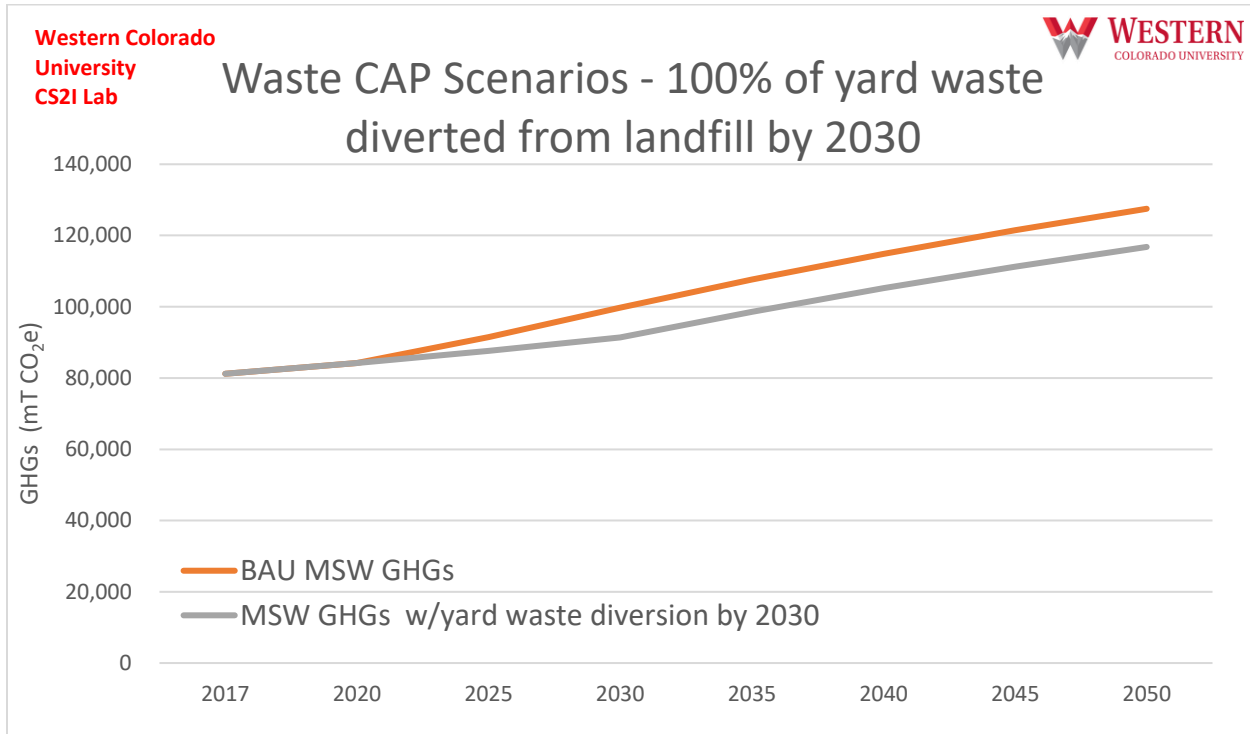


Landfill Diversion Modeling Scenarios

(All units mt CO₂e unless otherwise noted)

Scenario 1: Divert all yard waste from the landfill by 2030



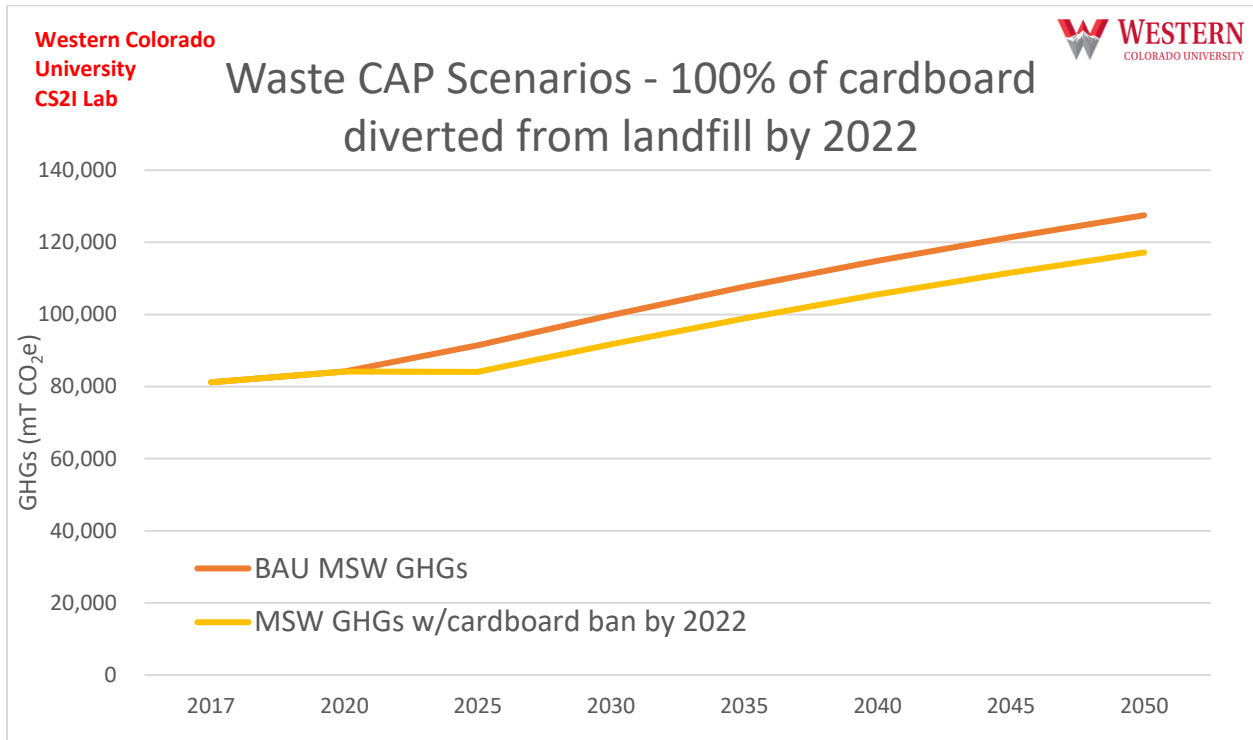
Assumptions:

- 10% reduction annually starting in 2021

Quantitative Results:

	BAU MSW GHGs	MSW GHGs w/yard waste diversion by 2030
2017	81,194	81,194
2020	84,170	84,170
2025	91,463	87,621
2030	99,758	91,378
2035	107,644	98,602
2040	114,878	105,228
2045	121,466	111,263
2050	127,503	116,793

Scenario 2: Ban Cardboard in the landfill by 2022



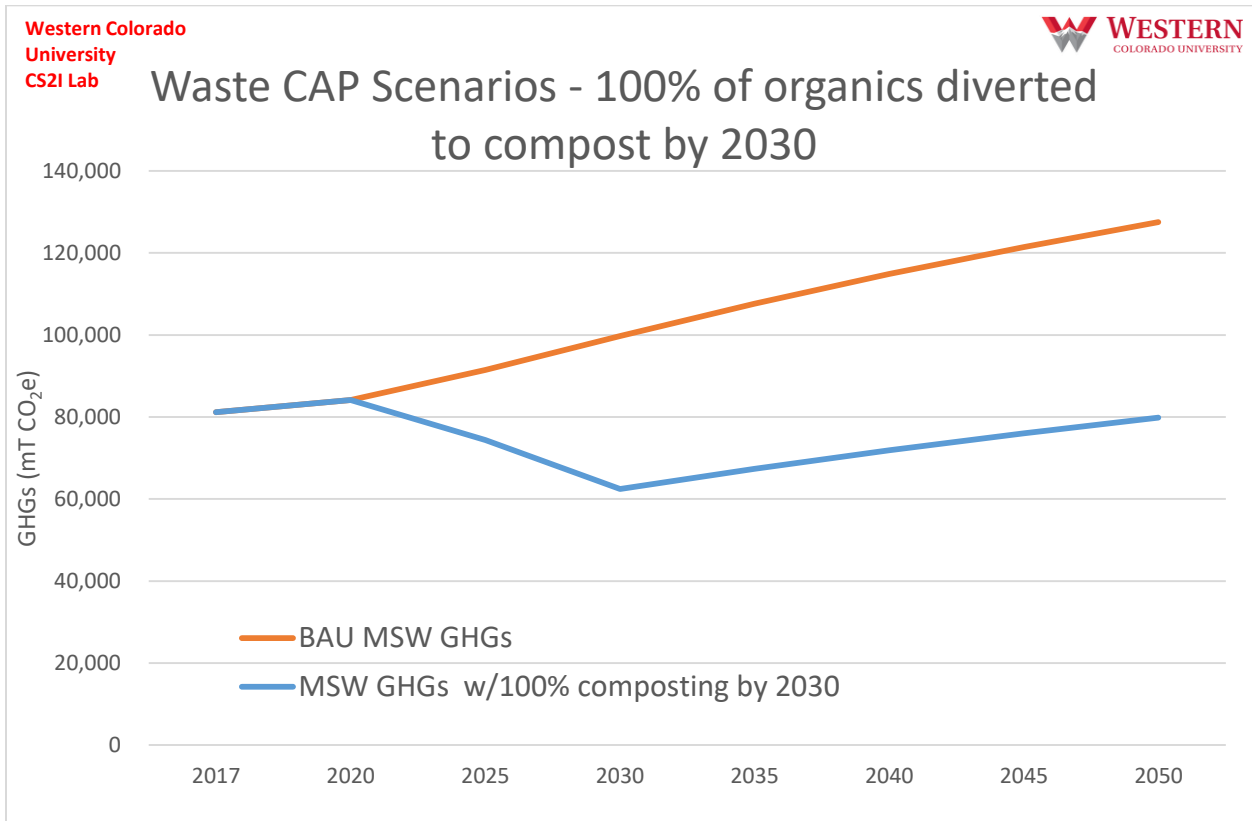
Assumptions:

- 50% reduction 2021, 100% reduction 2022

Quantitative Results:

	BAU MSW GHGs	MSW GHGs w/cardboard ban by 2022
2017	81,194	81,194
2020	84,170	84,170
2025	91,463	84,054
2030	99,758	91,677
2035	107,644	98,925
2040	114,878	105,573
2045	121,466	111,627
2050	127,503	117,175

Scenario 3: Compost 50% of organics by 2025 and 100% of organics by 2030



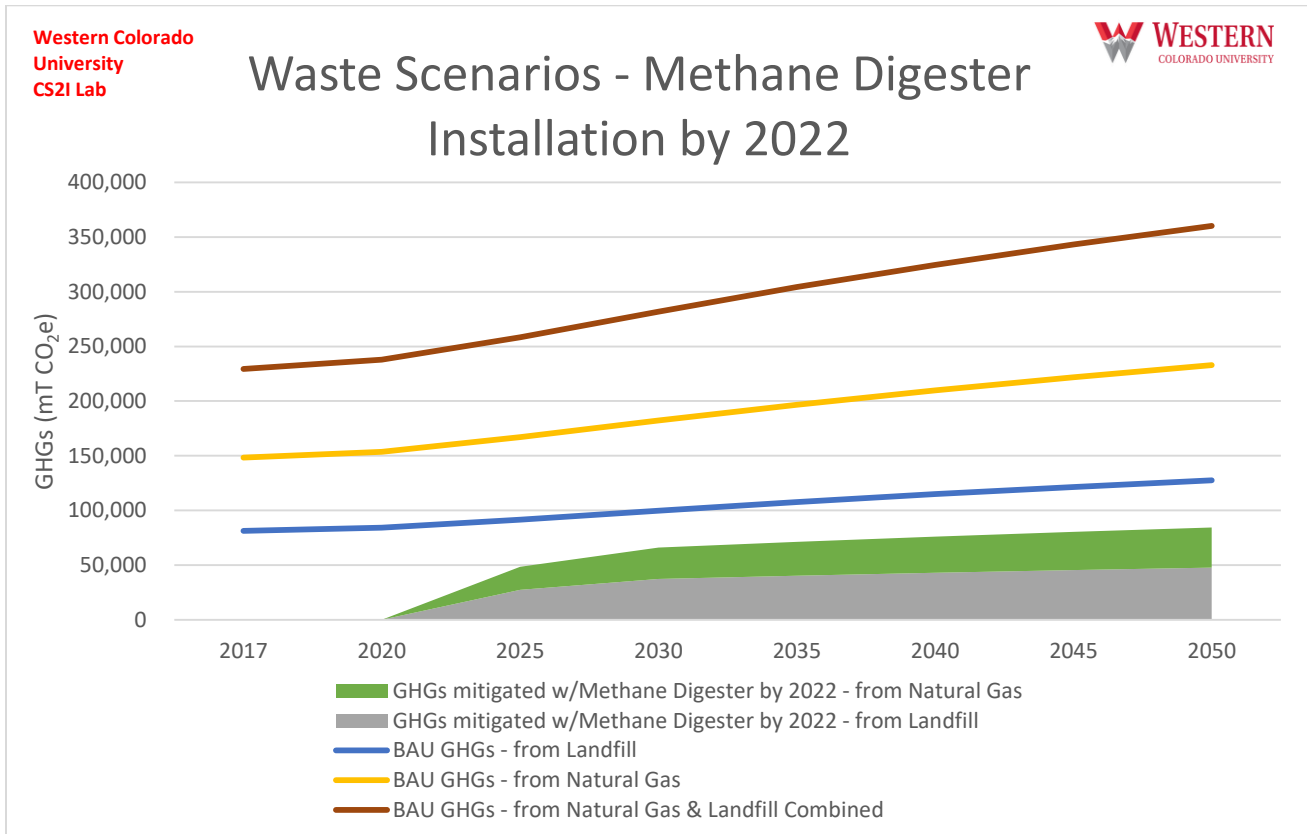
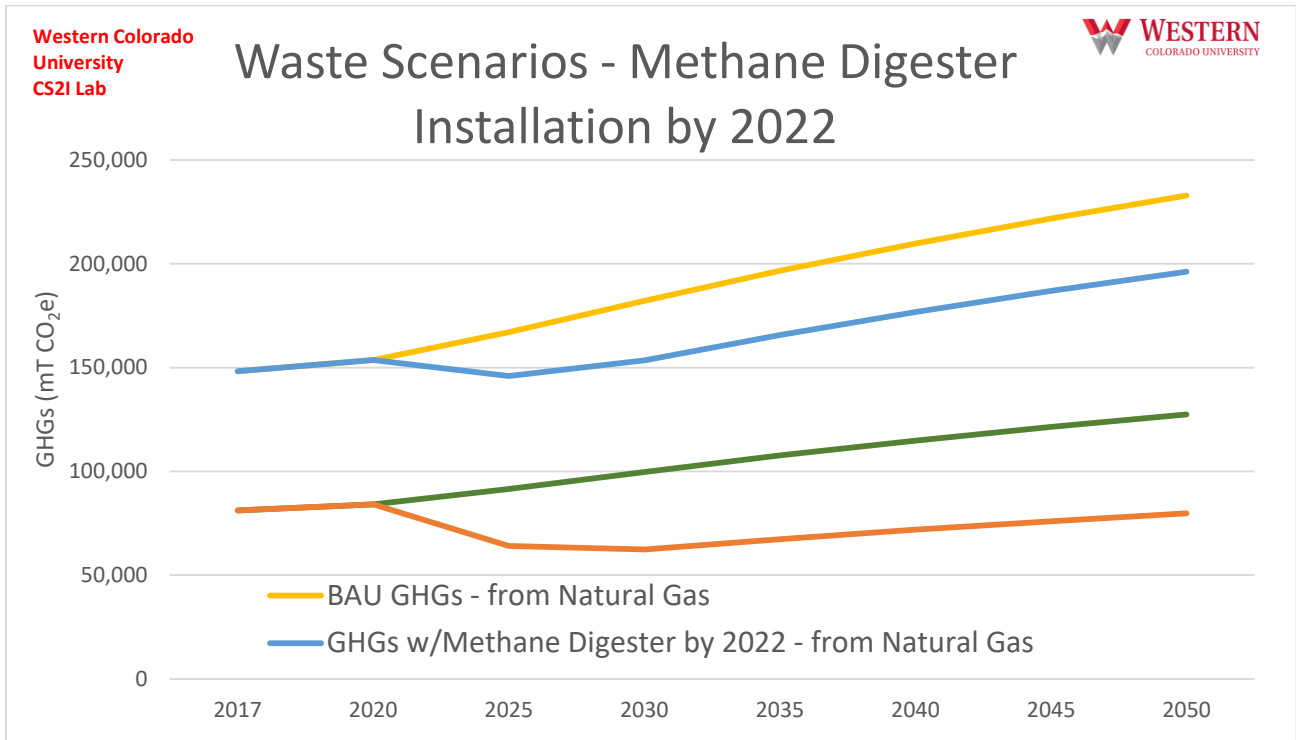
Assumptions:

- 10% conversion to compost annually starting 2021

Quantitative Results:

	BAU MSW GHGs	MSW GHGs w/100% composting by 2030
2017	81,194	81,194
2020	84,170	84,170
2025	91,463	74,359
2030	99,758	62,448
2035	107,644	67,385
2040	114,878	71,914
2045	121,466	76,037
2050	127,503	79,817

Scenario 4: Install methane capture system at landfill in 2022



Assumptions:

- Digester can process 20% of organics in 2022, 40% in 2023 etc. until 100% of organics are digested in 2026

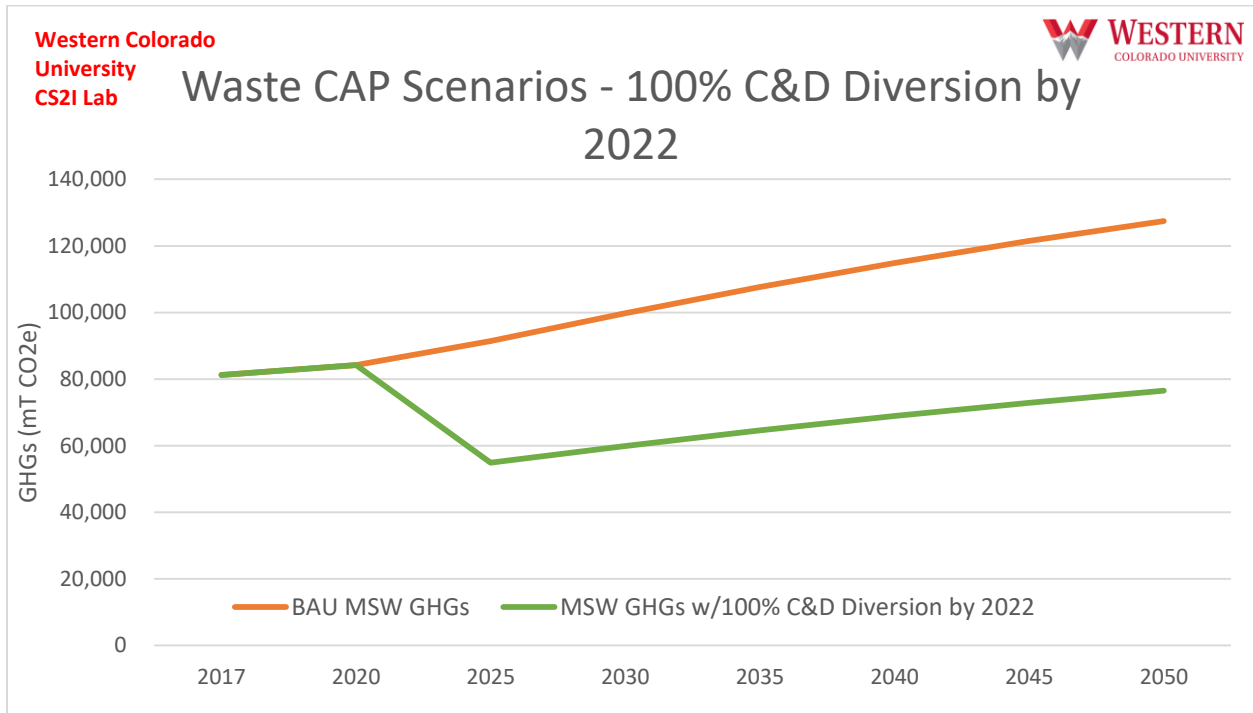
Quantitative Results:

	BAU GHGs - from Landfill	GHGs w/Methane Digester by 2022 - from Landfill	GHGs diverted w/Methane Digester by 2022 - from Landfill	BAU GHGs - from Natural Gas
2017	81,194	81,194	0	148,288
2020	84,170	84,170	0	153,724
2025	91,463	64,097	27,366	167,043
2030	99,758	62,448	37,309	182,193
2035	107,644	67,385	40,259	196,596
2040	114,878	71,914	42,964	209,808
2045	121,466	76,037	45,428	221,839
2050	127,503	79,817	47,686	232,865

	BAU GHGs - from Natural Gas	GHGs w/Methane Digester by 2022 - from Natural Gas	GHGs diverted w/Methane Digester by 2022 - from Natural Gas
2017	148,288	148,288	0
2020	153,724	153,724	0
2025	167,043	145,983	21,060
2030	182,193	153,480	28,713
2035	196,596	165,614	30,983
2040	209,808	176,743	33,065
2045	221,839	186,878	34,961
2050	232,865	196,166	36,699

	Total GHGs diverted w/Methane Digester by 2022	BAU GHGs - from Natural Gas & Landfill Combined
2017	0	229,482
2020	0	237,894
2025	48,426	258,506
2030	66,022	281,951
2035	71,242	304,241
2040	76,029	324,686
2045	80,389	343,304
2050	84,385	360,368

Scenario 5: Adopt and enforce building code requirement for C&D diversion for cardboard, concrete, concrete with rebar, metals, and clean wood.



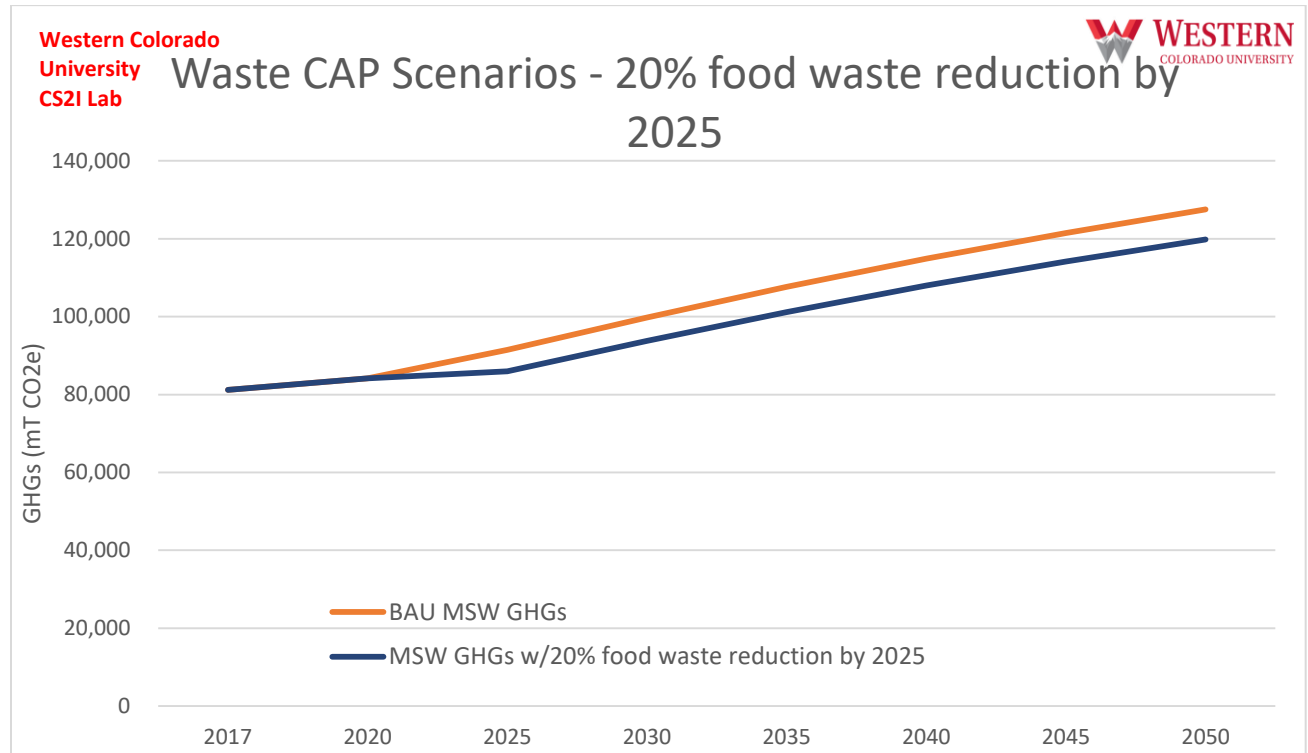
Assumptions:

- All waste - beginning 2022 - 40% is C&D

Quantitative Results:

	BAU MSW GHGs	MSW GHGs w/100% C&D Diversion by 2022
2017	81,194	81,194
2020	84,170	84,170
2025	91,463	54,878
2030	99,758	59,855
2035	107,644	64,587
2040	114,878	68,927
2045	121,466	72,879
2050	127,503	76,502

Scenario 6: 20% Food waste reduction by 2025



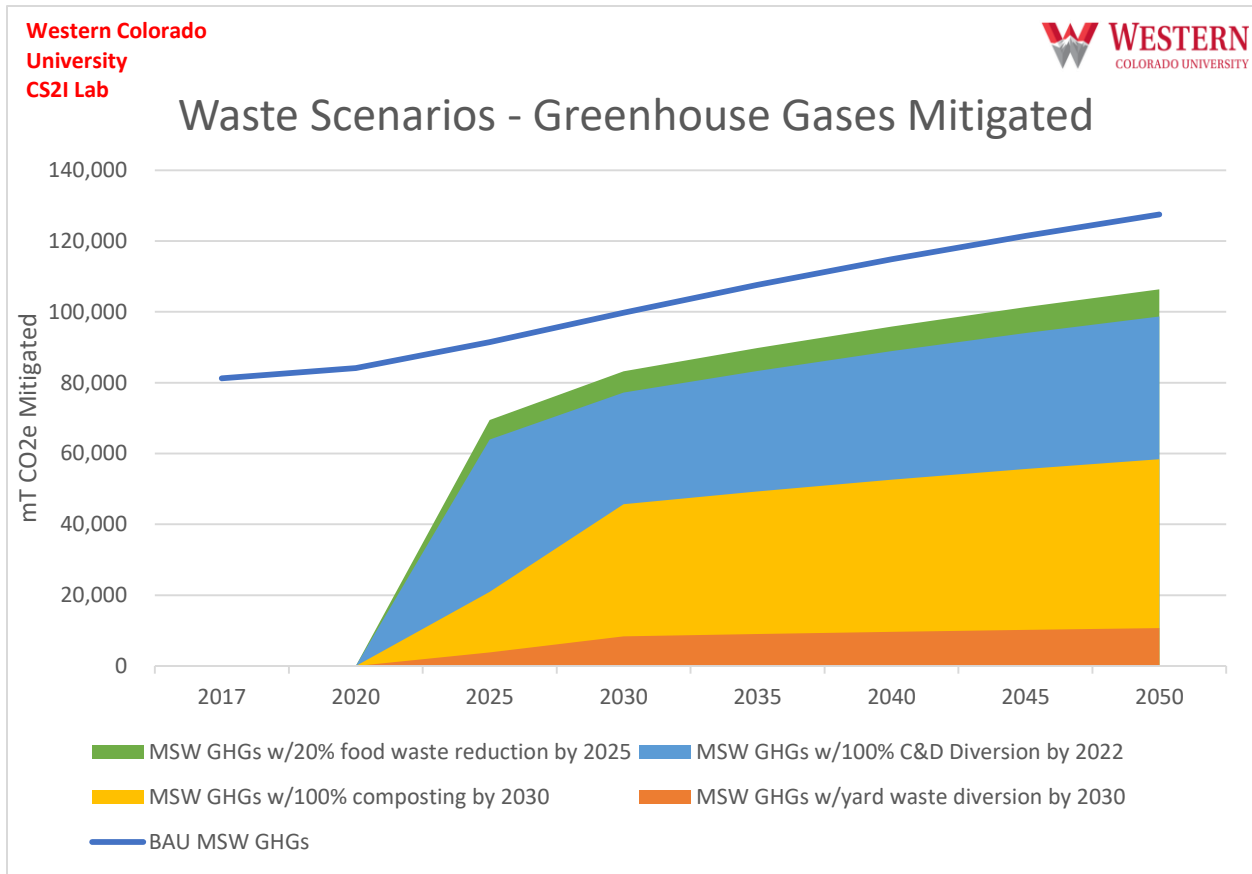
Assumptions:

- 4% reduction annually from 2021 to 2025

Quantitative Results:

	BAU MSW GHGs	MSW GHGs w/20% food waste reduction by 2025
2017	81,194	81,194
2020	84,170	84,170
2025	91,463	85,957
2030	99,758	93,752
2035	107,644	101,164
2040	114,878	107,962
2045	121,466	114,153
2050	127,503	119,827

Mitigation Summary:



Note that not all scenarios are shown because scenario 3 (100% of organics diverted to compost by 2030) encompasses the mitigation from scenarios 4 and 1. Avoided landfill emissions of scenario 3 are equal to that of scenario 4 (100% of organics diverted to methane digester by 2030) and because scenario 1 (100% diversion of yard waste from landfill) is included as organics that would otherwise be diverted as compost.

Overarching assumptions:

- Volume percentages based on NW CO Waste Diversion Study https://westernstatecolorado-my.sharepoint.com/:b:/g/person/valeda_scribner_western_edu/ESGx3u2rp1xLhsE9EUM6x-0Bl41DxKBj7Z21rpOLD9IbVA?e=CPN2Pg

From NW CO Waste Diversion Study

MATERIALS	WEIGHTED AVERAGE
Cardboard/Kraft	8.10%
Food Waste	30.10%
Total Organics	37.40%
C&D	13.90%*

*Municipal waste only. Overall County-wide C&D stream is 40% of landfill volume