

2017 Land Use and Land Use Change Review

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**Land Use Workgroup Meeting
March 31, 2021**

Chesapeake Bay Program Land Use Classification (27 classes)

1. Water (3)

- 1.1 Lentic
 - 1.1.1 Estuary (tidal)
 - 1.1.2 Lakes & Ponds
- 1.2 Lotic
 - 1.2.1 Streams

2. Developed (8)

- 2.1 Impervious
 - 2.1.1 Roads
 - 2.1.2 Structures
 - 2.1.3 Other Impervious (Parking lots, driveways)
 - 2.1.4 Tree Canopy (TC) over Impervious
- 2.2 Pervious
 - 2.2.1 Turf Grass
 - 2.2.2 Bare Developed
 - 2.2.3 Suspended Succession (rights-of-way)
 - 2.2.4 Tree Canopy over Turf Grass

3. Forest (4)

- 3.1 Forest (≥ 1 acre, 240-ft width)
- 3.2 Tree Canopy in Agriculture
- 3.3 Harvested Forest (≤ 3 years)
- 3.4 Natural Succession (> 3 years)

4. Production (7)

- 4.1 Agriculture
 - 4.1.1 Cropland
 - 4.1.2 Pasture
 - 4.1.3 Orchard/vineyard
 - 4.1.4 Idle/Fallow
- 4.2 Solar fields
 - 4.2.1 Impervious
 - 4.2.2 Pervious
- 4.3 Extractive (active mines)

5. Wetlands and Water Margins (5)

- 5.1 Tidal
- 5.2 Riverine (Non-tidal)
 - 5.2.1 Headwater
 - 5.2.2 Floodplain
- 5.3 Terrene/Isolated (Non-tidal)
- 5.4 Bare shore

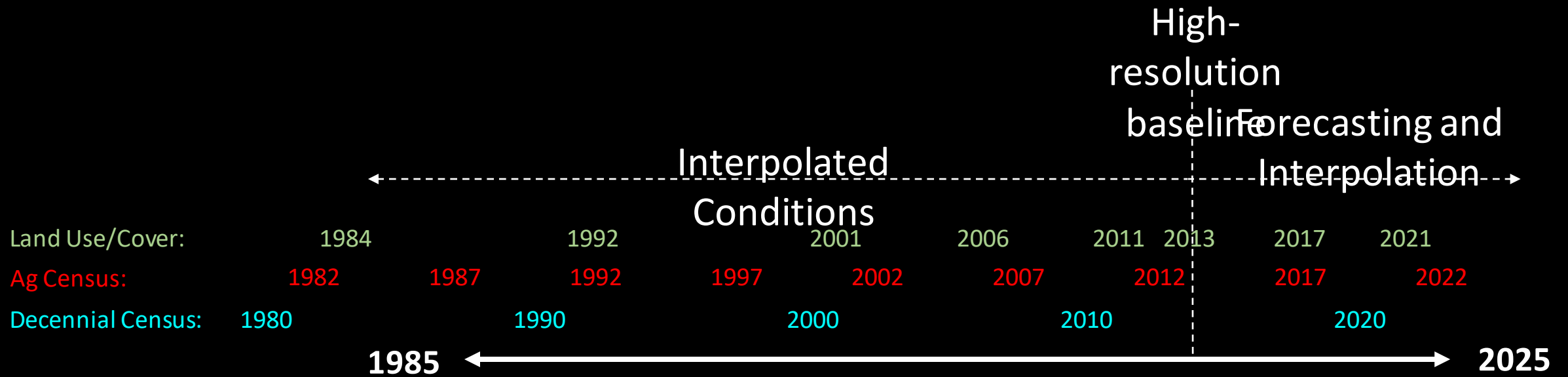
Comparing the Census of Agriculture, CAST, CLUs, and High-res Land Use

		Census		CLU	CAST	Map		Census		CAST	Map		Census	Census	Map	
FIPS	CNTY_NAME	CRP_12	CRP_17	CRP_17	CRP_17	CRP_13	CRP_17	PAS_12	PAS_17	PAS_17	PAS_13	PAS_17	HAY_17	AG_17	AG_13	AG_17
10005	SUSSEX	235,681	235,749	218,067	224,048	194,808	206,736	2,842	2,701	3,340	12,002	28,095	3,787	242,237	206,810	234,831
24005	BALTIMORE	44,642	46,654	47,606	47,616	32,363	32,647	10,163	10,001	10,214	28,053	28,049	10,141	66,796	60,416	60,696
24035	QUEEN ANNES	129,940	129,538	121,734	121,415	93,767	88,127	2,676	2,118	1,967	11,802	30,825	2,961	134,617	105,568	118,952
24045	WICOMICO	56,094	60,094	63,752	64,610	50,365	53,099	1,641	1,653	1,798	8,591	6,633	2,026	63,773	58,956	59,732
36017	CHENANGO	79,255	65,359	75,741	81,170	38,427	14,615	21,635	17,585	24,112	131,903	95,300	50,282	133,226	170,330	109,915
42015	BRADFORD	163,329	136,278	170,224	161,826	40,005	31,667	32,984	30,790	41,930	196,322	200,222	99,407	266,475	236,327	231,889
42033	CLEARFIELD	34,781	23,212	42,768	34,411	34,561	25,733	6,655	5,663	7,959	80,783	78,437	15,606	44,481	115,343	104,169
42041	CUMBERLAND	119,664	129,065	108,647	119,658	61,125	56,857	11,995	12,092	12,209	49,006	59,890	40,172	181,329	110,131	116,748
42071	LANCASTER	331,973	292,813	255,320	275,769	183,272	225,109	45,834	32,993	38,091	89,383	79,168	77,704	403,510	272,655	304,277
51015	AUGUSTA	89,558	95,603	174,061	77,170	36,651	34,398	118,047	117,532	99,626	134,786	110,783	53,341	266,476	171,437	145,181
51073	GLOUCESTER	13,673	13,368	12,237	13,014	11,220	11,689	887	1,002	1,154	2,816	1,338	1,268	15,638	14,036	13,027
51107	LOUDOUN	56,203	51,099	71,762	45,311	13,846	12,354	47,175	32,759	40,811	76,470	43,438	29,444	113,302	90,317	55,791
54003	BERKELEY	33,270	30,686	33,191	34,235	11,470	8,019	16,871	14,173	14,313	32,705	23,990	20,479	65,338	44,175	32,009
54031	HARDY	29,200	30,232	18,229	24,991	7,532	6,753	46,264	46,587	39,226	37,477	30,498	21,123	97,942	45,008	37,251

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High-res Land Use Updates and the Phase 6 Model



Phase III WIPs... 2013 high-res land use + Forecasted 2025 scenarios

CAST-19..... 2013 high-res land use + 2017 Census of Agriculture + Updated 2025 scenarios

CAST-21..... 2013 high-res land use + 2013 to 2017 land use change + 2017 Census of Agriculture + Updated 2025 scenarios

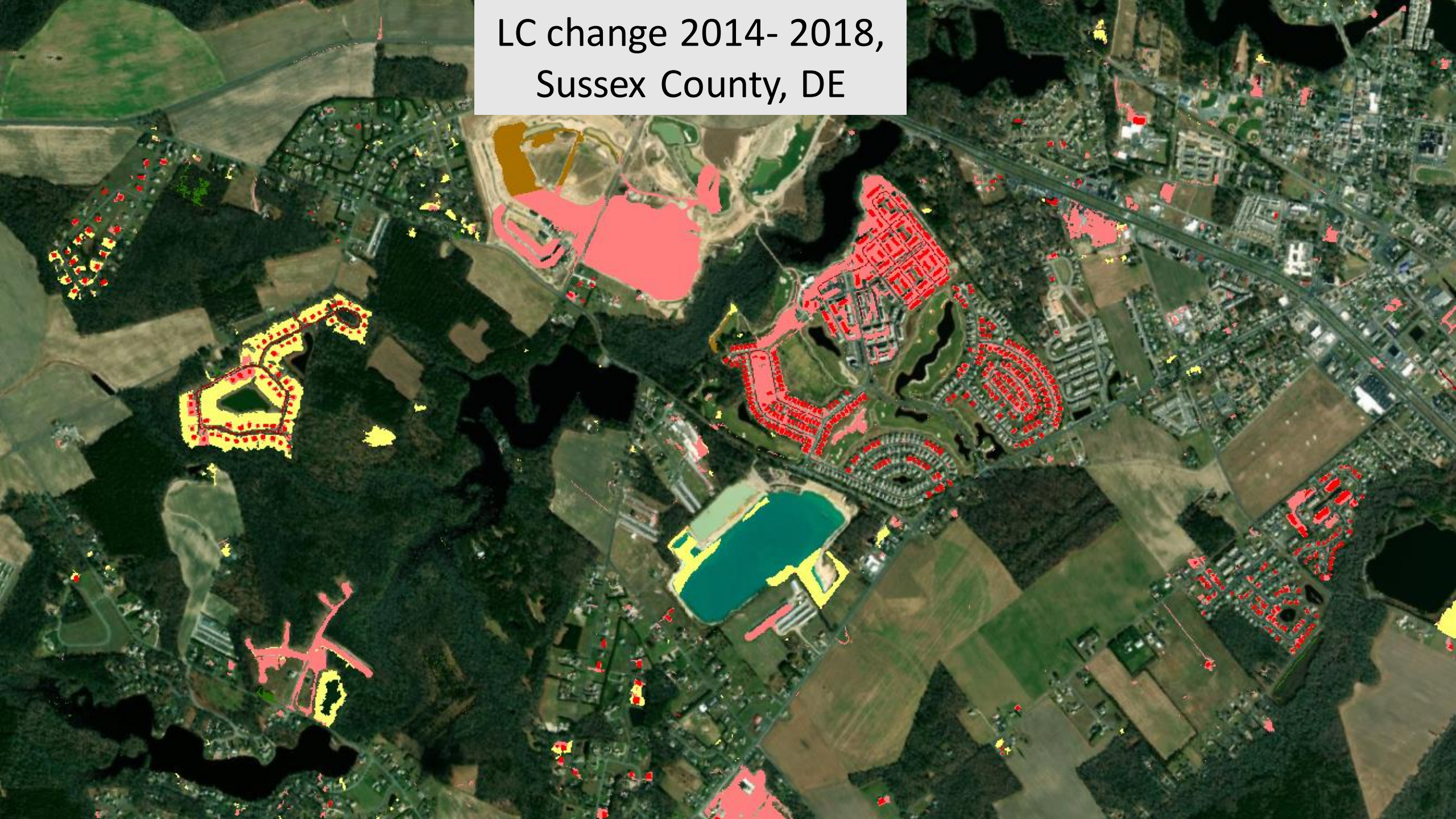
CAST-23..... 2013 high-res land use + 2013 to 2017 to 2021 land use change + 2017 Census of Agriculture + Updated 2025 scenarios

CAST-25..... 2013 high-res land use + 2013 to 2017 to 2021 land use change + 2017 and 2022 Census of Agriculture + Updated 2025 scenarios

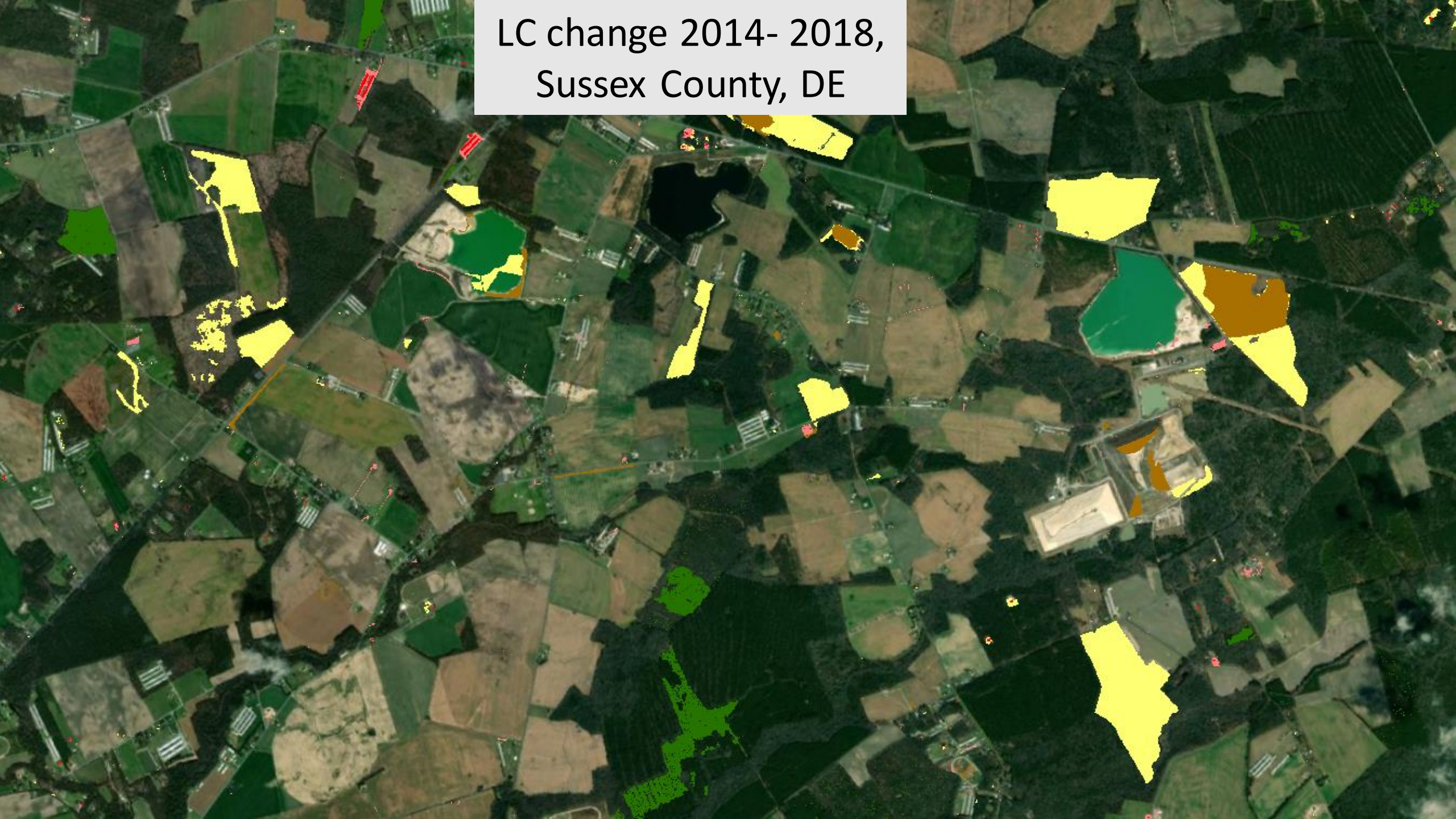
Important considerations related to the Phase 6 land use “Roll Up”

1. 2013 Phase 6 land use acres are fixed and will not be updated.
2. For CAST-21, post-2013 land uses will be updated to 2017 by adding only the change from 2013-2017 to the original 2013 land use acreages. Post-2017 land uses will be interpolated between 2017 and updated 2025 forecasted conditions.

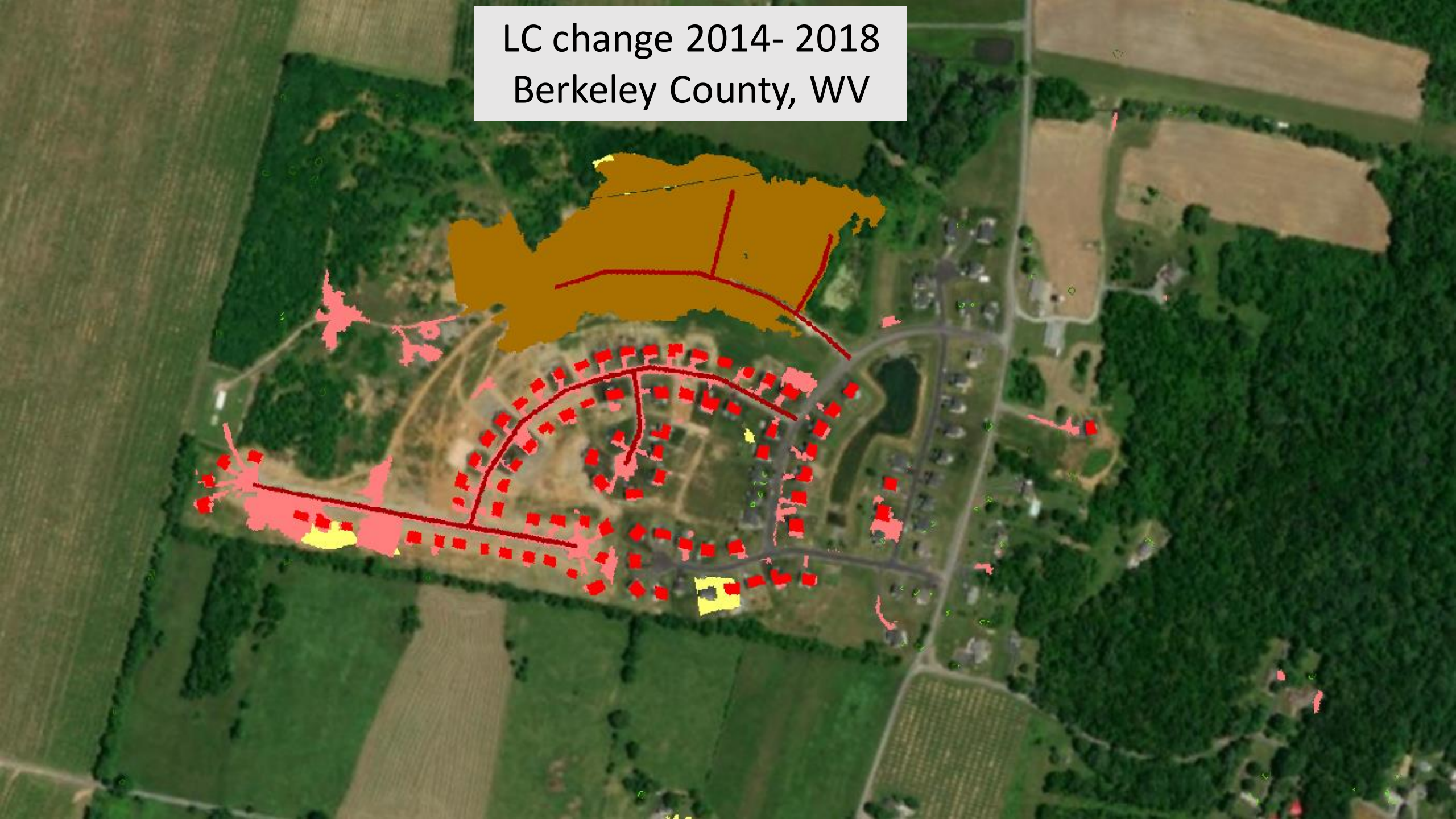
LC change 2014- 2018,
Sussex County, DE



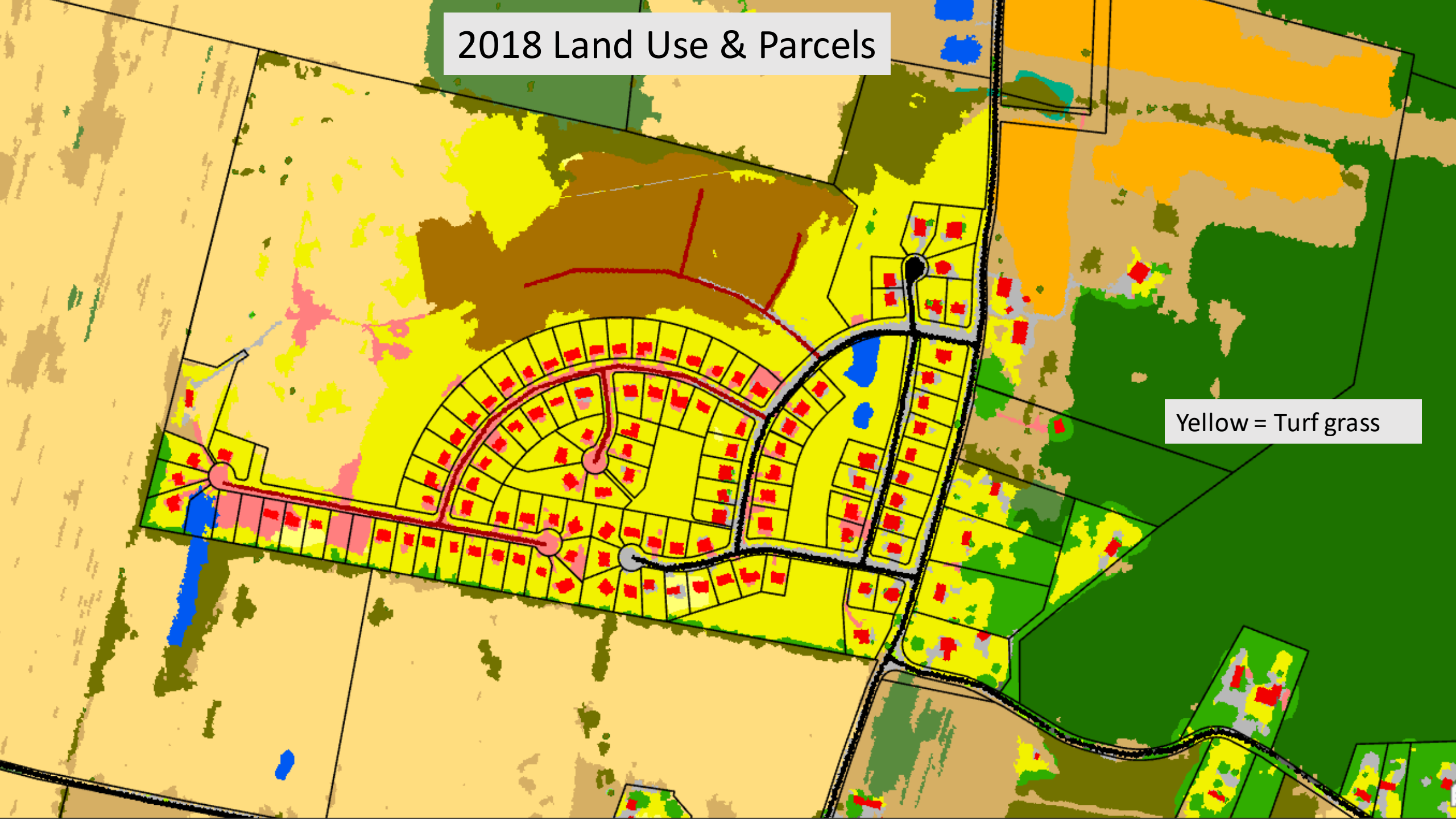
LC change 2014- 2018,
Sussex County, DE



LC change 2014- 2018
Berkeley County, WV

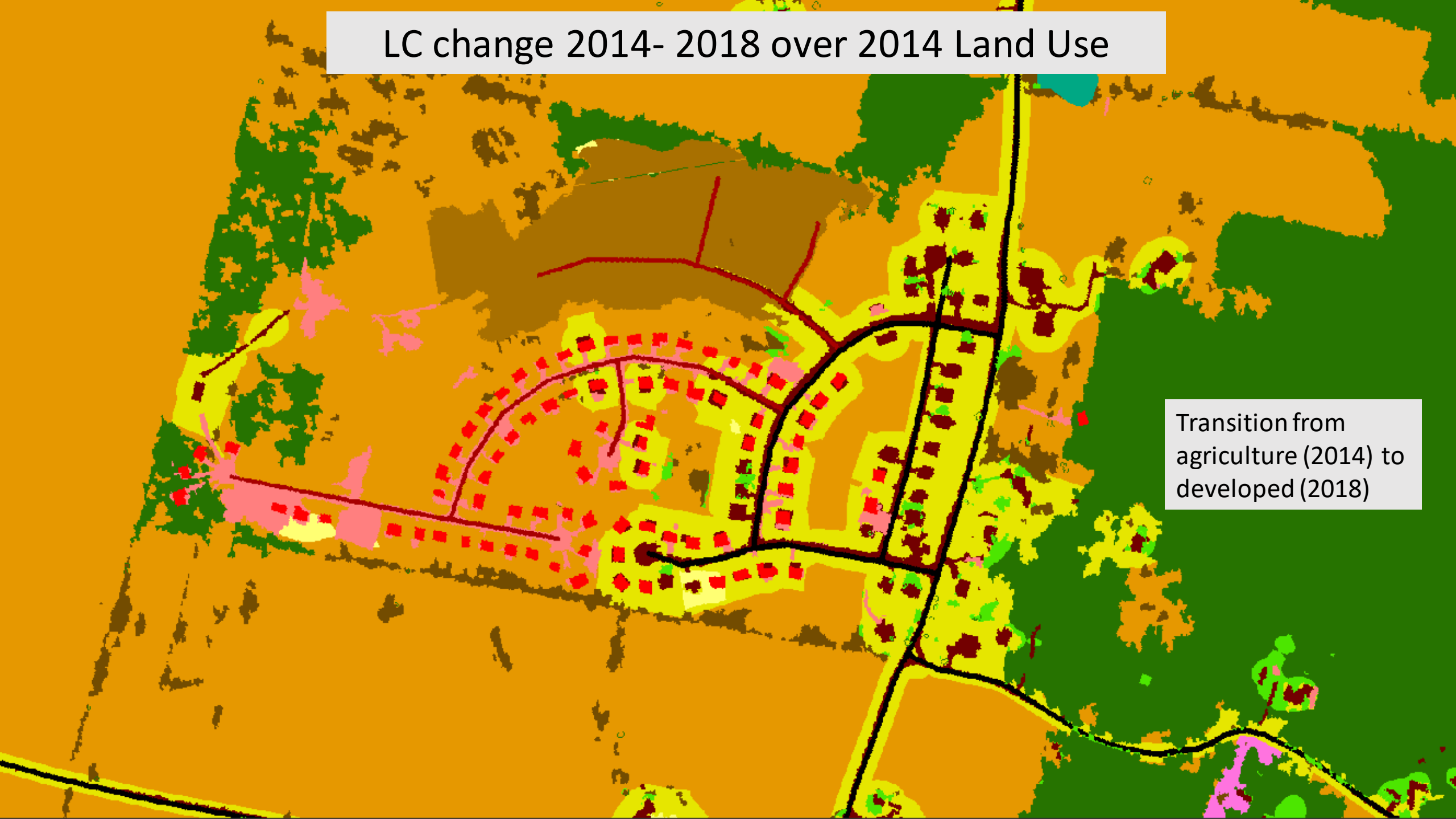


2018 Land Use & Parcels

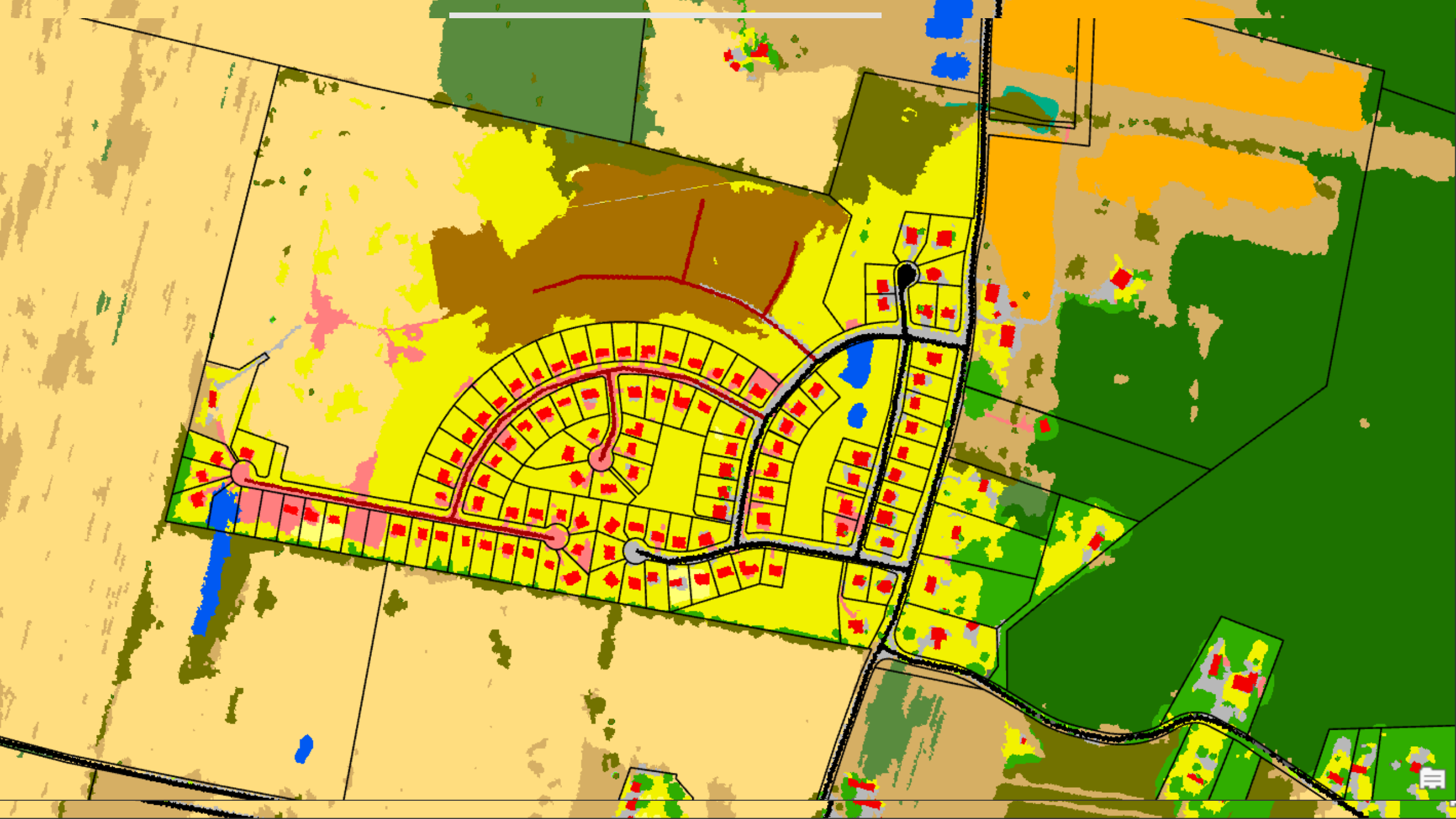


Yellow = Turf grass

LC change 2014- 2018 over 2014 Land Use



Transition from
agriculture (2014) to
developed (2018)



Mapped Changes in Land Cover: 2013 – 2017 or 2014 - 2018

FIPS	County	State	Nat to Dev	Nat to LVB	LVB to NAT	LVB to Dev	Pct_Change
10005	Sussex	DE	1,046	6,105	1,066	3,069	2.01%
24005	Baltimore	MD	28	326	812	1,400	0.97%
24035	Queen Anne's	MD	87	387	661	499	0.68%
24045	Wicomico	MD	141	2,052	3,464	404	2.69%
36017	Chenango	NY	37	523	883	148	0.35%
42015	Bradford	PA	211	1,525	508	450	0.61%
42033	Clearfield	PA	350	4,940	897	461	1.33%
42041	Cumberland	PA	392	2,077	572	1,913	1.74%
42071	Lancaster	PA	395	1,105	607	2,253	0.91%
51015	Augusta	VA	184	2,068	675	440	0.67%
51073	Gloucester	VA	58	4,011	814	53	3.71%
51107	Loudoun	VA	1,191	2,534	524	1,625	2.85%
54003	Berkeley	WV	131	810	228	613	1.24%
54031	Hardy	WV	42	1,605	269	115	0.58%
Totals			4,295	30,067	11,981	13,441	

Nat = Natural = water, wetlands, tree canopy, and shrub-scrub

Dev = Structures, Other Impervious, Roads, and Tree Canopy over all forms of Impervious

LVB = low vegetation and barren lands

2017 Land Use & Land Use Change Production Schedule

2017 Land Use Production Schedule		2020			2021											
Order	Task	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	Local review of 2017 Land Cover Data	University of Vermont Spatial Analysis Laboratory														
2	Draft Hyper-resolution Hydrography	UMBC, Chesapeake Conservancy Conservation Innovation Center (CIC)														
3	Cropland, Pasture, Orchards, and Turf Grass	AGWG		AGWG	AGWG	AGWG	LUWG	AGWG, LUWG	AGWG, LUWG							
4	Suspended Succession, Bare Shore, and Solar Fields	LUWG				LUWG	USWG	USWG, LUWG	LUWG							
5	Tidal & NonTidal Wetlands	WWG		WWG		WWG		WWG, LUWG	WWG, LUWG							
6	Forests, Tree Canopy, Timber Harvests, and Natural Succession			FWG		FWG		FWG, LUWG	FWG, LUWG							
7	Bare Construction, P6 Roll-up Decision Rules, FedFac Land Uses				LUWG		USWG, FedFac	LUWG	LUWG							
8	Prototype Land Use in 14 counties			Chesapeake Conservancy (CIC)												
9	Approve 2017 LU Mapping and P6 Roll-up Methods (14 counties)								LUWG, WQGIT							
10	Complete 2017 Land Use Dataset (all 206 counties)						CIC									
11	Revise 2013 Land Use (to match 2017 for all counties)						CIC		LUWG	CIC						
12	Update MS4s, Sewer, Zoning, and Population Projections						CBP Land Data Team									
13	Revise Agricultural Forecast Methodology	AGWG					AGWG		AGWG							
14	Update Land Policy BMPs (future LULC scenarios)										LUWG					
15	Update 2013, 2017, and 2025 data for CAST-21										LUWG	WQGIT				
16	Public release- with streams, potential wetlands, minor fixes													WWG	LUWG	WQGIT