California Waste Tire Market Report: 2019

Draft Findings

June 15, 2020

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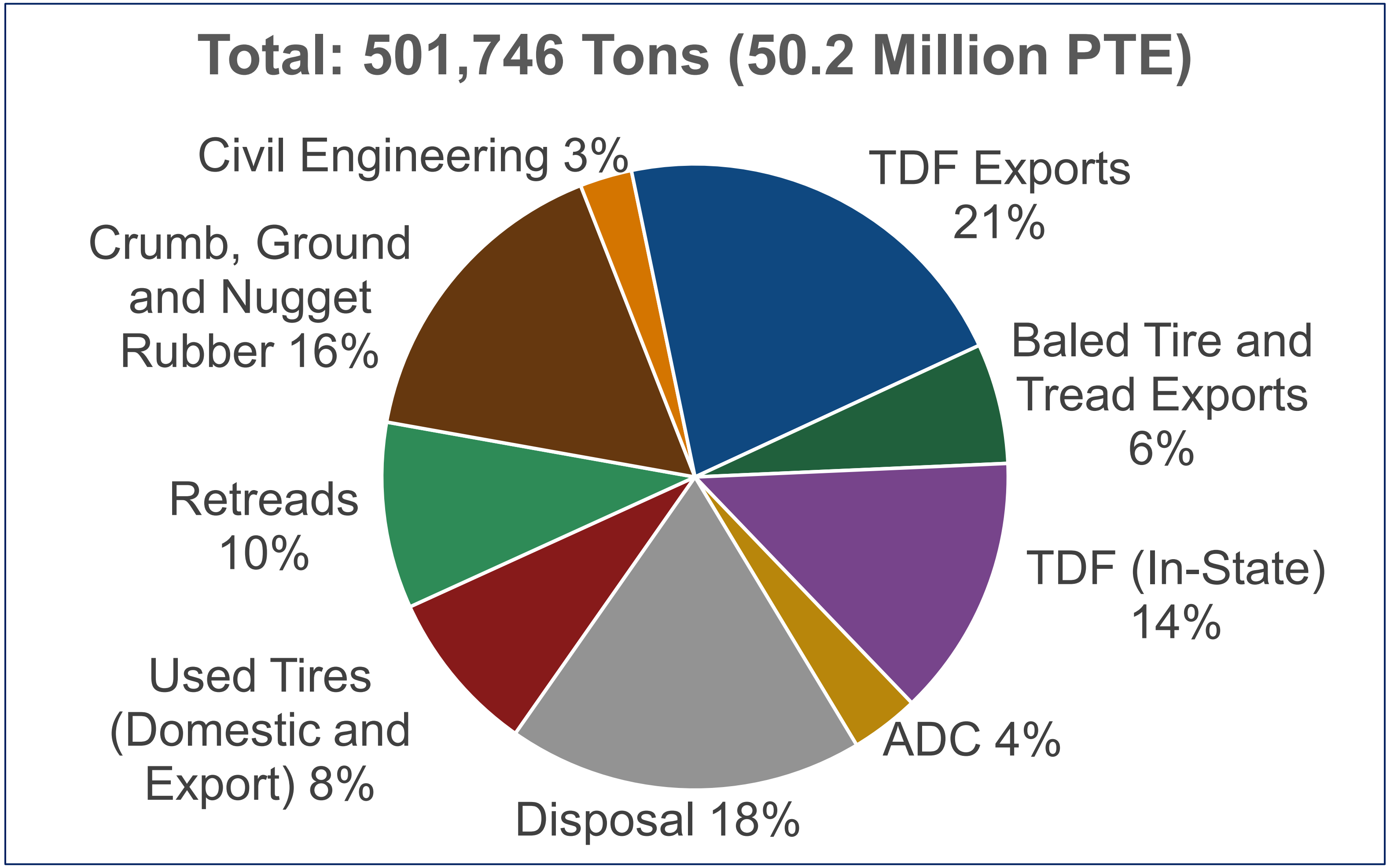
recycling industry development

Outline

1. The Bottom Line
2. Infrastructure & Products
3. Market Trends & Outlook

Bottom Line:
2019 California Waste Tire Flows – Draft Findings



Diversion Rate
82%

Recycling Rate
37%

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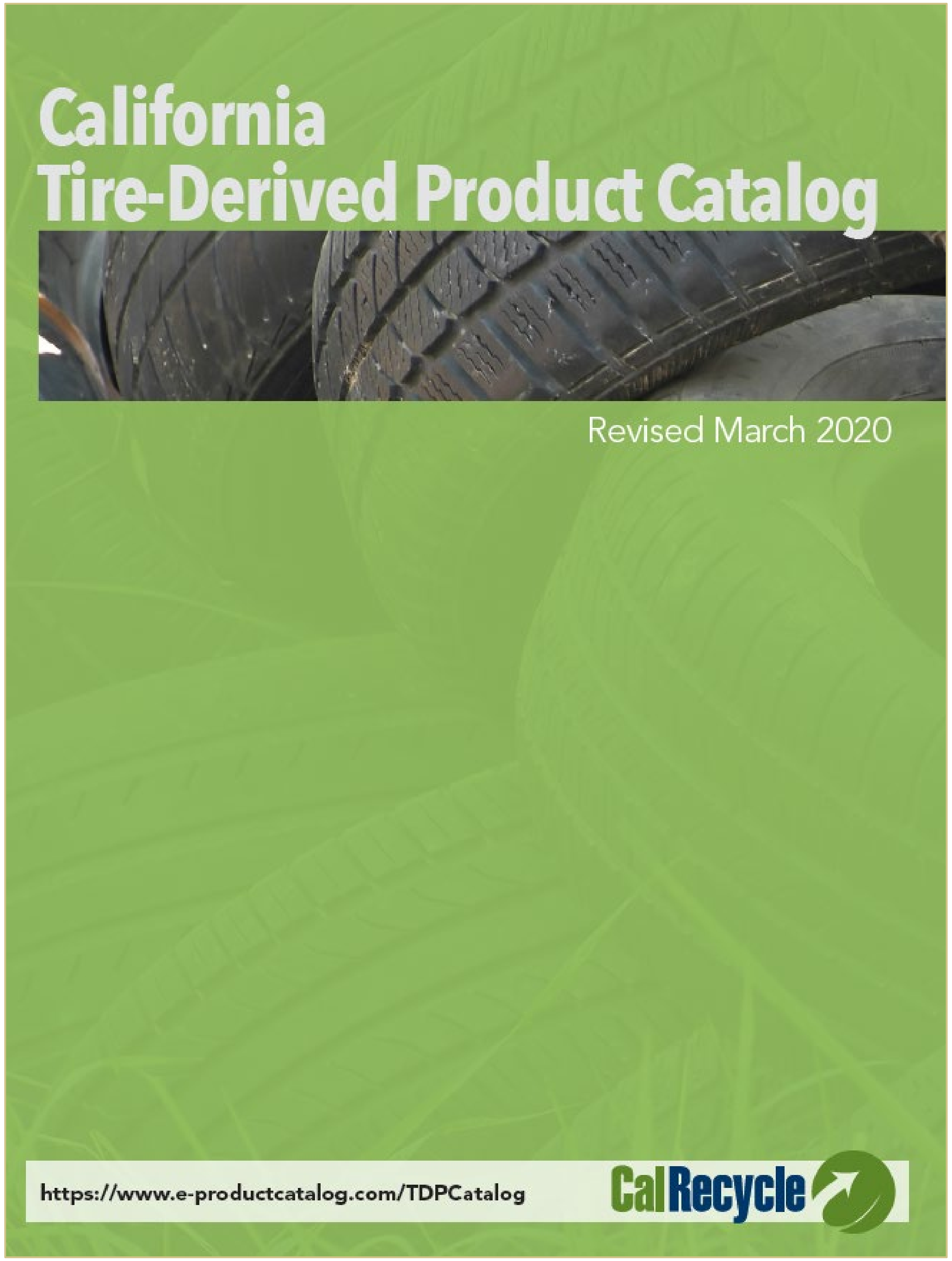
2020 Uncertainty: COVID-19 Disruptions to Waste Tire Industry

- Stay-at-Home Orders, Economic Downturn, Uncertainty
- Most Companies “Essential” with “New Normal” Operations
- Supply Disruptions
  - Tire Flows Down but Stabilizing
  - TDM Flows OK So Far
- Demand Disruptions
  - Mixed: Some Accelerated Projects, Some Reductions, Some Anxiety
- What is Ahead?
  - Long-Term Severe Recession <u>or</u>
  - Q3 Bump and Steady Recovery?

2. Infrastructure and Products

One-Stop Shopping

e-productcatalog.com/TDPCatalog



A Centralized Source of Information

e-productcatalog.com/TDPCatalog

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Tire-Derived Material Suppliers

e-productcatalog.com/TDPCatalog

1. American Tire-Tec, Inc.
2. American Tire Recycling, LLC
3. The Bakersfield Association For Retarded Citizens, Inc (BARC)
4. BAS Recycling, Inc.
5. Bay Area Tire Recycling
6. BJ Used Tire & Rubber Recycling, Inc.
7. CRM Co. LLC - Rancho Dominguez
8. CRM Co. LLC - Stockton
9. Shamrock Recycling of California
10. JTR
11. Lakin Tire West, Inc.
12. Rubber Recovery, Inc.
13. Titan Tire Recycling, Inc.
14. Transpacific Recycling, LLC
15. Tri-C Manufacturing, Inc.
16. Waste Recovery West, Inc. - Stockton
17. Waste Recovery West, Inc. - Redding
18. Waste Tire Products Research and Development, Inc.
19. West Coast Rubber Recycling, Inc.

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Tire-Derived Product Manufacturers

e-productcatalog.com/TDPCatalog

1. Bent Manufacturing Company, Inc.
2. Environmental Molding Concepts
3. Kirkhill
4. Malarkey Roofing Products
5. MBTechnology
6. Millennium Molding, Inc.
7. Mission Rubber Company
8. Paragon Tactical
9. SafePath Products
10. Sierra Mat & Rubber Company
11. Three-D Plastics, Inc.
12. TrafFix Devices, Inc.
13. U.S. Rubber Recycling, Inc.
14. Waste Tire Product Innovations, LLC

Retreaders

e-productcatalog.com/TDPCatalog

1. A and M Bandag, Inc.
2. Aero Wheel and Brake Service Corp.
3. Border Recapping, LLC
4. GCR Tire Center - Santa Rosa
5. GCR Tire Center - Stockton
6. Burgess Tire, Inc.
7. Canyon Tire Sales, Inc.
8. Daetweiler Tire Company, Inc.
9. Daniel Tire Service, Inc.
10. Delray Tire & Retreading, Inc.
11. Eco-T Tire & Retreading, LLC
12. Ecoworld Tires, Inc.
13. Fleet Tire, Inc.
14. Goodyear Commercial Tire & Service Centers - Redding
15. Goodyear Commercial Tire & Service Centers - Walnut
16. I-5 Tire, Inc.
17. Inland Industrial Tire North, Inc.
18. Jack's Tire and Oil of California, Inc.
19. Lee's Service, Inc.
20. McCoy Truck Tire Service Center, Inc. - Modesto
21. McCoy Truck Tire Service Center, Inc. - Stockton
22. McCoy's Industrial Tire, Inc.
23. MTS Commercial Tire
24. New Pride Corporation
25. Nick's Tire & Brake Service, Inc.
26. North State Tire, Inc.
27. Parkhouse Tire, Inc. - Bell Gardens
28. Parkhouse Tire, Inc. - Fontana
29. Pete's Road Service, Inc.
30. R.Q. Tires, LLC
31. Rago Tires, LLC
32. Redding Valley Tire, Inc.
33. Rovince International Corp.
34. S & A Retread Rubber Co.
35. Santa Maria Tire, Inc.
36. Seaport Tire Company, Inc.
37. Tehama Tire Service, Inc.
38. Topa Tire Corporation
39. Total Tires, Inc.
40. Tyack Tires, Inc.

Tire-Derived Product Installers

e-productcatalog.com/TDPCatalog

1. K.B. Industries, Inc.
2. No Fault Sport Group LLC
3. Paragon Tactical
4. PDPlay, Inc.
5. PlayMax Surfacing, Inc.
6. Robertson Recreational Surfaces, Inc.
7. SafePath Products
8. Sierra Mat & Rubber Company
9. SpectraTurf
10. United Sports Surfacing of America, Inc.

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Tire-Derived Paving Material and Product Suppliers

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1. All American Asphalt
2. American Pavement Systems, Inc.
3. California Commercial Asphalt LLC
4. DeSilva Gates Construction - Sacramento
5. DeSilva Gates Construction - Dublin
6. FNF Construction, Inc.
7. Granite Construction
8. Intermountain Slurry Seal, Inc.
9. K.B. Industries, Inc.
10. Manhole Adjusting, Inc.
11. Matich Corporation
12. National Blending Company LLC
13. RJ Noble Company
14. Roy Allen Slurry Seal, Inc.
15. SealMaster of Southern California
16. Security Paving Company, Inc.
17. Teichert, Inc.
18. VSS International, Inc.
19. Vulcan Materials Company - Western Division
20. Western Oil Spreading Services, Inc.

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Testing and Inspection Companies

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1. ABC Playground Safety
2. Community Playgrounds LLC
3. CRT Laboratories, Inc.
4. Disability Access Consultants, Inc.
5. DK Enterprises
6. EnviroMatrix Analytics, Inc.
7. IAPMO R&T Lab
8. Inspector Playground
9. Intertek USA - Fresno
10. Intertek USA - Lake Forest
11. Safe2Play
12. Safe Park
13. Safeplay by Design, Inc.
14. Safety Play, Inc.
15. Twining, Inc.

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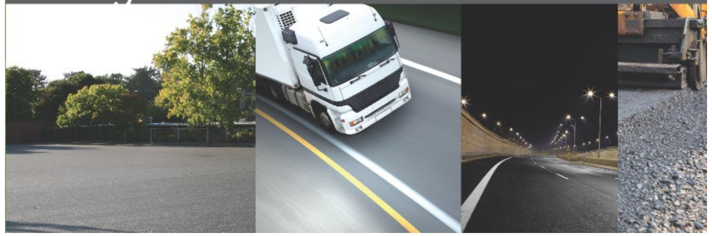
California Tire-Derived Products

Retreads

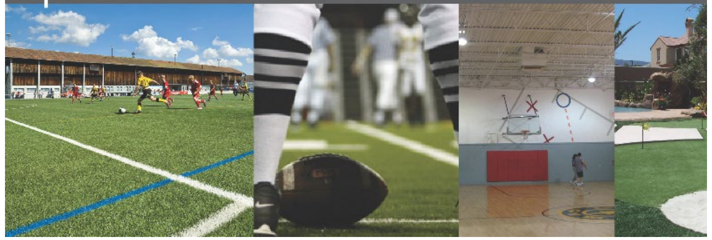
Tire-Derived Material Feedstock

Civil Engineering

Paving Materials & Products



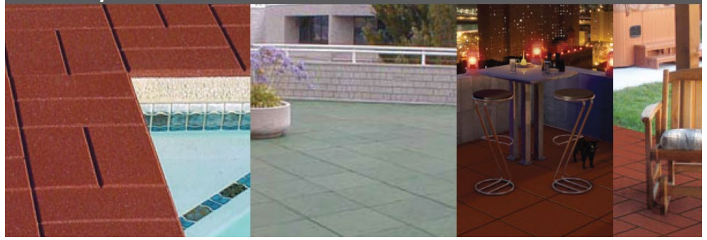
Sport Surfaces



Playground Surfaces

Landscape Surfaces

Mats, Pavers & Tiles



Paths, Walkways, Sidewalks & Bike Trails

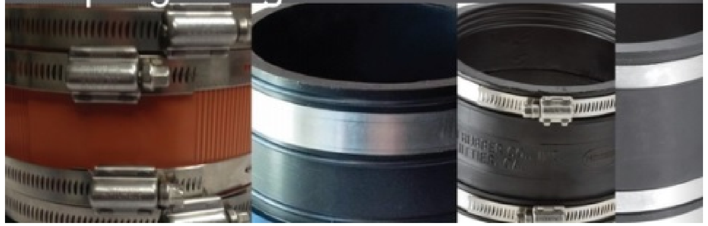
More Tire-Derived Products

Flooring

Roofing

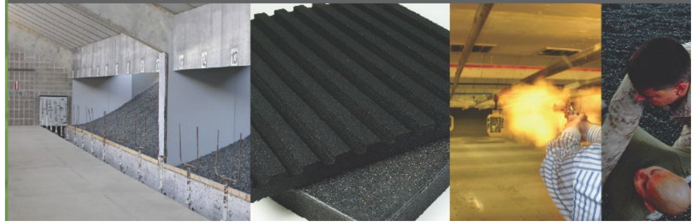
Accessibility Products

Coupling Fittings

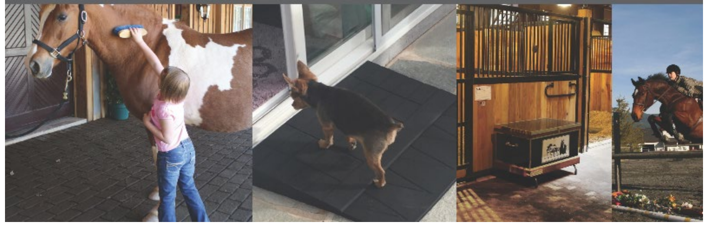


Traffic Related Products

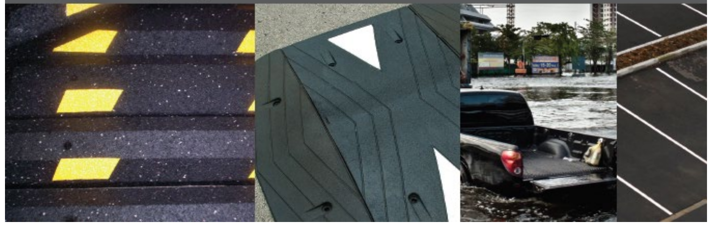
Ballistic Products



Animal Care

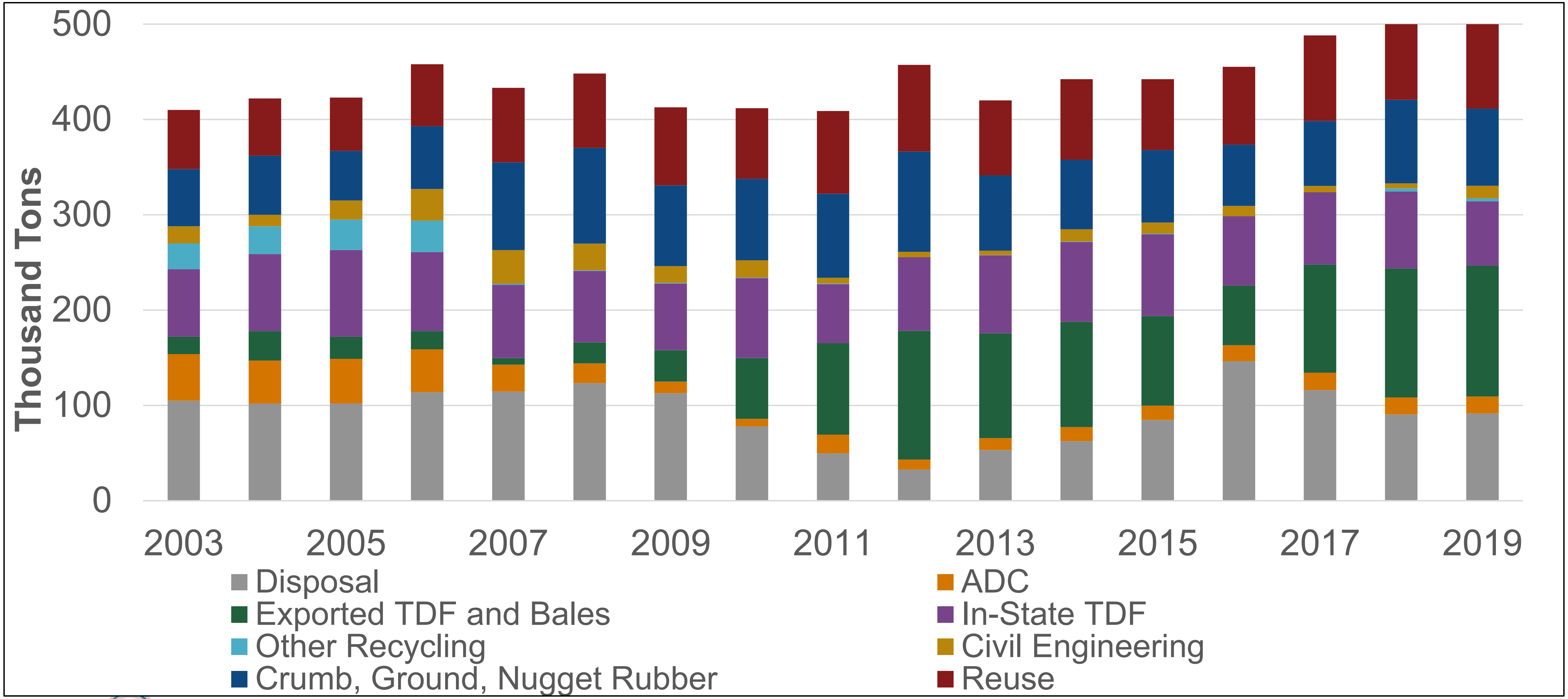


Automotive



3. Market Trends and Outlook

17 Year Trend by Market Segment



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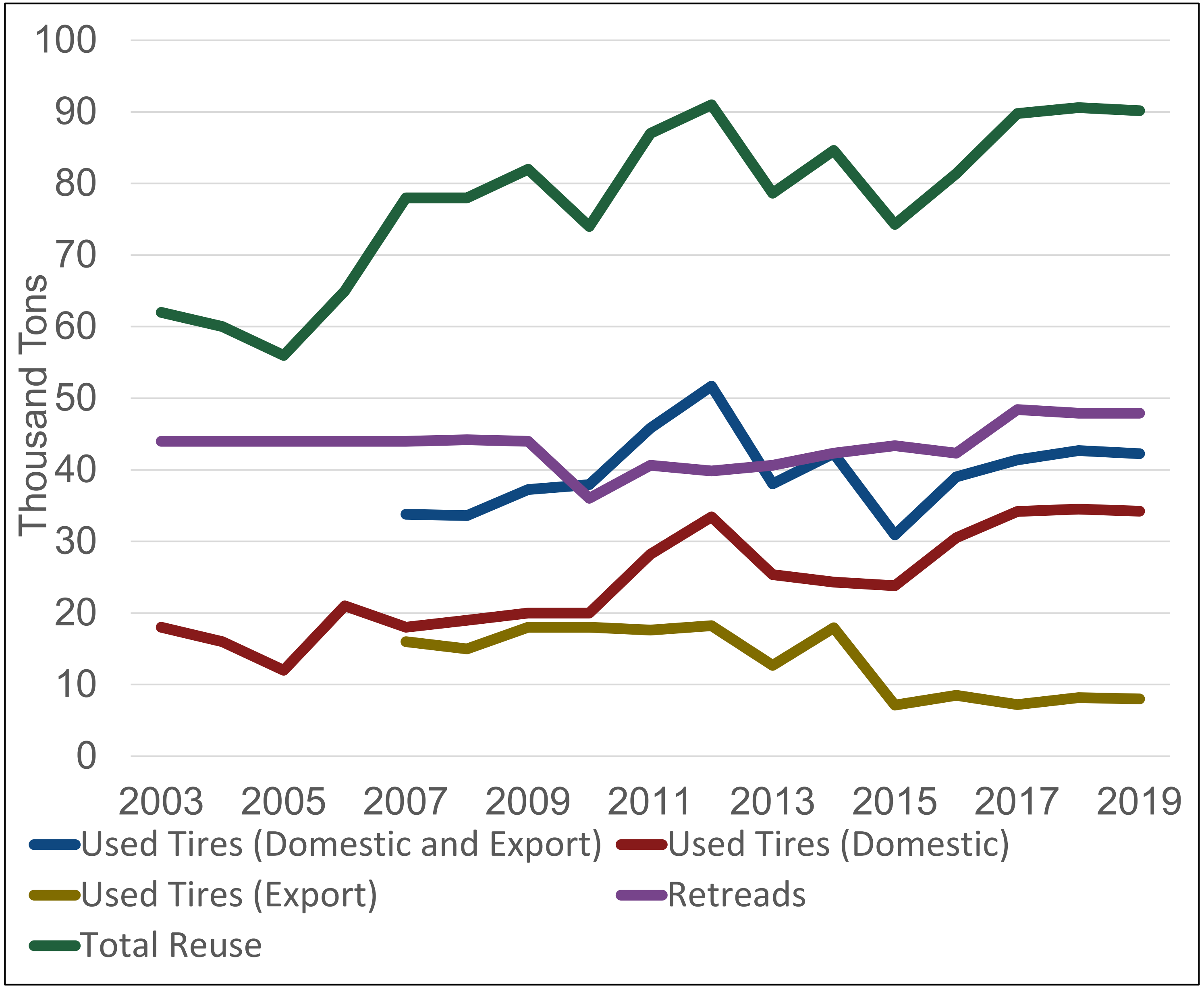
Reuse

- Relatively Strong and Stable
- Continuing Retreader Industry Consolidation and Shifts
- Tariffs: Reprieve from Low-Cost, Low-Tier Imports
- New CalRecycle Contract to Promote Retreading



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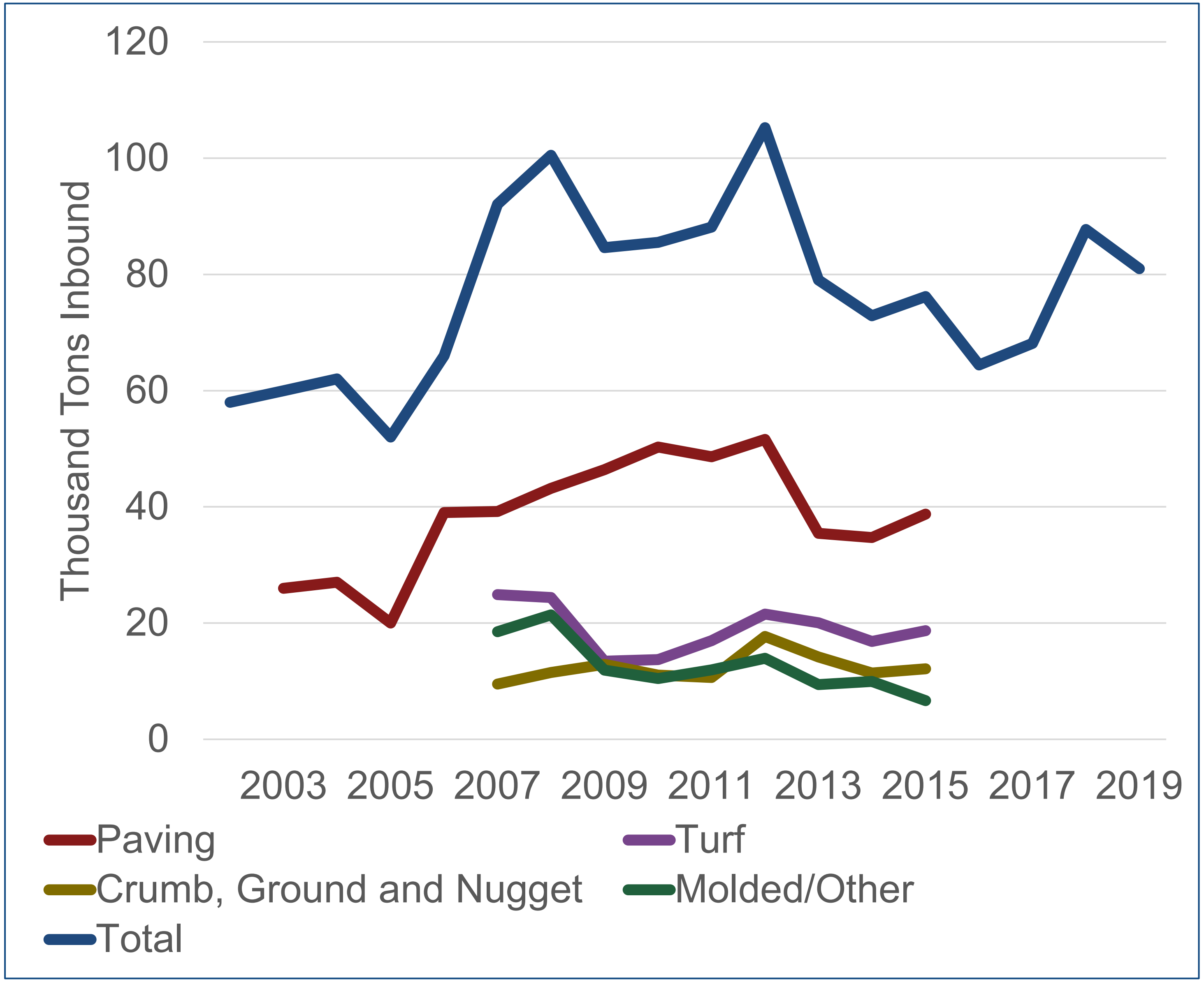
Crumb and Ground Rubber

- Positive Demand Trend Going into 2020
- Permitted Capacity Available
- COVID Uncertainties and Constraints
- Reuse of EOL Infill and PIP



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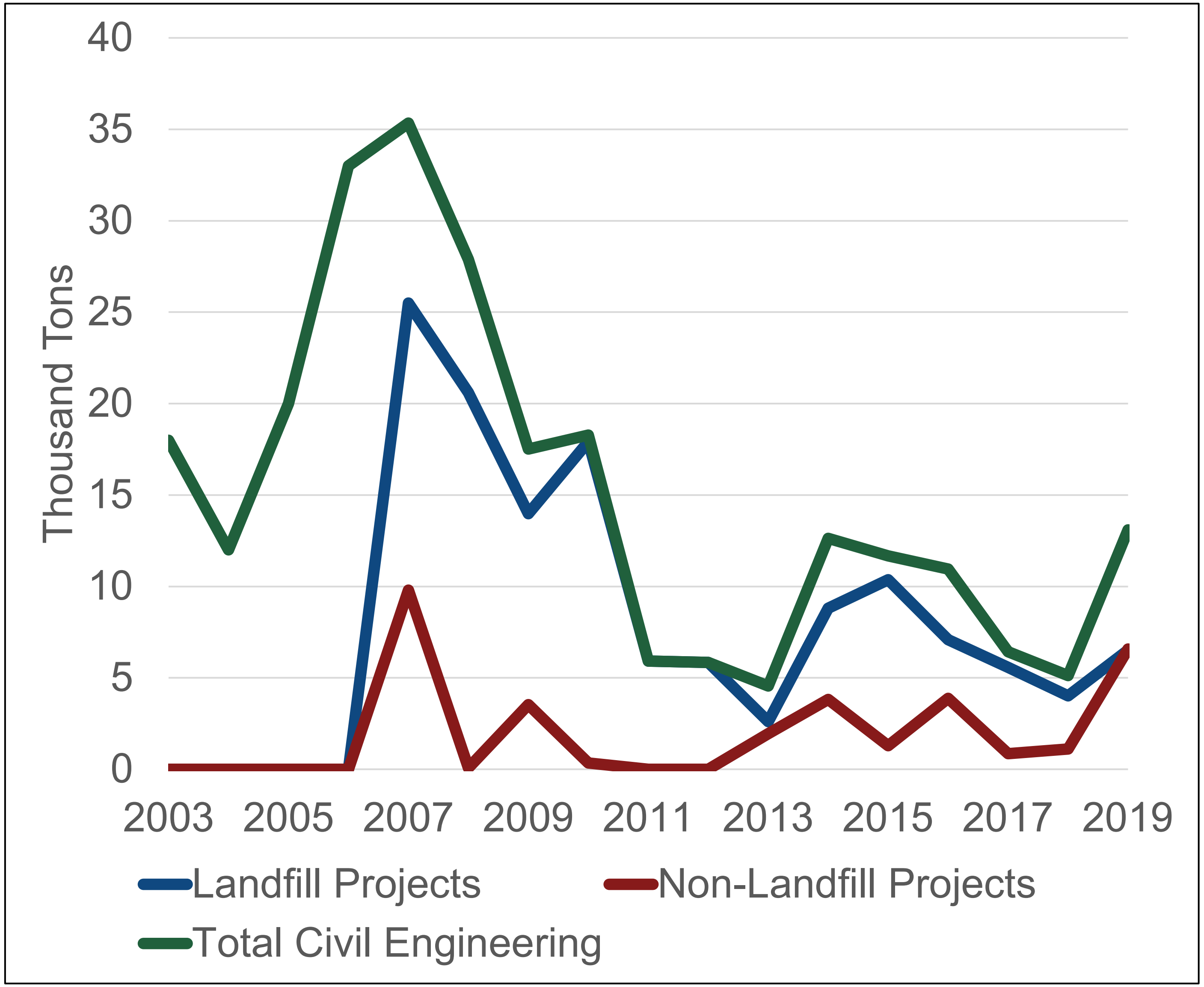
Tire-Derived Aggregate

- Consistent Use at Four Landfills
- Non-Landfill More Variable
- Booked Projects Suggest Somewhat Lower in 2020 but More in Development Pipeline



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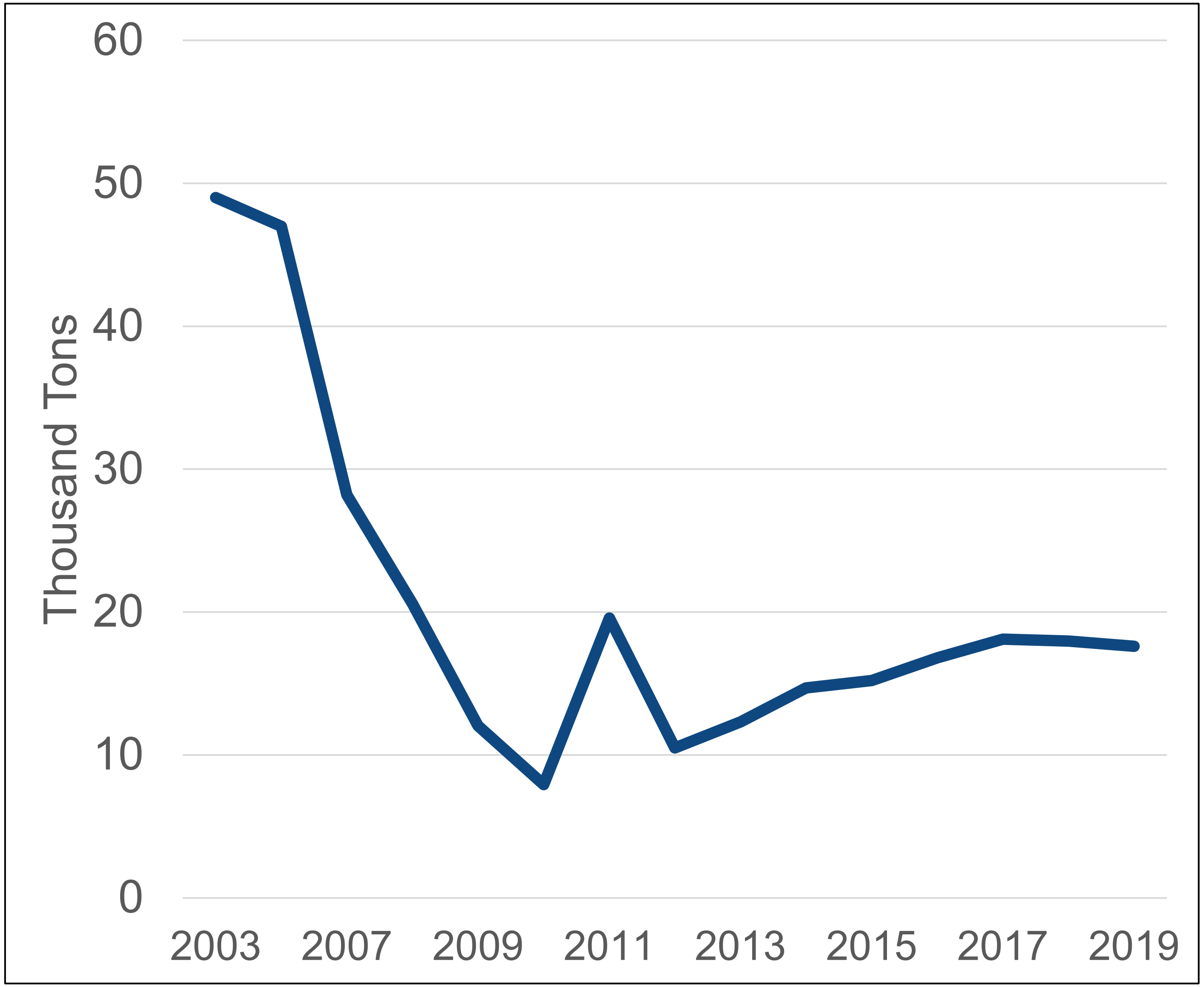
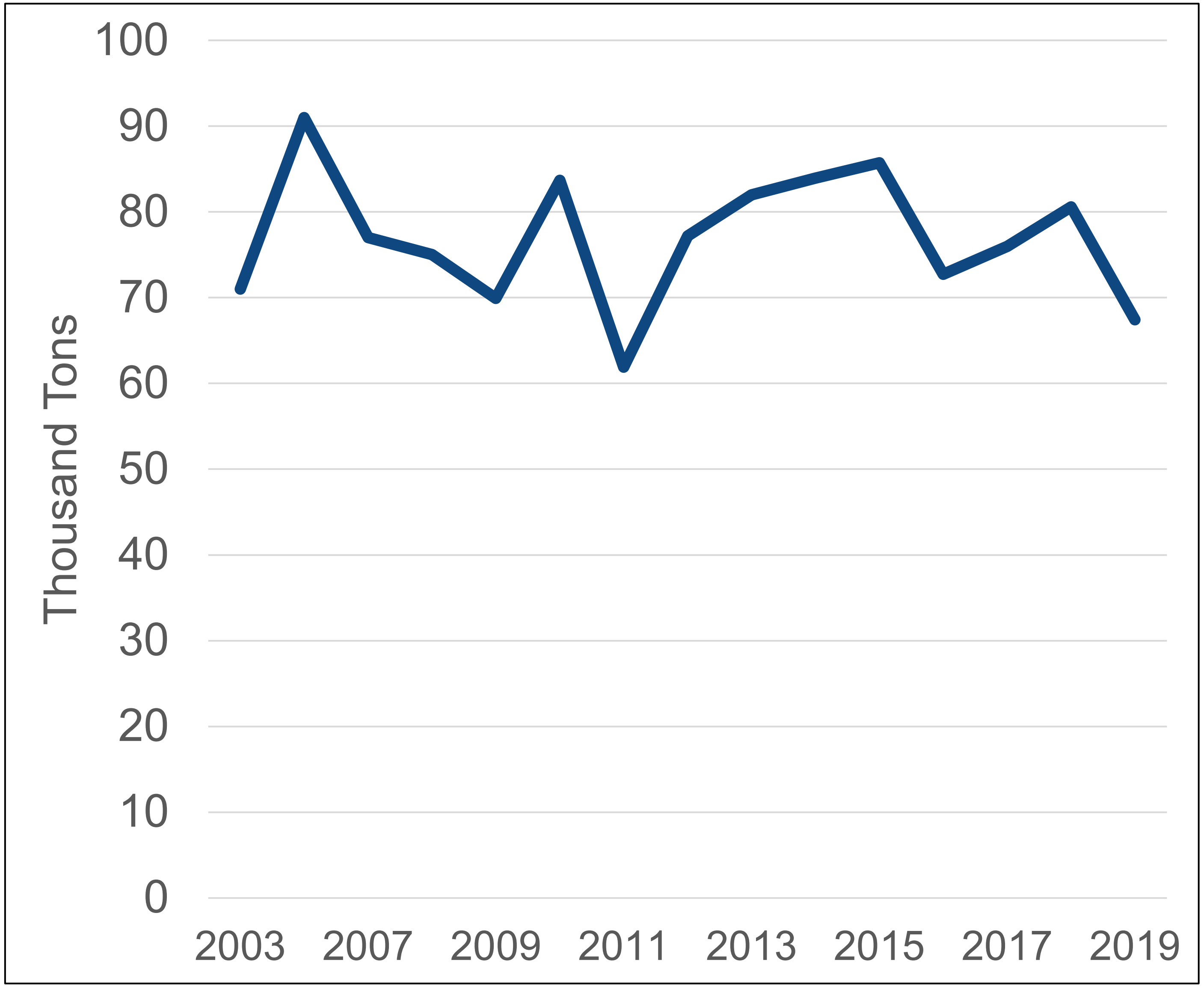
Alternative Daily Cover at Landfills

- 3 Northern CA Landfills
- 1 Now Closed



Tire-Derived Fuel (In-State)

- Relatively Strong and Stable
- Drop at One Cement Kiln in 2019
- Dependent on Construction Trends
- Plus 9,000+ Tons Fiber



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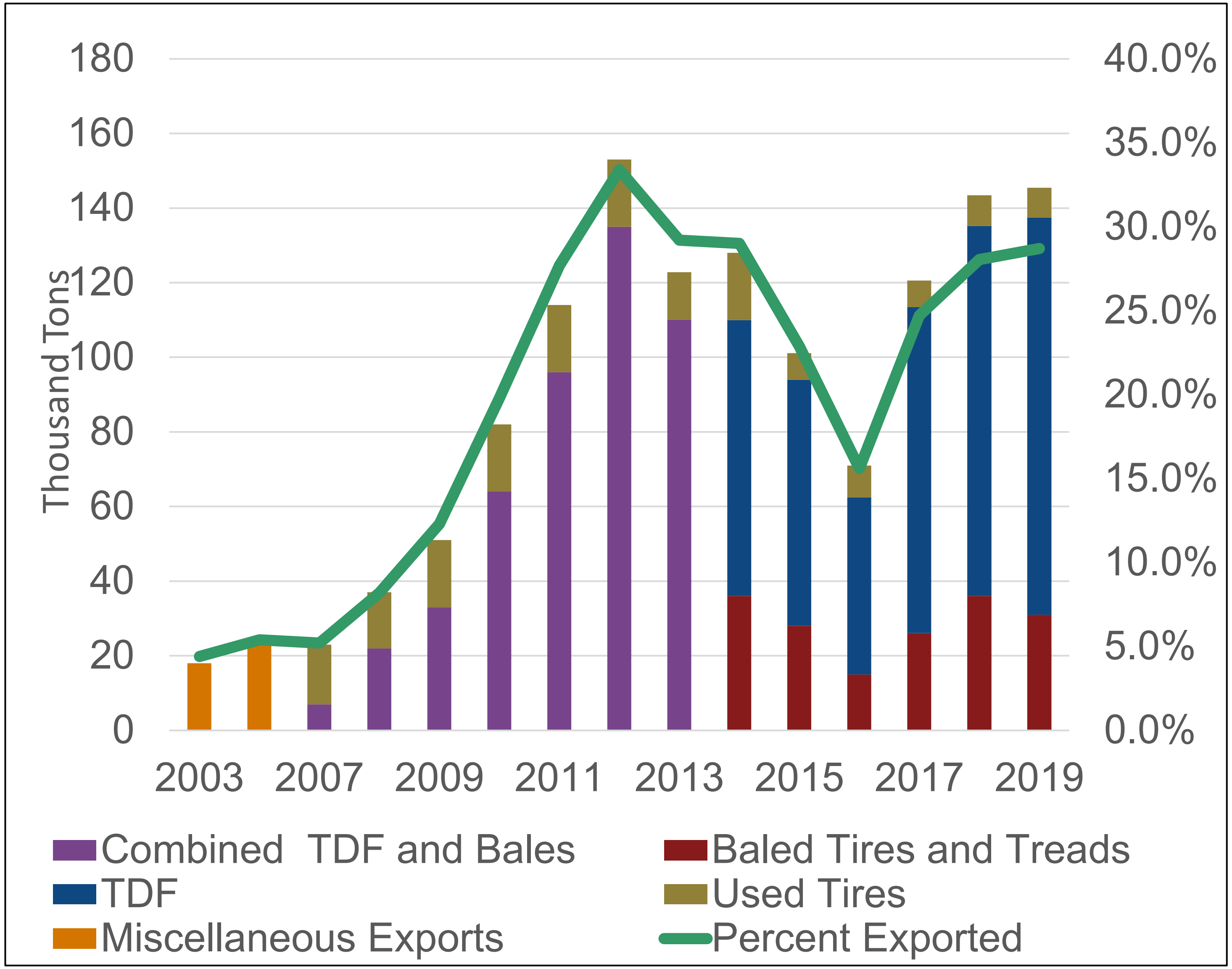
Export Trend

- 2019 Strong Demand
- Feb 2020 Bale Market Stall
- 2020 Decline Expected: Pricing, Import Controls, Container Shortage



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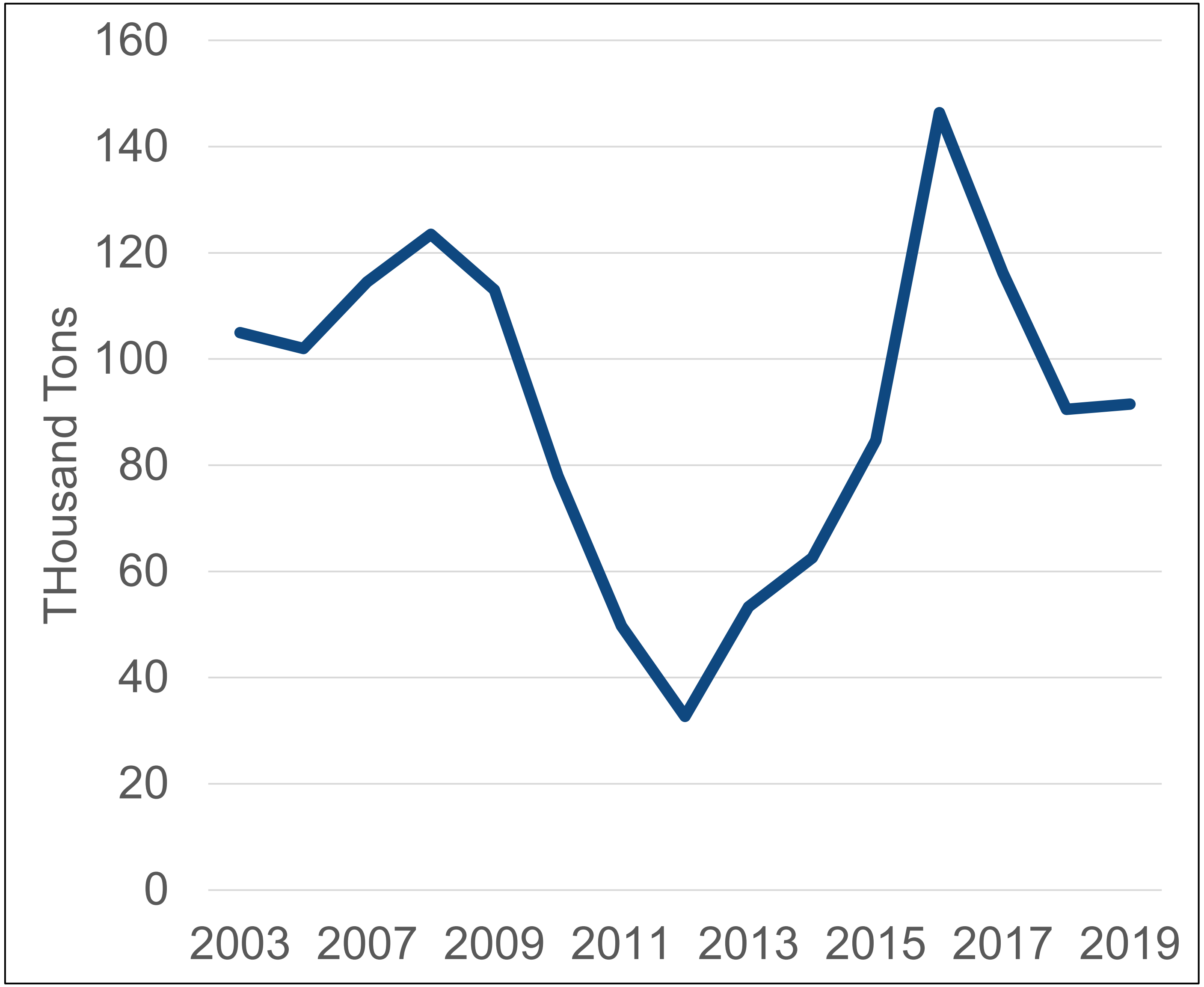
Disposal Trend

- Possible 2020 Uptick with Softening Exports



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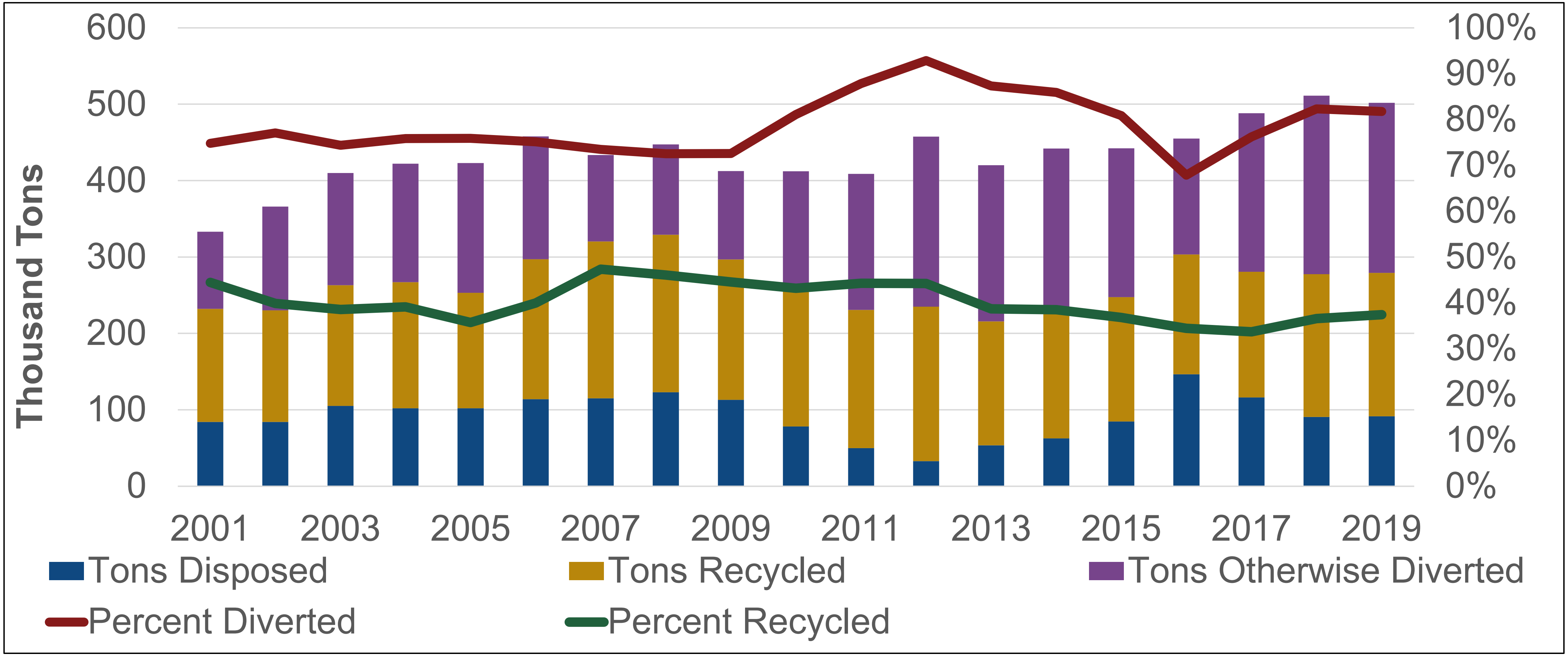
Constraints to Expanding Recycling

- Need for New and Expanded TDP Markets
- Supplier Competition, Capabilities and Priorities
- TDP Competitiveness vs. Alternative Products
- Economic Downturn and Uncertainty
- Expansion Requires Sustained Commitment & Investment
- Limited Commercial Purchasers in California
- High Cost of Doing Business in California

What's the Best Strategy? What are Your Ideas?

- Five-Year Tire Plan Update Starts Nov. 2020
- No Silver Bullet or Consensus Approach
- Expected Decline in CalRecycle Funding
- How to Prioritize and Resolve Funding Tradeoffs?
  - CalRecycle Programs
  - TDPs and Applications
  - New Approaches?

Recycling and Diversion Trend



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Questions?

Feedback on Draft Findings
Welcome **by June 22**

2019 Market Report Coming Soon

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Appendix

Source Data Used for Charts

Slide 3 Source Data: 2019 California Waste Tire Flows

Category	Million PTE	Percent of Total
Used Tires (Domestic and Export)	4.2	8.4%
Retreads	4.8	9.6%
Crumb, Ground and Nugget Rubber	8.1	16.1%
Civil Engineering	1.3	2.6%
TDF Exports	10.6	21.2%
Baled Tire and Tread Exports	3.1	6.2%
TDF (In-State)	6.7	13.4%
ADC	1.8	3.5%
Disposal	9.2	18.3%
Other Recycling	0.3	0.6%
Total	**50.2**	**100.0%**

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Source Data for Slides 17, 21, 22 and 24 : 17 Year Trend by Market Segment, Part A (Tons)

Category	2002	2003	2004	2005	2006	2007	2008	2009	2010
Disposal	84,000	105,000	102,000	102,000	114,000	114,510	123,490	113,046	77,993
ADC	39,000	49,000	45,000	47,000	45,000	28,200	20,580	12,042	7,928
Exported TDF and Bales	20,000	18,000	31,000	23,000	19,000	7,000	22,000	33,000	64,000
In-State TDF	61,000	71,000	81,000	91,000	83,000	77,000	75,020	69,926	83,675
Other Recycling	59,000	27,000	29,000	32,000	33,000	950	790	713	490
Civil Engineering	30,000	18,000	12,000	20,000	33,000	35,340	27,890	17,510	18,274
Crumb, Ground, Nugget Rubber	58,000	60,000	62,000	52,000	66,000	92,130	100,510	84,614	85,521
Reuse	38,000	62,000	60,000	56,000	65,000	78,000	78,000	82,000	74,000
Total Managed	**366,000**	**410,000**	**422,000**	**423,000**	**458,000**	**433,000**	**448,000**	**412,000**	**411,000**

Source Data for Slides 17, 21, 22 and 24 : 17 Year Trend by Market Segment, Part B (Tons)

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019
Disposal	49,700	32,688	53,320	62,579	84,699	146,429	116,214	90,508	91,678
ADC	19,589	10,486	12,316	14,691	15,217	16,798	18,108	17,975	17,614
Exported TDF and Bales	96,000	135,000	110,000	110,404	94,040	62,476	113,405	135,236	137,432
In-State TDF	61,911	77,209	81,982	83,934	85,721	72,723	75,989	80,603	67,436
Other Recycling	735	0	152	564	533	0	76	3,455	3,160
Civil Engineering	5,915	5,844	4,557	12,632	11,668	10,961	6,436	5,127	13,093
Crumb, Ground, Nugget Rubber	88,135	105,200	79,038	72,887	76,195	64,408	68,142	87,740	80,976
Reuse	87,000	91,000	78,635	84,619	74,285	81,373	89,784	90,617	90,173
Total Managed	**408,000**	**458,000**	**420,000**	**442,311**	**442,358**	**455,168**	**488,153**	**511,262**	**501,563**

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Slide 18 Source Data: Reuse Trend (Tons)

Category	2002	2003	2004	2005	2006	2007	2008	2009	2010
Used Tires (Total)	15,000	18,000	16,000	12,000	21,000	33,800	33,600	37,266	37,942
Used Tires (Domestic)	15,000	18,000	16,000	12,000	21,000	18,000	19,000	20,000	20,000
Used Tires (Exported)	NA	NA	NA	NA	NA	16,000	15,000	18,000	18,000
Retreads	23,000	44,000	44,000	44,000	44,000	44,000	44,200	44,000	36,018
Total Reuse	**38,000**	**62,000**	**60,000**	**56,000**	**65,000**	**78,000**	**78,000**	**82,000**	**74,000**

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019
Used Tires (Total)	45,823	51,678	38,033	42,278	30,927	39,032	41,375	42,692	42,248
Used Tires (Domestic)	28,195	33,448	25,355	24,336	23,800	30,510	34,174	34,512	34,235
Used Tires (Exported)	17,627	18,230	12,678	17,943	7,128	8,522	7,202	8,180	8,013
Retreads	40,651	39,838	40,635	42,341	43,358	42,341	48,409	47,925	47,925
Total Reuse	**87,000**	**91,000**	**78,635**	**84,619**	**74,285**	**81,373**	**89,784**	**90,617**	**90,173**

Slide 19 Source Data: Crumb, Ground and Nugget Rubber Trend (Tons Inbound Tires)

Category	2002	2003	2004	2005	2006	2007	2008	2009	2010
Paving	NA	26,000	27,000	20,000	39,000	39,200	43,200	46,400	50,307
Turf	NA	NA	NA	NA	NA	24,900	24,400	13,420	13,724
Crumb, Ground and Nugget	NA	NA	NA	NA	NA	9,500	11,500	12,897	11,047
Molded/Other	NA	NA	NA	NA	NA	18,500	21,400	11,897	10,443
Total	**58,000**	**60,000**	**62,000**	**52,000**	**66,000**	**92,100**	**100,500**	**84,614**	**85,521**

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019
Paving	48,629	51,600	35,422	34,708	38,736	NA	NA	NA	NA
Turf	16,958	21,552	20,040	16,821	18,686	NA	NA	NA	NA
Crumb, Ground and Nugget	10,611	17,700	14,175	11,404	12,144	NA	NA	NA	NA
Molded/Other	11,937	13,931	9,401	9,953	6,629	NA	NA	NA	NA
Total	**88,135**	**105,244**	**79,038**	**72,887**	**76,195**	**64,408**	**68,142**	**87,740**	**80,976**

Slide 20 Source Data: Tire-Derived Aggregate Trend (Tons)

Category	2002	2003	2004	2005	2006	2007	2008	2009	2010
Landfill Projects	NA	NA	NA	NA	NA	25,500	20,600	13,975	17,924
Non-Landfill Projects	NA	NA	NA	NA	NA	9,800	73	3,535	350
Total Civil Engineering	**30,000**	**18,000**	**12,000**	**20,000**	**33,000**	**35,340**	**27,890**	**17,510**	**18,274**

Category	2011	2012	2013	2014	2015	2016	2017	2018	2019
Landfill Projects	5,915	5,844	2,612	8,806	10,374	7,083	5,583	4,021	6,514
Non-Landfill Projects	NA	NA	1,945	3,826	1,294	3,878	853	1,106	6,580
Total Civil Engineering	**5,915**	**5,844**	**4,557**	**12,632**	**11,668**	**10,961**	**6,431**	**5,127**	**13,093**

Slide 23 Source Data: Export Trend, Part A

Year	Combined TDF and Bales	Baled Tires and Treads	TDF	Used Tires	Miscellaneous Exports	Percent Exported
2002	NA	NA	NA	NA	20,000	5.7%
2003	NA	NA	NA	NA	18,000	4.4%
2004	NA	NA	NA	NA	31,000	7.3%
2005	NA	NA	NA	NA	23,000	5.4%
2006	NA	NA	NA	NA	19,000	4.3%
2007	7,000	NA	NA	16,000	NA	5.2%
2008	22,000	NA	NA	15,000	NA	8.2%
2009	33,000	NA	NA	18,000	NA	12.3%
2010	64,000	NA	NA	18,000	NA	19.8%

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Slide 23 Source Data: Export Trend, Part B

Year	Combined TDF and Bales	Baled Tires and Treads	TDF	Used Tires	Miscellaneous Exports	Percent Exported
2011	96,000	NA	NA	18,000	NA	27.7%
2012	135,000	NA	NA	18,000	NA	33.4%
2013	110,144	NA	NA	12,678	NA	29.2%
2014	NA	36,000	74,000	18,000	NA	29.0%
2015	NA	28,000	66,000	7,128	NA	22.9%
2016	NA	15,000	47,476	8,522	NA	15.6%
2017	NA	26,089	87,317	7,202	NA	24.7%
2018	NA	36,039	99,197	8,180	NA	28.1%
2019	NA	30,985	106,447	8,013	NA	28.7%

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Slide 25 Source Data: Recycling and Diversion Trend, Part A

Year	Tons Disposed	Tons Recycled	Tons Otherwise Diverted	Percent Diverted	Percent Recycled
2002	84,000	146,000	136,000	77.0%	39.9%
2003	105,000	158,000	147,000	74.4%	38.5%
2004	102,000	165,000	155,000	75.8%	39.1%
2005	102,000	151,000	170,000	75.9%	35.7%
2006	114,000	183,000	161,000	75.1%	40.0%
2007	115,000	205,230	113,150	73.5%	47.4%
2008	123,000	206,090	118,390	72.5%	46.1%
2009	113,046	183,629	115,681	72.6%	44.5%
2010	77,993	178,029	156,093	81.1%	43.2%

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Slide 25 Source Data: Recycling and Diversion Trend, Part B

Year	Tons Disposed	Tons Recycled	Tons Otherwise Diverted	Percent Diverted	Percent Recycled
2011	49,700	180,896	178,236	87.8%	44.2%
2012	32,688	202,330	222,695	92.9%	44.2%
2013	53,320	162,263	204,451	87.3%	38.7%
2014	62,579	170,138	209,189	85.9%	38.5%
2015	84,699	162,680	194,978	80.9%	36.8%
2016	146,429	156,741	151,997	67.8%	34.4%
2017	116,214	164,438	207,502	76.2%	33.7%
2018	90,508	186,939	233,814	82.3%	36.6%
2019	91,678	187,402	222,483	81.7%	37.4%

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