous (solar powered LED)	$289,000	$272,000	Pole	1.56	$450,840	$424,320	Offset lighting, not high-mast; solar power LED; includes poles, luminaire, solar panel	0.75 (dark, unlighted)

INTERSECTION CAPACITY								
Minor Intersection Improvements	$230,000	$217,000	Each	1.72	$395,600	$373,240	Includes additional turn lane on two approaches (approx. 150' long with 100' taper), striping for 300' on 4 approaches, signing, new traffic signal (for max. of 3 lanes on any approach)	0.79
Moderate Intersection Improvements (signal)	$426,000	$373,000	Each	1.72	$732,720	$641,560	Includes additional turn lane on four approaches (approx. 300' long with 100' taper), raised medians (for approx. 500' on two approaches), striping (for 500'	0.62

SOLUTION	CONSTRUCTION UNIT COST		UNIT	CONSTRUCTION FACTOR^	LOADED COST		DESCRIPTION	CMF
							on 4 approaches), signing, new traffic signal (for max. of 4 lanes on any approach)	
Moderate Intersection Improvements (roundabout - reconstruction)	$2,343,000	$2,043,000	Each	1.72	$4,029,960	$3,513,960	Reconstruction of two-lane roundabout at 4-legged intersection; realignment of each leg for approx. 1,000 feet including paving, curbs, sidewalk, striping, lighting, signing	0.40
Moderate Intersection Improvements (roundabout - widening)	$1,270,000	$1,127,000	Each	1.72	$2,184,400	$1,938,440	Widening of two-lane roundabout at 4-legged intersection; realignment of each leg for approx. 1,000 feet including paving, curbs, sidewalk, striping, lighting, signing	0.40
ACCESS RAMP/FRONTAGE ROAD INTERSECTION IMPROVEMENTS								
Construct Single-Lane Roundabout (full reconstruction)	$1,415,000	$1,303,000	Each	1.72	$2,433,800	$2,241,160	Full reconstruction of a single-lane roundabout at intersection of entrance/exit ramp and frontage road; realignment of each leg for approx. 1,000 feet including paving, curbs, striping, lighting, signing	0.22
Construct Single-Lane Roundabout (roadway widening)	$870,000	$782,000	Each	1.72	$1,496,400	$1,345,040	Widening of a single-lane roundabout at intersection of entrance/exit ramp and frontage road; realignment of each leg for approx. 1,000 feet including paving, curbs, striping, lighting, signing	0.22
WIDEN CORRIDOR								
Construct New General Purpose Lane (PCCP)	$1,555,000	$1,296,000	Mile	1.72	$2,674,600	$2,229,120	For addition of 1 GP lane (PCCP) in one direction; includes all costs except bridges; for generally at-grade facility with minimal walls and no major drainage improvements	0.90
Construct New General Purpose Lane (AC)	$1,671,000	$1,260,000	Mile	1.72	$2,874,120	$2,167,200	For addition of 1 GP lane (AC) in one direction; includes all costs except bridges; for generally at-grade facility with minimal walls and no major drainage improvements	0.90
ALTERNATE ROUTE								
Construct Frontage Roads	$861,000	$757,000	Mile	1.72	$1,480,920	$1,302,040	For 2-lane AC frontage road; includes all costs except bridges; for generally at-grade facility with minimal walls	1.00

^ Factor accounts for traffic control, erosion control, construction surveying and quality control, mobilization, construction engineering, contingencies, indirect cost allocation, and miscellaneous work

APPENDIX I

CANDIDATE SOLUTION ESTIMATES

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
1	**Corpus Christi Mobility Improvements (Urban)**					
	Widen mainline to add one NB lane from I-69 to start of profile reconstruction (MP 15.6)	1.6	Mile	$2,874,100	$4,598,600	Asphalt
	Widen mainline to add one SB lane from I-69 to start of profile reconstruction (MP 15.6)	1.6	Mile	$2,874,100	$4,598,600	Asphalt
	Raise/reconstruct mainlines and add additional travel lanes (NB/SB, 8 lanes total) from MP 15.6 to US 77	11.4	Lane Mile	$2,874,100	$32,764,700	Asphalt
	Raise/reconstruct mainlines and add additional travel lanes (NB/SB, 6 lanes total) from US 77 to MP 19	11.9	Lane Mile	$2,874,100	$34,201,800	Asphalt
	Additional embankment for reconstructed/new travel lanes (2' of embankment) south of Nueces River	68889	CY	$15	$1,033,300	Provides additional 2' of embankment for total width of 124' (10' shldr, 4 12' lanes, 4' shldr in each direction)
	Additional embankment for reconstructed/new travel lanes (2' of embankment) north of Nueces River	77778	CY	$15	$1,166,700	Provides additional 2' of embankment for total width of 100' (10' shldr, 3 12' lanes, 4' shldr in each direction)
	Replace US 77 frontage road bridge over I-37 to accommodate raised I-37 mainline	11340	SF	$150	$1,701,000	Medium Bridge
	Reconstruct roads/ramps affected by I-37 mainline profile raising	0.8	Lane Mile	$2,874,100	$2,299,300	2 1000' lanes and 9 exit/entrance ramps
	Additional embankment for road/ramp reconstruction	6667	CY	$15	$100,000	
	Extend acceleration/merge length for NB entrance ramp from I-69	0.5	Each	$688,000	$344,000	
	Extend acceleration/merge length for SB entrance ramp from US 77	0.5	Each	$688,000	$344,000	
	Replace NB Nueces River Bridge to remove from floodplain	202032	SF	$200	$40,406,400	Long Bridge (rural)
	Replace SB Nueces River Bridge to remove from floodplain	210000	SF	$200	$42,000,000	Long Bridge (rural)
	Additional ROW	207200	SF	$5	$1,036,000	
				SOLUTION SUBTOTAL:	$166,590,000	
			3%	Preliminary Engineering:	$5,000,000	
			10%	Design:	$16,660,000	
				SOLUTION TOTAL:	$188,250,000	
2	**Corpus Christi Access**					
	Construct NB & SB exit and entrance ramps at grade separation near MP 25.5	4	Each	$904,700	$3,618,800	
	Construct NB & SB exit and entrance ramps at grade separation near MP 28	4	Each	$904,700	$3,618,800	
				SOLUTION SUBTOTAL:	$7,240,000	
			3%	Preliminary Engineering:	$220,000	
			10%	Design:	$720,000	
				SOLUTION TOTAL:	$8,180,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
3	**Mathis Safety Improvements (Rural)**					
	Install NB mainline lane departure countermeasures MP 18 - 31 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	13	Mile	$28,100	$365,300	
	Install SB mainline lane departure countermeasures MP 18 - 31 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	13	Mile	$28,100	$365,300	
	Install median cable barrier MP 31 -34	3	Mile	$212,200	$636,600	
	Construct roundabouts at ramp/frontage roads intersections at SH 188 interchange	4	Each	$2,433,800	$9,735,200	Roundabout Reconstruction
	Enhance signing (additional signs, larger signs, increased reflectivity) with warning beacons at SH 188 Interchange	2	Intersection	$65,500	$131,000	
	Additional ROW	1000	SF	$5	$5,000	
				SOLUTION SUBTOTAL:	$11,240,000	
			3%	Preliminary Engineering:	$340,000	
			10%	Design:	$1,120,000	
				SOLUTION TOTAL:	$12,700,000	
4	**George West Safety Improvements (Rural)**					
	Install NB mainline lane departure countermeasures MP 48 - 57 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	9	Mile	$28,100	$252,900	
	Install SB mainline lane departure countermeasures MP 48 - 57 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	9	Mile	$28,100	$252,900	
	Install NB frontage road lane departure countermeasures MP 48 - 57 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	9	Mile	$28,100	$252,900	
	Install SB frontage road lane departure countermeasures MP 48 - 57 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	9	Mile	$28,100	$252,900	
	Construct roundabouts at ramp/frontage roads intersections at 6 locations	6	Each	$2,433,800	$14,602,800	Roundabout Reconstruction
	Install median cable barrier MP 52 -54	2	Mile	$212,200	$424,400	
	Additional ROW	3000	SF	$5	$15,000	
				SOLUTION SUBTOTAL:	$16,050,000	
			3%	Preliminary Engineering:	$480,000	
			10%	Design:	$1,610,000	
				SOLUTION TOTAL:	$18,140,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
5	**US 59 Interchange Improvement (Rural)**					
	Construct moderate intersection improvements (additional turn lanes on approaches, physical channelization, striping, signing, signalization)	2	Each	$732,700	$1,465,400	
				SOLUTION SUBTOTAL:	$1,470,000	
			3%	Preliminary Engineering:	$40,000	
			10%	Design:	$150,000	
				SOLUTION TOTAL:	$1,660,000	
6	**George West Lighting (Rural)**					
	Install NB safety lighting MP 48 - 49	1	Mile	$352,600	$352,600	Existing Power
	Install SB safety lighting MP 48 - 49	1	Mile	$352,600	$352,600	Existing Power
	Install NB safety lighting at CR 356 ramps, MP 51 -52	2	Each	$113,500	$227,000	
	Install SB safety lighting at CR 356 ramps, MP 51 -52	2	Each	$113,500	$227,000	
	Install NB safety lighting at US 59 ramps, MP 55 - 57	2	Each	$113,500	$227,000	
	Install SB safety lighting at US 59 ramps, MP 55 - 57	2	Each	$113,500	$227,000	
				SOLUTION SUBTOTAL:	$1,610,000	
			3%	Preliminary Engineering:	$50,000	
			10%	Design:	$160,000	
				SOLUTION TOTAL:	$1,820,000	
7	**Three Rivers Mobility Improvements (Rural)**					
	Extend acceleration/merge length for NB entrance ramp from US 281	0.5	Each	$758,500	$379,300	
	Extend deceleration length for SB exit ramp to US 281	0.5	Each	$758,500	$379,300	
				SOLUTION SUBTOTAL:	$760,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$860,000	
8	**Three Rivers Access (Rural)**					
	Construct NB exit and entrance ramps at grade separation near MP 80.8	2	Each	$904,700	$1,809,400	
	Construct SB exit and entrance ramps at grade separation near MP 80.8	2	Each	$904,700	$1,809,400	
				SOLUTION SUBTOTAL:	$3,620,000	
			3%	Preliminary Engineering:	$110,000	
			10%	Design:	$360,000	
				SOLUTION TOTAL:	$4,090,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
9	**FM 791 Freight Improvements (Rural)**					
	Replace FM 791 bridge to provide additional clearance	12160	SF	$170	$2,067,200	Medium Bridge
				SOLUTION SUBTOTAL:	$2,070,000	
			3%	Preliminary Engineering:	$60,000	
			10%	Design:	$210,000	
				SOLUTION TOTAL:	$2,340,000	
10	**Cambellton Access (Rural)**					
	Construct NB exit and entrance ramps at grade separation near MP 90.5	2	Each	$904,700	$1,809,400	
	Construct SB exit and entrance ramps at grade separation near MP 90.5	2	Each	$904,700	$1,809,400	
				SOLUTION SUBTOTAL:	$3,620,000	
			3%	Preliminary Engineering:	$110,000	
			10%	Design:	$360,000	
				SOLUTION TOTAL:	$4,090,000	
11	**Cambellton Frontage Roads (Rural)**					
	Construct northbound frontage roads	7	Mile	$1,480,900	$10,366,300	
	Construct southbound frontage roads	7	Mile	$1,480,900	$10,366,300	
	Construct frontage road bridges (NB and SB) (MP 84)	19912	SF	$170	$3,385,000	Medium Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
	Widen frontage road bridges (NB and SB) (MP 88.5)	11808	SF	$360	$4,250,900	Long Bridge, assumed two 12' bridge widenings
	Construct frontage road bridges (NB and SB) (MP 91)	44460	SF	$200	$8,892,000	Long Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
	Construct frontage road bridges (NB and SB) (MP 91.5)	46740	SF	$200	$9,348,000	Long Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
	Additional ROW	1848000	SF	$5	$9,240,000	
				SOLUTION SUBTOTAL:	$55,850,000	
			3%	Preliminary Engineering:	$1,680,000	
			10%	Design:	$5,590,000	
				SOLUTION TOTAL:	$63,120,000	
12	**Cambellton Safety Improvements (Rural)**					
	Install NB mainline lane departure countermeasures MP 91- 98 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	7	Mile	$28,100	$196,700	
	Install SB mainline lane departure countermeasures MP 91- 98 (rumble strips, striping, delineators, raised/reflective pavement markers, chevrons)	7	Mile	$28,100	$196,700	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
	Install NB safety lighting MP 91-98	7	Mile	$352,600	$2,468,200	Existing Power
	Install SB safety lighting MP 91-98	7	Mile	$352,600	$2,468,200	Existing Power
	Extend acceleration/merge length for NB entrance ramp from US 281A	0.5	Each	$758,500	$379,300	
	Install NB roadway departure coutermeasures MP 91 - 92 (shoulder rehabiliation, recovery area grading, guardrail, fixed object removal, crash attenuators)	1	Mile	$329,200	$329,200	
	Install SB roadway departure coutermeasures MP 91 - 92 (shoulder rehabiliation, recovery area grading, guardrail, fixed object removal, crash attenuators)	1	Mile	$329,200	$329,200	
				SOLUTION SUBTOTAL:	$6,370,000	
			3%	Preliminary Engineering:	$190,000	
			10%	Design:	$640,000	
				SOLUTION TOTAL:	$7,200,000	
13	**Pullin Drive Access (Rural)**					
	Construct NB exit/entrance ramps near MP 102	2	Each	$904,700	$1,809,400	
				SOLUTION SUBTOTAL:	$1,810,000	
			3%	Preliminary Engineering:	$50,000	
			10%	Design:	$180,000	
				SOLUTION TOTAL:	$2,040,000	
14	**Corgey Road Bridge (Rural)**					
	OPTION A: Repair/rehabilitate bridge	7852	SF	$160	$1,256,300	Rehab
	OPTION B: Replace bridge	7852	SF	$170	$1,334,800	Medium Bridge
				SOLUTION SUBTOTAL:	$1,260,000	OPTION A
			3%	Preliminary Engineering:	$38,000	
			10%	Design:	$126,000	
				SOLUTION TOTAL:	$1,424,000	
				SOLUTION SUBTOTAL:	$1,330,000	OPTION B
			3%	Preliminary Engineering:	$40,000	
			10%	Design:	$130,000	
				SOLUTION TOTAL:	$1,500,000	
15	**Coughran Road Freight Improvements (Rural)**					
	Replace Coughran Road bridge to provide additional clearance	10370	SF	$170	$1,762,900	Medium Bridge
				SOLUTION SUBTOTAL:	$1,760,000	
			3%	Preliminary Engineering:	$50,000	
			10%	Design:	$180,000	
				SOLUTION TOTAL:	$1,990,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
16	**SH 97 Freight Improvements (Rural)**					
	Replace SH 97 bridges to provide additional clearance	26400	SF	$170	$4,488,000	Medium Bridge
				SOLUTION SUBTOTAL:	$4,490,000	
			3%	Preliminary Engineering:	$130,000	
			10%	Design:	$450,000	
				SOLUTION TOTAL:	$5,070,000	
17	**South Pleasanton Frontage Roads (Rural)**					
	Construct northbound frontage roads	7	Mile	$1,480,900	$10,366,300	
	Construct southbound frontage roads	7	Mile	$1,480,900	$10,366,300	
	Construct frontage road bridges (NB and SB) (MP 108)	76000	SF	$200	$15,200,000	Long Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
	Additional ROW	1848000	SF	$5	$9,240,000	
				SOLUTION SUBTOTAL:	$45,170,000	
			3%	Preliminary Engineering:	$1,360,000	
			10%	Design:	$4,520,000	
				SOLUTION TOTAL:	$51,050,000	
18	**Pleasanton Mobility Improvements (Rural)**					
	Add one NB mainline lane from SH 97 to FM 536	8	Mile	$2,167,200	$17,337,600	Asphalt
	Add one SB mainline lane from SH 97 to FM 536	8	Mile	$2,167,200	$17,337,600	Asphalt
	Widen bridge to accommodate additional lanes (both directions) CR 1784	6960	SF	$280	$1,948,800	Medium Bridge, assumed 24' widening
	Extend acceleration/merge length for NB entrance ramp from SH 97	0.5	Each	$758,500	$379,300	
	Extend deceleration length for SB exit ramp to SH 97	0.5	Each	$758,500	$379,300	
				SOLUTION SUBTOTAL:	$37,380,000	
			3%	Preliminary Engineering:	$1,120,000	
			10%	Design:	$3,740,000	
				SOLUTION TOTAL:	$42,240,000	
19	**SH 97 Interchange Improvements (Rural)**					
	Construct moderate intersection improvements (additional turn lanes on approaches, physical channelization, striping, signing, signalization)	2	Each	$732,700	$1,465,400	
	Additional ROW	7200	SF	$5	$36,000	
				SOLUTION SUBTOTAL:	$1,500,000	
			3%	Preliminary Engineering:	$50,000	
			10%	Design:	$150,000	
				SOLUTION TOTAL:	$1,700,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
20	**FM 536 Interchange Improvement (Rural)**					
	Construct minor intersection improvements (additonal turn lanes on some approaches, striping, signing, signalization or signal upgrades; no new through lanes)	2	Each	$395,600	$791,200	
				SOLUTION SUBTOTAL:	$790,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$890,000	
21	**Verdi Road Interchange Improvement (Rural)**					
	Construct minor intersection improvements (additonal turn lanes on some approaches, striping, signing, signalization or signal upgrades; no new through lanes)	2	Each	$395,600	$791,200	
				SOLUTION SUBTOTAL:	$790,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$890,000	
22	**North Pleasanton Frontage Roads (Rural)**					
	Construct northbound frontage roads	8	Mile	$1,480,900	$11,847,200	
	Construct southbound frontage roads	8	Mile	$1,480,900	$11,847,200	
				SOLUTION SUBTOTAL:	$23,690,000	
			3%	Preliminary Engineering:	$710,000	
			10%	Design:	$2,370,000	
				SOLUTION TOTAL:	$26,770,000	
23	**Floresville Safety Improvements (Rural)**					
	Install NB continuous lighting from FM 536 to SH 1604	7	Mile	$352,600	$2,468,200	Existing Power
	Install SB continuous lighting from FM 536 to SH 1604	7	Mile	$352,600	$2,468,200	Existing Power
				SOLUTION SUBTOTAL:	$4,940,000	
			3%	Preliminary Engineering:	$150,000	
			10%	Design:	$490,000	
				SOLUTION TOTAL:	$5,580,000	
24	**Floresville Mobility Improvements (Rural)**					
	Widen NB mainline to add one lane from FM 536 to SH 1604	7	Mile	$2,167,200	$15,170,400	Asphalt
	Widen SB mainline to add one lane from FM 536 to SH 1604	7	Mile	$2,167,200	$15,170,400	Asphalt
				SOLUTION SUBTOTAL:	$30,340,000	
			3%	Preliminary Engineering:	$910,000	
			10%	Design:	$3,030,000	
				SOLUTION TOTAL:	$34,280,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
25	**Waterwood Dr/Mathis Rd Interchange Improvement (Rural)**					
	Construct minor intersection improvements (additonal turn lanes on some approaches, striping, signing, signalization or signal upgrades; no new through lanes)	2	Each	$395,600	$791,200	
				SOLUTION SUBTOTAL:	$790,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$890,000	
26	**Floresville Frontage Roads (Rural)**					
	Construct northbound frontage roads	7	Mile	$1,480,900	$10,366,300	
	Construct southbound frontage roads	7	Mile	$1,480,900	$10,366,300	
				SOLUTION SUBTOTAL:	$20,730,000	
			3%	Preliminary Engineering:	$620,000	
			10%	Design:	$2,070,000	
				SOLUTION TOTAL:	$23,420,000	
27	**San Antonio Mobility Improvements (Rural)**					
	Widen NB mainline to add one lane from SH 1604 to I-410	9	Mile	$2,167,200	$19,504,800	Asphalt
	Widen SB mainline to add one lane from SH 1604 to I-410	9	Mile	$2,167,200	$19,504,800	Asphalt
	Widen bridge to accommodate additional lanes (both directions) Loop 1604	6504	SF	$280	$1,821,100	Medium Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) San Antonio River	31848	SF	$360	$11,465,300	Long Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) Southton Road	3288	SF	$280	$920,600	Medium Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) Southern Pacific Railroad	4320	SF	$280	$1,209,600	Medium Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) Spur 122	6240	SF	$280	$1,747,200	Medium Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) Salado Creek	17112	SF	$360	$6,160,300	Long Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) Old Corpus Christi Highway	4896	SF	$280	$1,370,900	Medium Bridge, assumed 24' widening
	Widen bridge to accommodate additional lanes (both directions) IH-410	6240	SF	$280	$1,747,200	Medium Bridge, assumed 24' widening
				SOLUTION SUBTOTAL:	$65,450,000	
			3%	Preliminary Engineering:	$1,960,000	
			10%	Design:	$6,550,000	
				SOLUTION TOTAL:	$73,960,000	

SOLUTION NO.	SOLUTION	QUANTITY	UNIT	LOADED UNIT COST	TOTAL CONSTRUCTION COST	NOTES
28	**Southton Road Interchange Improvement (Rural)**					
	OPTION A: Construct minor intersection improvements (additonal turn lanes on some approaches, striping, signing, signalization or signal upgrades; no new through lanes)	2	Each	$395,600	$791,200	
	Additional ROW	7200	SF	$5	$36,000	
				SOLUTION SUBTOTAL:	$830,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$930,000	
29	**San Antonio Frontage Roads (Rural)**					
	Construct northbound frontage roads	3.5	Mile	$1,480,900	$5,183,200	
	Construct southbound frontage roads	3.5	Mile	$1,480,900	$5,183,200	
	Construct SB exit ramp & NB entrance ramp at MP 127.5	2	Each	$904,700	$1,809,400	
	Construct frontage road bridges (NB and SB) (MP 130.5)	15200	SF	$200	$3,040,000	Long Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
	Construct frontage road bridges (NB and SB) (MP 133)	57000	SF	$200	$11,400,000	Long Bridge, assumed two 38' wide bridges (4' shoulder, two 12' lanes, 10' shoulder per frontage road)
				SOLUTION SUBTOTAL:	$26,620,000	
			3%	Preliminary Engineering:	$800,000	
			10%	Design:	$2,660,000	
				SOLUTION TOTAL:	$30,080,000	
30	**Spur 122 Interchange Improvement (Rural)**					
	Construct minor intersection improvements (additonal turn lanes on some approaches, striping, signing, signalization or signal upgrade; no new through lanes)	2	Each	$395,600	$791,200	
	Additional ROW	7200	SF	$5	$36,000	
				SOLUTION SUBTOTAL:	$830,000	
			3%	Preliminary Engineering:	$20,000	
			10%	Design:	$80,000	
				SOLUTION TOTAL:	$930,000	

APPENDIX J

PERFORMANCE AREA RISK FACTORS

Pavement Performance Area

- Climate
- Mainline Daily Traffic Volume
- Mainline Daily Truck Volume
- Interrupted Flow

Climate

Score based on annual precipitation, average low temperature in January, and proximity to coastal areas

Score	Condition
0	Low avg. annual rainfall (< 30”), high avg. January temp. (>45 degrees), and more than 100 miles from coast
0-5	Different combinations of the three criteria will generate scores between 0 and 5
5	High avg. annual rainfall (> 40’), low avg. January temp (< 32 degrees), and within 100 miles of coast

Mainline Daily Traffic Volume

Exponential equation; score = $5-(5*e^{(ADT*-0.000039)})$

Score	Condition
0-5	0 – 160,000
5	>160,000

Mainline Daily Truck Volume

Exponential equation; score = $5-(5*e^{(ADT*-0.00025)})$

Score	Condition
0-5	0 - 25,000
5	>25,000

Interrupted Flow

Score	Condition
0	Not interrupted flow
2.5	Interrupted Flow

Bridge Performance Area

- Mainline Daily Traffic Volume
- Detour Length
- Climate
- Scour Critical Rating
- Carries Mainline Traffic
- Vertical Clearance

Mainline Daily Traffic Volume

Exponential equation; score = $5-(5*e^{(ADT*-0.000039)})$

Score	Condition
0-5	0 - 160,000
5	>160,000

Climate

Score based on annual precipitation, average low temperature in January, and proximity to coastal areas

Score	Condition
0	Low avg. annual rainfall (< 30”), high avg. January temp. (>45 degrees), and more than 100 miles from coast
0-5	Different combinations of the three criteria will generate scores between 0 and 5
5	High avg. annual rainfall (> 40’), low avg. January temp (< 32 degrees), and within 100 miles of coast

Carries Mainline Traffic

Score	Condition
0	Does not carry mainline traffic
2.5	Carries mainline traffic

Detour Length

Divides detour length by 10 and multiplies by 2.5

Score	Condition
0	0 miles
0-5	0-20 miles
5	> 20 miles

Scour Critical Rating

Variance below 8

Score	Condition
0	Rating > 8
0-5	Rating 8 - 3
5	Rating < 3

Vertical Clearance

Variance below 16’ x 2.5; (16 –Clearance) x 2.5

Score	Condition
0	>16’
0-5	16’-14’
5	<14’

Mobility Performance Area

- Mainline VMT
- Buffer Index (PTI-TTI)
- Detour Length
- Outside Shoulder Width
- Growth Rate

Mainline VMT

Exponential equation; score = $5-(5*e^{(ADT*-0.0000139)})$

Score	Condition
0-5	0 - 400,000
5	>400,000

Buffer Index

Buffer Index x 10

Score	Condition
0	Buffer Index = 0.00
0-5	Buffer Index 0.00-0.50
5	Buffer Index > 0.50

Detour Length

Score	Condition
0	Detour < 10 miles
2.5	Detour > 10 miles

Outside Shoulder Width

Variance below 10', if only 1 lane in each direction

Score	Condition
0	10' or above or >1 lane in each direction
0-5	10'-5' and 1 lane in each direction
5	5' or less and 1 lane in each direction

Growth Rate

Score	Condition
0-5	Annual growth rate 0 - 5%
5	Annual growth rate >5%

Safety Performance Area

- Mainline VMT
- Conflict Points
- Climate
- Outside Shoulder Width
- Terrain Type
- Median Type

Mainline Daily VMT

Exponential equation; score = $5-(5*e^{(ADT*-0.0000139)})$

Score	Condition
0-5	0 - 400,000
5	>400,000

Conflict Points

Score	Condition
1	Access controlled with ramp spacing > 5 miles
2	Access controlled with ramp spacing 2 - 5 miles
4	Access controlled with ramp spacing < 2 miles
1.5	Non access controlled with < 10 access points per mile (both sides)
2.5	Non access controlled with 10 – 20 access points per mile (both sides)
5	Non access controlled with > 20 access points per mile (both sides)

Climate

Score based on annual precipitation, average low temperature in January, and proximity to coastal areas

Score	Condition
0	Low avg. annual rainfall (< 30"), high avg. Jan. temp. (>45 degrees), and more than 100 miles from coast
0-5	Different combinations of the three criteria will generate scores between 0 and 5
5	High avg. annual rainfall (> 40'), low avg. Jan. temp (< 32 degrees), and within 100 miles of coast

Outside Shoulder Width

Variance below 10'

Score	Condition
0	10' or above
0-5	10' - 5'
5	5' or less

Terrain Type

Score	Condition
1	Level
2.5	Rolling
5	Mountainous

Median Type

Score	Condition
1	Divided - Open
2	Divided - Raised
4	Divided - Flush
5	Non-Divided

Freight Performance Area

- Mainline Daily Truck Volume
- Detour Length
- Outside Shoulder Width

Mainline Daily Truck Volume

Exponential equation; score = $5-(5*e^{(ADT*-0.00025)})$

Score	Condition
0-5	0 - 25,000
5	>25,000

Detour Length

Score	Condition
0	Detour < 10 miles
2.5	Detour > 10 miles

Outside Shoulder Width

Variance below 10', if only 1 lane in each direction

Score	Condition
0	10' or above or >1 lane in each direction
0-5	10'-5' and 1 lane in each direction
5	5' or less and 1 lane in each direction

Corridor-Wide Performance Area

Frontage Roads:

Distance to Parallel Route

Score	Condition
0	Existing parallel route < 0.25 miles away
0-5	Existing parallel route e 0.25 – 5 miles away
5	Existing parallel route > 5 miles away

Route Continuity

Score	Condition
0	Does not extend existing frontage road
2.5	Extends/continues existing frontage road

Adjacent Land Uses

Score	Condition
0	No existing land uses that would use new frontage road
1.5	Minimal level of existing land uses that would use new frontage road
3	Moderate level of existing land uses that would use new frontage road
5	High level of existing land uses that would use new frontage road

Access Control Breaks:

Adjacent Land Uses

Score	Condition
0	No existing land uses that would use new ramps
1.5	Minimal level of existing land uses that would use new ramps
3	Moderate level of existing land uses that would use new ramps
5	High level of existing land uses that would use new ramps

Interchange Spacing

Score	Condition
0	Existing interchange < 0.25 miles away
0-5	Existing interchange 0.25 – 5 miles away
5	Existing interchange > 5 miles away

Corridor-Wide Performance Area

Floodplains:

Evacuation Route

Score	Condition
0	Is not a hurricane evacuation route
2.5	Is a hurricane evacuation route

Floodplain Depth

Score	Condition
0	Max. depth < 1’
0-5	Max. depth 1’ – 4’
5	Max. depth > 4’

Solution Number	Seg. No.	Mainline Traffic Vol (vpd) (2-way)	Traffic Annual Growth Rate (%)	Conflict Points	Solution Length (miles)	Bridge Detour Length (miles) (N19)	Climate (see table below)	Scour Critical Rating (0-9)	Carries Mainline Traffic (Y/N)	Bridge Vert. Clear (ft)	Mainline Truck Vol (vpd) (2-way)	Detour Length > 10 miles (Y/N)	Median Type	Non-Truck Buffer Index	Terrain Type	Interrupted Flow (Y/N)	Outside/ Right Shoulder Width (ft)	1-lane each dir. (Y/N)
1	1	51,400	2.7	Access-Controlled with ramp spacing < 2 miles	4	5	2.50	8	Y	16.00	8,738	N	Divided-Raised	0.19	Level		10	N
2	2	25,800	2.7	Access-Controlled with ramp spacing 2-5 miles	13		2.50				5,160	N	Divided-Open	0.13	Level		10	N
3	3	25,100	2.7	Access-Controlled with ramp spacing 2-5 miles	3		2.50				5,271	N	Divided-Open	0.13	Level		10	N
4	5	18,200	3.0	Access-Controlled with ramp spacing 2-5 miles	9		3.34				4,368	N	Divided-Open	0.12	Level		10	N
5	5	6,876	3.0	Non Access Controlled with 10-20 access pts per mile (both sides)	1		3.34				1,539	N	Divided-Open	0.13	Level		10	N
6	5	18,200	3.0	Access-Controlled with ramp spacing 2-5 miles	4		3.34				4,488	N	Divided-Open	0.13	Level		10	N
7	7	28,000	3.0	Access-Controlled with ramp spacing 2-5 miles	0.5		2.50				7,000	N	Divided-Open	0.1	Level		10	N
8	7	28,000	3.0	Access-Controlled with ramp spacing 2-5 miles	1		2.50				7,000	N	Divided-Open	0.1	Level		10	N
9	8	22,700				1	2.50	8	N	15.13	6,356	N					10	N
10	8	22,700	3.0	Access-Controlled with ramp spacing 2-5 miles	1		2.50				6,356	N	Divided-Open	0.11	Level		10	N
11	8	22,700	3.0	Non Access Controlled with < 10 access pts per mile (both sides)	7	1	2.50	8	N	16.00	6,356	N	Non-Divided	0.11	Level	Y	4	Y
12	9	26,900	3.0	Access-Controlled with ramp spacing > 5 miles	7		1.68				6,994	N	Divided-Open	0.11	Level		10	N
13	10	27,800	3.0	Access-Controlled with ramp spacing 2-5 miles	1		1.68				6,950	N	Divided-Open	0.1	Level		10	N
14	11	680				3	1.68	8	N	16.24	140	N					2	Y
15	11	24,900				3	1.68	8	N	16.24	6,723	N					10	N
16	11	24,900				6	1.68	8	N	15.90	6,723	N					10	N
17	11	1,500	3.0	Non Access Controlled with < 10 access pts per mile (both sides)	7	1	1.68	8	N	16.00	150	N	Non-Divided	0.13	Level	Y	4	Y
18	12	33,500	3.2	Access-Controlled with ramp spacing 2-5 miles	9		1.68				7,705	N	Divided-Open	0.13	Level		10	N
19	12	14,361	3.2	Non Access Controlled with 10-20 access pts per mile (both sides)	1		1.68				3,159	N	Divided-Open	0.13	Level		10	N
20	12	2,148	3.2	Non Access Controlled with < 10 access pts per mile	1		1.68				407	N	Non-Divided	0.13	Level		4	Y

Solution Number	Seg. No.	Mainline Traffic Vol (vpd) (2-way)	Traffic Annual Growth Rate (%)	Conflict Points	Solution Length (miles)	Bridge Detour Length (miles) (N19)	Climate (see table below)	Scour Critical Rating (0-9)	Carries Mainline Traffic (Y/N)	Bridge Vert. Clear (ft)	Mainline Truck Vol (vpd) (2-way)	Detour Length > 10 miles (Y/N)	Median Type	Non-Truck Buffer Index	Terrain Type	Interrupted Flow (Y/N)	Outside/ Right Shoulder Width (ft)	1-lane each dir. (Y/N)
				(both sides)														
21	12	2,458	3.2	Non Access Controlled with < 10 access pts per mile (both sides)	0.5		1.68				323	N	Non-Divided	0.13	Level		10	Y
22	12	600	3.2	Non Access Controlled with < 10 access pts per mile (both sides)	8		1.68				60	N	Non-Divided	0.13	Level	Y	4	Y
23	13	37,700	3.2	Access-Controlled with ramp spacing 2-5 miles	7		1.68				8,294	N	Divided-Open	0.11	Level		10	N
24	13	37,700	3.2	Access-Controlled with ramp spacing 2-5 miles	7		1.68				8,294	N	Divided-Open	0.11	Level		10	N
25	13	2,536	3.2	Non Access Controlled with 10-20 access pts per mile (both sides)	0.8		1.68				0	N	Non-Divided	0.11	Level		4	Y
26	13	37,700	3.2	Non Access Controlled with < 10 access pts per mile (both sides)	7		1.68				8,294	N	Non-Divided	0.11	Level	Y	4	Y
27	14	53,300	3.2	Access-Controlled with ramp spacing 2-5 miles	9	1	1.68	8	Y	14.42	8,528	N	Divided-Open	0.17	Level		10	N
28	14	3,113	3.2	Non Access Controlled with < 10 access pts per mile (both sides)	1		1.68				186	N	Non-Divided	0.17	Level		4	Y
29	14	3,700	3.2	Access-Controlled with ramp spacing 2-5 miles	1	1	1.68	8	N	16.00	200	N	Divided-Open	0.17	Level	Y	10	N
30	14	3,871	3.2	Non Access Controlled with < 10 access pts per mile (both sides)	0.6		1.68				662	N	Non-Divided	0.17	Level		10	Y

Solution Number	Bridge	Pavement	Mobility	Safety	Freight	Risk Score (0 to 10)				
						Bridge	Pavement	Mobility	Safety	Freight
1	y	0	y	y	y	4.30	0.00	3.36	4.74	3.56
2	0	0	y	y	y	0.00	0.00	3.45	3.82	2.91
3	0	0	y	y	y	0.00	0.00	2.69	3.25	2.94
4	0	0	y	y	y	0.00	0.00	3.36	3.94	2.67
5	0	0	y	y	y	0.00	0.00	1.58	2.77	1.28
6	0	0	y	y	y	0.00	0.00	2.79	3.51	2.71
7	0	0	y	y	y	0.00	0.00	1.76	2.46	3.31
8	0	0	y	y	y	0.00	0.00	2.08	2.70	3.31
9	y	0	0	0	y	2.94	0.00	0.00	0.00	3.19
10	0	0	y	y	y	0.00	0.00	1.97	2.62	3.19
11	y	y	y	y	y	2.15	6.80	5.57	6.48	7.19
12	0	0	y	y	y	0.00	0.00	3.43	3.10	3.31
13	0	0	y	y	y	0.00	0.00	2.07	2.43	3.30
14	y	0	0	0	y	1.20	0.00	0.00	0.00	4.14
15	y	0	0	0	y	2.28	0.00	0.00	0.00	3.26
16	y	0	0	0	y	2.92	0.00	0.00	0.00	3.26
17	y	y	y	y	y	0.90	2.66	3.90	4.95	4.15
18	0	0	y	y	y	0.00	0.00	3.66	3.53	3.42
19	0	0	y	y	y	0.00	0.00	1.88	2.36	2.19
20	0	0	y	y	y	0.00	0.00	3.76	4.78	4.39
21	0	0	y	y	y	0.00	0.00	1.51	3.09	0.31
22	0	y	y	y	y	0.00	2.50	3.84	4.83	4.06
23	0	0	y	y	y	0.00	0.00	3.63	3.52	3.50
24	0	0	y	y	y	0.00	0.00	3.63	3.52	3.50
25	0	0	y	y	y	0.00	0.00	3.75	5.11	4.00
26	0	y	y	y	y	0.00	7.08	5.86	6.35	7.50
27	y	0	y	y	y	4.73	0.00	3.71	3.56	3.53
28	0	0	y	y	y	0.00	0.00	3.80	4.80	4.18
29	y	y	y	y	y	1.03	2.91	1.59	1.98	0.20
30	0	0	y	y	y	0.00	0.00	1.55	3.11	0.61

APPENDIX K

PERFORMANCE SCORING

Performance Effectiveness Scoring

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Segment-Level Benefit																							
				Pavement						Bridge						Safety						Mobility					
				Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score
1	Corpus Mobility	14-18	188.3	0.030	0.030	0.000	1.00	0.00	0.00	1.750	0.260	1.490	1.00	4.30	6.41	2.291	1.714	0.577	1.50	4.74	4.10	1.620	0.233	1.387	1.50	3.36	6.99
2	Corpus Access	25-29	8.2	0.520	0.520	0.000	1.00	0.00	0.00	1.270	1.270	0.000	1.00	0.00	0.00	1.930	1.930	0.000	1.50	0.00	0.00	0.730	0.730	0.000	1.50	0.00	0.00
3	Mathis Safety	31-34	12.7	0.680	0.680	0.000	1.00	0.00	0.00	0.000	0.000	0.000	1.00	0.00	0.00	3.670	1.140	2.530	1.50	3.25	12.33	0.451	0.451	0.000	1.50	2.69	0.00
4	George West Safety	48-57	18.1	0.030	0.030	0.000	1.00	0.00	0.00	0.760	0.760	0.000	1.00	0.00	0.00	3.110	0.930	2.180	1.50	3.94	12.88	1.408	1.408	0.000	1.50	3.36	0.00
5	US 59 TI	56.5	1.7	0.030	0.030	0.000	1.00	0.00	0.00	0.760	0.760	0.000	1.00	0.00	0.00	3.110	2.820	0.290	1.50	2.77	1.20	1.408	0.368	1.040	1.50	1.58	2.46
6	George West Lighting	48-57	1.8	0.030	0.030	0.000	1.00	0.00	0.00	0.760	0.760	0.000	1.00	0.00	0.00	3.110	3.010	0.100	1.50	3.51	0.53	1.408	1.408	0.000	1.50	2.79	0.00
7	Three Rivers Mobility	73-73.5	0.9	0.940	0.940	0.000	1.00	0.00	0.00	0.230	0.230	0.000	1.00	0.00	0.00	0.298	0.297	0.001	1.50	2.46	0.00	0.850	0.350	0.500	1.50	1.76	1.32
8	Three River Access	80-81	4.1	0.940	0.940	0.000	1.00	0.00	0.00	0.230	0.230	0.000	1.00	0.00	0.00	0.298	0.298	0.000	1.50	2.70	0.00	0.850	0.850	0.000	1.50	2.08	0.00
9	FM 791 Freight	90.4	2.3	0.000	0.000	0.000	1.00	0.00	0.00	0.730	0.050	0.680	1.00	2.94	2.00	1.300	1.300	0.000	1.50	0.00	0.00	0.636	0.636	0.000	1.50	0.00	0.00
10	Cambellton Access	90-91	4.1	0.000	0.000	0.000	1.00	0.00	0.00	0.730	0.730	0.000	1.00	0.00	0.00	1.300	1.330	-0.030	1.50	2.62	-0.12	0.636	0.636	0.000	1.50	1.97	0.00
11	Cambellton Frontage Rds	84-91	63.1	0.000	0.000	0.000	1.00	0.00	0.00	0.730	0.300	0.430	1.00	2.15	0.92	1.300	1.300	0.000	1.50	6.48	0.00	0.636	0.636	0.000	1.50	5.57	0.00
12	Cambellton Safety	91-98	7.2	0.710	0.710	0.000	1.00	0.00	0.00	0.630	0.630	0.000	1.00	0.00	0.00	3.800	1.140	2.660	1.50	3.10	12.37	0.600	0.600	0.000	1.50	3.43	0.00
13	Pullin Dr Access	101.5-102.5	2.0	0.830	0.830	0.000	1.00	0.00	0.00	0.000	0.000	0.000	1.00	0.00	0.00	0.232	0.234	-0.002	1.50	2.43	-0.01	0.740	0.740	0.000	1.50	2.07	0.00
15	Coughran Rd Freight	106.4	2.0	0.140	0.140	0.000	1.00	0.00	0.00	1.650	1.410	0.240	1.00	2.28	0.55	0.060	0.060	0.000	1.50	0.00	0.00	0.370	0.370	0.000	1.50	0.00	0.00
16	SH 97 Freight	109.8	5.1	0.140	0.140	0.000	1.00	0.00	0.00	1.650	1.280	0.370	1.00	2.92	1.08	0.060	0.060	0.000	1.50	0.00	0.00	0.370	0.370	0.000	1.50	0.00	0.00
17	South Pleasanton Frontage Rds	103-110	51.1	0.140	0.040	0.100	1.00	2.66	0.27	1.650	0.430	1.220	1.00	1.92	2.34	0.056	0.060	-0.004	1.50	6.25	-0.04	0.370	0.370	0.000	1.50	5.62	0.00
18	Pleasanton Mobility	109-118	42.2	0.120	0.120	0.000	1.00	0.00	0.00	0.810	0.810	0.000	1.00	0.00	0.00	0.220	0.200	0.020	1.50	3.53	0.11	2.950	1.108	1.842	1.50	3.66	10.11
19	SH 97 TI	109.8	1.7	0.120	0.120	0.000	1.00	0.00	0.00	0.810	0.810	0.000	1.00	0.00	0.00	0.220	0.146	0.074	1.50	2.36	0.26	2.950	2.507	0.443	1.50	1.88	1.25
20	FM 536 TI	117.6	0.9	0.120	0.120	0.000	1.00	0.00	0.00	0.810	0.810	0.000	1.00	0.00	0.00	0.220	0.207	0.013	1.50	4.78	0.09	2.950	2.507	0.443	1.50	3.76	2.50
21	Verdi TI	114	0.9	0.120	0.120	0.000	1.00	0.00	0.00	0.810	0.810	0.000	1.00	0.00	0.00	0.220	0.213	0.007	1.50	3.09	0.03	2.950	2.499	0.451	1.50	1.51	1.02
22	North Pleasanton Frontage Rds	110-118	26.8	0.120	0.040	0.080	1.00	2.50	0.20	0.810	0.810	0.000	1.00	0.00	0.00	0.220	0.221	-0.001	1.50	6.35	-0.01	2.950	2.950	0.000	1.50	0.00	0.00
23	Floresville Safety	117-125	5.6	0.000	0.000	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.500	0.375	0.125	1.50	3.52	0.66	3.880	3.880	0.000	1.50	0.00	0.00
24	Floresville Mobility	118-125	34.3	0.000	0.000	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.500	0.450	0.050	1.50	3.52	0.26	3.880	1.500	2.380	1.50	3.63	12.96
25	Mathis Rd TI	122.7	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.500	0.500	0.000	1.50	5.11	0.00	3.880	3.109	0.771	1.50	3.75	4.34
26	Floresville Frontage Rd	118-125	23.4	0.000	0.000	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.500	0.500	0.000	1.50	6.35	0.00	3.880	3.880	0.000	1.50	0.00	0.00
27	San Antonio Mobility	125-134	74.0	0.350	0.350	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	4.73	0.00	0.140	0.070	0.070	1.50	3.56	0.37	6.660	3.698	2.962	1.50	3.71	16.48
28	Southton Rd TI	130	0.9	0.350	0.350	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.136	0.135	0.001	1.50	4.80	0.01	6.660	6.350	0.310	1.50	3.80	1.77
29	San Antonio Frontage Rds	130-133.5	30.1	0.350	0.196	0.154	1.00	2.91	0.45	0.600	0.210	0.390	1.00	2.38	0.93	0.136	0.138	-0.002	1.50	2.76	-0.01	6.660	6.660	0.000	1.50	0.00	0.00
30	Spur 122 TI	132.6	0.9	0.350	0.350	0.000	1.00	0.00	0.00	0.600	0.600	0.000	1.00	0.00	0.00	0.136	0.135	0.001	1.50	3.11	0.00	6.660	6.290	0.370	1.50	1.55	0.86

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Segment-Level Benefit											
				Freight						Corridor-Wide					
				Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Segment Need	Post-Solution Segment Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score
1	Corpus Mobility	14-18	188.3	0.700	0.620	0.080	1.50	3.56	0.28	5.860	0.701	5.159	1.00	7.50	38.69
2	Corpus Access	25-29	8.2	0.550	0.550	0.000	1.50	0.00	0.00	1.690	0.942	0.748	1.00	5.00	3.74
3	Mathis Safety	31-34	12.7	0.000	0.000	0.000	1.50	2.94	0.00	0.360	0.360	0.000	1.00	0.00	0.00
4	George West Safety	48-57	18.1	0.573	0.298	0.275	1.50	2.67	0.73	0.570	0.570	0.000	1.00	0.00	0.00
5	US 59 TI	56.5	1.7	0.573	0.573	0.000	1.50	0.00	0.00	0.570	0.570	0.000	1.00	0.00	0.00
6	George West Lighting	48-57	1.8	0.573	0.551	0.022	1.50	2.71	0.06	0.570	0.570	0.000	1.00	0.00	0.00
7	Three Rivers Mobility	73-73.5	0.9	0.150	0.150	0.000	1.50	3.31	0.00	3.820	3.820	0.000	1.00	0.00	0.00
8	Three River Access	80-81	4.1	0.150	0.150	0.000	1.50	3.31	0.00	3.820	2.995	0.825	1.00	3.00	2.48
9	FM 791 Freight	90.4	2.3	0.923	0.620	0.303	1.50	3.19	0.97	4.580	4.580	0.000	1.00	0.00	0.00
10	Cambellton Access	90-91	4.1	0.923	0.923	0.000	1.50	3.19	0.00	4.580	2.574	2.006	1.00	6.00	12.04
11	Cambellton Frontage Rds	84-91	63.1	0.923	0.923	0.000	1.50	0.00	0.00	4.580	3.942	0.638	1.00	3.25	2.07
12	Cambellton Safety	91-98	7.2	0.000	0.000	0.000	1.50	0.00	0.00	0.550	0.550	0.000	1.00	0.00	0.00
13	Pullin Dr Access	101.5-102.5	2.0	0.000	0.000	0.000	1.50	0.00	0.00	3.350	2.602	0.748	1.00	6.00	4.49
15	Coughran Rd Freight	106.4	2.0	0.552	0.050	0.502	1.50	3.26	1.64	2.130	2.130	0.000	1.00	0.00	0.00
16	SH 97 Freight	109.8	5.1	0.552	0.200	0.352	1.50	3.26	1.15	2.130	2.130	0.000	1.00	0.00	0.00
17	South Pleasanton Frontage Rds	103-110	51.1	0.552	0.552	0.000	1.50	0.00	0.00	2.130	1.477	0.653	1.00	2.50	1.63
18	Pleasanton Mobility	109-118	42.2	0.000	0.000	0.000	1.50	0.00	0.00	1.930	1.798	0.132	1.00	3.66	0.48
19	SH 97 TI	109.8	1.7	0.000	0.000	0.000	1.50	0.00	0.00	1.930	1.930	0.000	1.00	0.00	0.00
20	FM 536 TI	117.6	0.9	0.000	0.000	0.000	1.50	0.00	0.00	1.930	1.930	0.000	1.00	0.00	0.00
21	Verdi TI	114	0.9	0.000	0.000	0.000	1.50	0.00	0.00	1.930	1.930	0.000	1.00	0.00	0.00
22	North Pleasanton Frontage Rds	110-118	26.8	0.000	0.000	0.000	1.50	0.00	0.00	1.930	1.102	0.828	1.00	3.00	2.48
23	Floresville Safety	117-125	5.6	0.327	0.202	0.125	1.50	3.50	0.44	2.230	2.230	0.000	1.00	0.00	0.00
24	Floresville Mobility	118-125	34.3	0.327	0.202	0.125	1.50	3.50	0.44	2.230	2.098	0.132	1.00	3.63	0.48
25	Mathis Rd TI	122.7	0.9	0.327	0.327	0.000	1.50	0.00	0.00	2.230	2.230	0.000	1.00	0.00	0.00
26	Floresville Frontage Rd	118-125	23.4	0.327	0.327	0.000	1.50	0.00	0.00	2.230	0.967	1.263	1.00	1.67	2.11
27	San Antonio Mobility	125-134	74.0	0.900	0.848	0.052	1.50	3.53	0.18	1.610	1.480	0.130	1.00	3.71	0.48
28	Southton Rd T	130	0.9	0.900	0.900	0.000	1.50	0.00	0.00	1.610	1.610	0.000	1.00	0.00	0.00
29	San Antonio Frontage Rds	130-133.5	30.1	0.900	0.900	0.000	1.50	0.00	0.00	1.610	1.477	0.133	1.00	3.83	0.51
30	Spur 122 TI	132.6	0.9	0.900	0.900	0.000	1.50	0.00	0.00	1.610	1.610	0.000	1.00	0.00	0.00

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Corridor-Level Benefit																	
				Pavement						Bridge						Safety					
				Existing Corridor Need	Post-Solution Corridor Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Corridor Need	Post-Solution Corridor Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Corridor Need	Post-Solution Corridor Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score
1	Corpus Mobility	14-18	188.3	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.482	0.037	1.00	4.30	0.16	1.188	1.176	0.012	1.50	4.74	0.09
2	Corpus Access	25-29	8.2	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	0.00	0.00
3	Mathis Safety	31-34	12.7	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.133	0.055	1.50	3.25	0.27
4	George West Safety	48-57	18.1	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.077	0.111	1.50	3.94	0.66
5	US 59 TI	56.5	1.7	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	2.77	0.00
6	George West Lighting	48-57	1.8	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.182	0.006	1.50	3.51	0.03
7	Three Rivers Mobility	73-73.5	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	2.46	0.00
8	Three River Access	80-81	4.1	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	2.70	0.00
9	FM 791 Freight	90.4	2.3	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.492	0.027	1.00	2.94	0.08	1.188	1.188	0.000	1.50	0.00	0.00
10	Cambellton Access	90-91	4.1	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.190	-0.002	1.50	2.62	-0.01
11	Cambellton Frontage Rds	84-91	63.1	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.441	0.078	1.00	2.15	0.17	1.188	1.188	0.000	1.50	6.48	0.00
12	Cambellton Safety	91-98	7.2	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.044	0.144	1.50	3.10	0.67
13	Pullin Dr Access	101.5-102.5	2.0	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	2.43	0.00
15	Coughran Rd Freight	106.4	2.0	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.505	0.014	1.00	2.28	0.03	1.188	1.188	0.000	1.50	0.00	0.00
16	SH 97 Freight	109.8	5.1	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.497	0.022	1.00	2.92	0.06	1.188	1.188	0.000	1.50	0.00	0.00
17	South Pleasanton Frontage Rds	103-110	51.1	0.000	0.000	0.000	1.00	2.66	0.00	0.519	0.449	0.070	1.00	1.92	0.13	1.188	1.188	0.000	1.50	6.25	0.00
18	Pleasanton Mobility	109-118	42.2	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.178	0.010	1.50	3.53	0.05
19	SH 97 TI	109.8	1.7	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.180	0.008	1.50	2.36	0.03
20	FM 536 TI	117.6	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.182	0.006	1.50	4.78	0.04
21	Verdi TI	114	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	3.09	0.00
22	North Pleasanton Frontage Rds	110-118	26.8	0.000	0.000	0.000	1.00	2.50	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.189	-0.001	1.50	6.35	-0.01
23	Floresville Safety	117-125	5.6	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	3.52	0.00
24	Floresville Mobility	118-125	34.3	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	3.52	0.00
25	Mathis Rd TI	122.7	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	5.11	0.00
26	Floresville Frontage Rd	118-125	23.4	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	6.35	0.00
27	San Antonio Mobility	125-134	74.0	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	4.73	0.00	1.188	1.171	0.017	1.50	3.56	0.09
28	Southton Rd TI	130	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	4.80	0.00
29	San Antonio Frontage Rds	130-133.5	30.1	0.000	0.000	0.000	1.00	2.91	0.00	0.519	0.489	0.030	1.00	2.38	0.07	1.188	1.188	0.000	1.50	2.76	0.00
30	Spur 122 TI	132.6	0.9	0.000	0.000	0.000	1.00	0.00	0.00	0.519	0.519	0.000	1.00	0.00	0.00	1.188	1.188	0.000	1.50	3.11	0.00

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Corridor-Level Benefit											
				Mobility						Freight					
				Existing Corridor Need	Post-Solution Corridor Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score	Existing Corridor Need	Post-Solution Corridor Need	Raw Score	Emphasis Factor	Risk Factor	Factored Score
1	Corpus Mobility	14-18	188.3	0.746	0.717	0.029	1.50	3.36	0.15	0.599	0.597	0.002	1.50	3.56	0.01
2	Corpus Access	25-29	8.2	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	0.00	0.00
3	Mathis Safety	31-34	12.7	0.746	0.746	0.000	1.50	2.69	0.00	0.599	0.599	0.000	1.50	2.94	0.00
4	George West Safety	48-57	18.1	0.746	0.746	0.000	1.50	3.36	0.00	0.599	0.564	0.035	1.50	2.67	0.14
5	US 59 TI	56.5	1.7	0.746	0.746	0.000	1.50	1.58	0.00	0.599	0.599	0.000	1.50	0.00	0.00
6	George West Lighting	48-57	1.8	0.746	0.746	0.000	1.50	2.79	0.00	0.599	0.597	0.002	1.50	2.71	0.01
7	Three Rivers Mobility	73-73.5	0.9	0.746	0.746	0.000	1.50	1.76	0.00	0.599	0.599	0.000	1.50	3.31	0.00
8	Three River Access	80-81	4.1	0.746	0.746	0.000	1.50	2.08	0.00	0.599	0.599	0.000	1.50	3.31	0.00
9	FM 791 Freight	90.4	2.3	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	3.19	0.00
10	Cambellton Access	90-91	4.1	0.746	0.746	0.000	1.50	1.97	0.00	0.599	0.599	0.000	1.50	3.19	0.00
11	Cambellton Frontage Rds	84-91	63.1	0.746	0.746	0.000	1.50	5.57	0.00	0.599	0.599	0.000	1.50	0.00	0.00
12	Cambellton Safety	91-98	7.2	0.746	0.746	0.000	1.50	3.43	0.00	0.599	0.599	0.000	1.50	0.00	0.00
13	Pullin Dr Access	101.5-102.5	2.0	0.746	0.746	0.000	1.50	2.07	0.00	0.599	0.599	0.000	1.50	0.00	0.00
15	Coughran Rd Freight	106.4	2.0	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	3.26	0.00
16	SH 97 Freight	109.8	5.1	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	3.26	0.00
17	South Pleasanton Frontage Rds	103-110	51.1	0.746	0.746	0.000	1.50	5.62	0.00	0.599	0.599	0.000	1.50	0.00	0.00
18	Pleasanton Mobility	109-118	42.2	0.746	0.632	0.114	1.50	3.66	0.63	0.599	0.599	0.000	1.50	0.00	0.00
19	SH 97 TI	109.8	1.7	0.746	0.746	0.000	1.50	1.88	0.00	0.599	0.599	0.000	1.50	0.00	0.00
20	FM 536 TI	117.6	0.9	0.746	0.746	0.000	1.50	3.76	0.00	0.599	0.599	0.000	1.50	0.00	0.00
21	Verdi TI	114	0.9	0.746	0.746	0.000	1.50	1.51	0.00	0.599	0.599	0.000	1.50	0.00	0.00
22	North Pleasanton Frontage Rds	110-118	26.8	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	0.00	0.00
23	Floresville Safety	117-125	5.6	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.587	0.012	1.50	3.50	0.06
24	Floresville Mobility	118-125	34.3	0.746	0.639	0.107	1.50	3.63	0.58	0.599	0.580	0.019	1.50	3.50	0.10
25	Mathis Rd TI	122.7	0.9	0.746	0.746	0.000	1.50	3.75	0.00	0.599	0.599	0.000	1.50	0.00	0.00
26	Floresville Frontage Rd	118-125	23.4	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	0.00	0.00
27	San Antonio Mobility	125-134	74.0	0.746	0.581	0.165	1.50	3.71	0.92	0.599	0.595	0.004	1.50	3.53	0.02
28	Southton Rd TI	130	0.9	0.746	0.746	0.000	1.50	3.80	0.00	0.599	0.599	0.000	1.50	0.00	0.00
29	San Antonio Frontage Rds	130-133.5	30.1	0.746	0.746	0.000	1.50	0.00	0.00	0.599	0.599	0.000	1.50	0.00	0.00
30	Spur 122 TI	132.6	0.9	0.746	0.746	0.000	1.50	1.55	0.00	0.599	0.599	0.000	1.50	0.00	0.00

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Total Factored Benefit	VMT Factor	NPV Factor	Performance Effectiveness Score
1	Corpus Mobility	14-18	188.3	56.88	4.71	20.2	28.8
2	Corpus Access	25-29	8.2	3.74	0.14	20.2	1.3
3	Mathis Safety	31-34	12.7	12.60	3.24	15.3	49.3
4	George West Safety	48-57	18.1	14.41	4.49	15.3	54.7
5	US 59 TI	56.5	1.7	3.67	0.46	20.2	19.9
6	George West Lighting	48-57	1.8	0.63	4.60	15.3	24.5
7	Three Rivers Mobility	73-73.5	0.9	1.32	0.88	20.2	26.3
8	Three River Access	80-81	4.1	2.48	0.07	20.2	0.8
9	FM 791 Freight	90.4	2.3	3.05	0.73	30.6	29.6
10	Cambellton Access	90-91	4.1	11.91	0.07	20.2	4.1
11	Cambellton Frontage Rds	84-91	63.1	3.17	0.88	20.2	0.9
12	Cambellton Safety	91-98	7.2	13.04	4.64	15.3	128.4
13	Pullin Dr Access	101.5-102.5	2.0	4.48	0.03	20.2	1.6
15	Coughran Rd Freight	106.4	2.0	2.22	0.79	30.6	26.9
16	SH 97 Freight	109.8	5.1	2.29	0.79	30.6	10.9
17	South Pleasanton Frontage Rds	103-110	51.1	4.34	0.88	20.2	1.5
18	Pleasanton Mobility	109-118	42.2	11.38	4.92	20.2	26.8
19	SH 97 TI	109.8	1.7	1.54	0.90	20.2	16.6
20	FM 536 TI	117.6	0.9	2.63	0.15	20.2	9.2
21	Verdi TI	114	0.9	1.05	0.17	20.2	4.2
22	North Pleasanton Frontage Rds	110-118	26.8	2.66	1.00	20.2	2.0
23	Floresville Safety	117-125	5.6	1.16	4.87	15.3	15.4
24	Floresville Mobility	118-125	34.3	14.82	4.87	20.2	42.5
25	Mathis Rd TI	122.7	0.9	4.34	0.17	20.2	17.8
26	Floresville Frontage Rd	118-125	23.4	2.11	0.88	20.2	1.6
27	San Antonio Mobility	125-134	74.0	18.55	4.99	20.2	25.3
28	Southton Rd TI	130	0.9	1.77	0.21	20.2	8.9
29	San Antonio Frontage Rds	130-133.5	30.1	1.95	0.46	20.2	0.6
30	Spur 122 TI	132.6	0.9	0.86	0.26	20.2	5.4

miles	2015 ADT	1-way or 2-way	VMT
4.00	51,400	2	205,600
1.00	2,000	2	2,000
3.00	25,100	2	75,300
9.00	18,200	2	163,800
1.00	6,876	2	6,876
10.00	18,200	2	182,000
0.50	28,000	2	14,000
0.50	2,000	2	1,000
0.50	22,700	2	11,350
0.50	2,000	2	1,000
7.00	2,000	2	14,000
7.00	26,900	2	188,300
0.50	2,000	1	500
0.50	24,900	2	12,450
0.50	24,900	2	12,450
7.00	2,000	2	14,000
9.00	33,500	2	301,500
1.00	14,361	2	14,361
1.00	2,148	2	2,148
1.00	2,458	2	2,458
8.00	2,000	2	16,000
7.00	37,700	2	263,900
7.00	37,700	2	263,900
1.00	2,536	2	2,536
7.00	2,000	2	14,000
9.00	53,300	2	479,700
1.00	3,113	2	3,113
3.50	2,000	2	7,000
1.00	3,871	2	3,871

Prioritization Scoring

Candidate Solution #	Candidate Solution Name	Milepost Location	Estimated Cost ($ millions)	Pavement		Bridge		Safety		Mobility		Freight		Corridor-Wide		Total Factored Score	Risk Factors						Weighted Risk Factor	Segment Need	Prioritization Score	Rank
				Score	%	Score	%	Score	%	Score	%	Score	%	Score	%		Pavement	Bridge	Safety	Mobility	Freight	Corridor-Wide				
1	Corpus Mobility	14-18	188.3	0.00	0.0%	6.57	11.5%	4.19	7.4%	7.14	12.5%	0.30	0.5%	38.69	68.0%	56.88	1.14	1.51	1.78	1.36	1.36	1.51	1.51	1.94	84	4
2	Corpus Access	25-29	8.2	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	3.74	100.0%	3.74	1.14	1.51	1.78	1.36	1.36	1.51	1.51	0.92	2	25
3	Mathis Safety	31-34	12.7	0.00	0.0%	0.00	0.0%	12.60	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	12.60	1.14	1.51	1.78	1.36	1.36	1.51	1.78	1.06	93	3
4	George West Safety	48-57	18.1	0.00	0.0%	0.00	0.0%	13.54	93.9%	0.00	0.0%	0.87	6.1%	0.00	0.0%	14.41	1.14	1.51	1.78	1.36	1.36	1.51	1.75	1.27	122	2
5	US 59 TI	56.5	1.7	0.00	0.0%	0.00	0.0%	1.20	32.8%	2.46	67.2%	0.00	0.0%	0.00	0.0%	3.67	1.14	1.51	1.78	1.36	1.36	1.51	1.50	1.27	38	9
6	George West Lighting	48-57	1.8	0.00	0.0%	0.00	0.0%	0.56	89.2%	0.00	0.0%	0.07	10.8%	0.00	0.0%	0.63	1.14	1.51	1.78	1.36	1.36	1.51	1.73	1.27	54	8
7	Three Rivers Mobility	73-73.5	0.9	0.00	0.0%	0.00	0.0%	0.00	0.3%	1.32	99.7%	0.00	0.0%	0.00	0.0%	1.32	1.14	1.51	1.78	1.36	1.36	1.51	1.36	0.93	33	11
8	Three River Access	80-81	4.1	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	2.48	100.0%	2.48	1.14	1.51	1.78	1.36	1.36	1.51	1.51	0.93	1	29
9	FM 791 Freight	90.4	2.3	0.00	0.0%	2.08	68.3%	0.00	0.0%	0.00	0.0%	0.97	31.7%	0.00	0.0%	3.05	1.14	1.51	1.78	1.36	1.36	1.51	1.46	1.29	56	7
10	Cambellton Access	90-91	4.1	0.00	0.0%	0.00	0.0%	-0.13	-1.1%	0.00	0.0%	0.00	0.0%	12.04	101.1%	11.91	1.14	1.51	1.78	1.36	1.36	1.51	1.51	1.29	8	20
11	Cambellton Frontage Rds	84-91	63.1	0.00	0.0%	1.09	34.5%	0.00	0.0%	0.00	0.0%	0.00	0.0%	2.07	65.5%	3.17	1.14	1.51	1.78	1.36	1.36	1.51	1.51	1.29	2	26
12	Cambellton Safety	91-98	7.2	0.00	0.0%	0.00	0.0%	13.04	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	13.04	1.14	1.51	1.78	1.36	1.36	1.51	1.78	1.13	258	1
13	Pullin Dr Access	101.5-102.5	2.0	0.00	0.0%	0.00	0.0%	-0.01	-0.2%	0.00	0.0%	0.00	0.0%	4.49	100.2%	4.48	1.14	1.51	1.78	1.36	1.36	1.51	1.51	0.75	2	24
15	Coughran Rd Freight	106.4	2.0	0.00	0.0%	0.58	26.1%	0.00	0.0%	0.00	0.0%	1.64	73.9%	0.00	0.0%	2.22	1.14	1.51	1.78	1.36	1.36	1.51	1.40	0.72	27	14
16	SH 97 Freight	109.8	5.1	0.00	0.0%	1.14	49.9%	0.00	0.0%	0.00	0.0%	1.15	50.1%	0.00	0.0%	2.29	1.14	1.51	1.78	1.36	1.36	1.51	1.43	0.72	11	19
17	South Pleasanton Frontage Rds	103-110	51.1	0.27	6.1%	2.48	57.1%	-0.04	-0.9%	0.00	0.0%	0.00	0.0%	1.63	37.6%	4.34	1.14	1.51	1.78	1.36	1.36	1.51	1.48	0.72	2	28
18	Pleasanton Mobility	109-118	42.2	0.00	0.0%	0.00	0.0%	0.16	1.4%	10.74	94.4%	0.00	0.0%	0.48	4.2%	11.38	1.14	1.51	1.78	1.36	1.36	1.51	1.37	1.02	38	10
19	SH 97 TI	109.8	1.7	0.00	0.0%	0.00	0.0%	0.29	18.9%	1.25	81.1%	0.00	0.0%	0.00	0.0%	1.54	1.14	1.51	1.78	1.36	1.36	1.51	1.44	1.02	24	15
20	FM 536 TI	117.6	0.9	0.00	0.0%	0.00	0.0%	0.14	5.2%	2.50	94.8%	0.00	0.0%	0.00	0.0%	2.63	1.14	1.51	1.78	1.36	1.36	1.51	1.38	1.02	13	18
21	Verdi TI	114	0.9	0.00	0.0%	0.00	0.0%	0.03	3.1%	1.02	96.9%	0.00	0.0%	0.00	0.0%	1.05	1.14	1.51	1.78	1.36	1.36	1.51	1.37	1.02	6	21
22	North Pleasanton Frontage Rds	110-118	26.8	0.20	7.5%	0.00	0.0%	-0.02	-0.7%	0.00	0.0%	0.00	0.0%	2.48	93.2%	2.66	1.14	1.51	1.78	1.36	1.36	1.51	1.48	1.02	3	23
23	Floresville Safety	117-125	5.6	0.00	0.0%	0.00	0.0%	0.66	56.9%	0.00	0.0%	0.50	43.1%	0.00	0.0%	1.16	1.14	1.51	1.78	1.36	1.36	1.51	1.60	1.32	33	12
24	Floresville Mobility	118-125	34.3	0.00	0.0%	0.00	0.0%	0.26	1.8%	13.54	91.4%	0.54	3.6%	0.48	3.2%	14.82	1.14	1.51	1.78	1.36	1.36	1.51	1.37	1.32	77	5
25	Mathis Rd TI	122.7	0.9	0.00	0.0%	0.00	0.0%	0.00	0.0%	4.34	100.0%	0.00	0.0%	0.00	0.0%	4.34	1.14	1.51	1.78	1.36	1.36	1.51	1.36	1.32	32	13
26	Floresville Frontage Rd	118-125	23.4	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	2.11	100.0%	2.11	1.14	1.51	1.78	1.36	1.36	1.51	1.51	1.32	3	22
27	San Antonio Mobility	125-134	74.0	0.00	0.0%	0.00	0.0%	0.46	2.5%	17.40	93.8%	0.20	1.1%	0.48	2.6%	18.55	1.14	1.51	1.78	1.36	1.36	1.51	1.37	1.88	65	6
28	Southton Rd TI	130	0.9	0.00	0.0%	0.00	0.0%	0.01	0.4%	1.77	99.6%	0.00	0.0%	0.00	0.0%	1.77	1.14	1.51	1.78	1.36	1.36	1.51	1.36	1.88	23	16
29	San Antonio Frontage Rds	130-133.5	30.1	0.45	23.0%	1.00	51.3%	-0.01	-0.4%	0.00	0.0%	0.00	0.0%	0.51	26.1%	1.95	1.14	1.51	1.78	1.36	1.36	1.51	1.42	1.88	2	27
30	Spur 122 TI	132.6	0.9	0.00	0.0%	0.00	0.0%	0.00	0.5%	0.86	99.5%	0.00	0.0%	0.00	0.0%	0.86	1.14	1.51	1.78	1.36	1.36	1.51	1.36	1.88	14	17