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Winter 2023 Solid Waste Forecast

February 2023

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Forecast Summary

Regional waste volumes start to decline in the fourth quarter of 2022 and should continue through the end of 2023, as the economy cools from an aggressive Federal Reserve focus on bringing inflation back under control.

Economics

Gross Domestic Product (GDP): Despite the unexpected growth in real GDP in the fourth quarter of 2022, a mild contraction is still expected to start in this first quarter of 2023 before seeing a modest uptick in the third quarter of 2023. US inflation is still too high, and the Federal Reserve (FED) will continue to tighten financial conditions, which will slow the economy.

Inflation: The US Consumer Price Index stands at 6.5% as of December 2022. The rate peaked at 9.1% in June 2022. Inflation has been slowly declining; it has not fallen to the point at which the FED will ease off from its tight monetary policy. Inflation will likely stay elevated through much of 2023.

Monetary Policy: The FED has been clear that it wants to see lower inflation and it will likely continue to lift the funds rate until inflation falls to 2%. The FED has been raising rates in each of its last several meetings, with more hikes expected. Many believe that the FED will step down their hikes to 25 basis points at its next meeting.

Employment: Part of the FED's aggressive monetary stance is related to continued strength in labor markets. The unemployment rate stands at an extremely low 3.5%. But as FED interest rate hikes cool the economy, higher unemployment is expected. Interest rate-sensitive sectors, including manufacturing, consumer financial services and construction, are expected to bear the brunt of the rate hikes. Job growth in regional construction has very likely peaked and will begin to drift lower.

Mortgage rates: The average 30-year fixed mortgage rate in the US follows the FED funds rate. Rates have been climbing and are currently between 6 and 7%. Mortgage rates may continue to rise temporarily on future rate hikes, but the longer outlook is that rates will ease as inflation declines.

Housing and Construction: The run-up in mortgage and other interest rates since the FED committed to tightening financial conditions has caused affordability and other issues for homebuyers and remodelers looking to finance larger projects. Here in the Portland region, the median sale price for a single-family house has eased since peaking last summer and prices have topped out in this real estate cycle. Homebuilders believe the building cycle is coming down quickly, and virtually every indicator for the residential market has turned down.

Economic Risks: The baseline forecast reflects a mild, two-quarter contraction beginning this first quarter 2023, with a 55% probability. There is a 25% chance that the US economy could contract faster and longer. This puts the chance of a "soft-landing", where the economy skirts a contraction, in the unlikely category.

Forecast Summary

Solid Waste

Regional Waste Outlook: In forecasting, expecting near-term inflection points (as we did last quarter) is always a nerve-racking proposition, but it is a rare and wonderful thing when those expectations come true as they did this quarter. As expected, regional garbage posted year-on-year declines in the 4th quarter of 2022. The outlook is to see continued, steeper declines in waste tonnage throughout calendar year 2023 before growth resumes in 2024. This outlook is lower than the one made in the fall, particularly for the current calendar year 2023, but "catches" up to the fall forecast in the medium term.

Source-Separation: Additional food waste capture from the garbage stream is expected to occur through the Business Food Waste Program (BFWP), but also through new curbside residential programs in the cities of Tigard, Sherwood, King City and Durham. These jurisdictions have approximately 32,000 households and should generate a combined 10,000 new tons of mixed yard debris and food waste (or about 650 tons of food waste- only) per year. The BFWP recovery should begin modestly, with about 6,000 additional tons this calendar year 2023 and grow from there. By the beginning of 2025, the quantity of additional capture should reach 27,000 tons per year.

Waste Distribution: Metro finished calendar year 2022 with more than 42% of the region's wet waste. Just last quarter, we expected a little less than 40% for 2022. Two variables contributed to the sudden change. The first is the total wet waste outlook for the year, which was set in fall of 2021 with an outlook of about 779K tons. The outlook was subsequently revised fall of 2022 to 751K tons, and actuals came in at 751K tons. Because fixed allocation amounts for calendar year 2022 were made based on the 779K and we achieved 28K less for the year, we would expect Metro to suffer the loss and get less than the planned 40%. But Metro got MORE than 40% because of the second variable at play, which is how much private facilities use their tonnage allocations for the year. While allocation "utilization" varies by facility and is extremely difficult to forecast, the assumption made in fall 2021 was that 99% of the tons allocated would be used by the private facilities. At the end of calendar year 2022, private facilities used less than 93% of their allocated tonnage, allowing the residual to flow back to Metro stations. The combination of these two unknowns (how much regional waste we will get, and how high utilization will run) make hitting the 40% target extremely difficult. For the current calendar year 2023, utilization assumptions were relaxed to about 97%, and for subsequent years to a little over 93%.

Post-collection Recovery: Average regional mixed-waste recovery rates at private facilities continued to fall, hitting about 15% in calendar year 2022. The assumption is that these declines will stabilize and remain at this level moving forward.

Forecast Flash

	Calendar Quarter					Calendar Year			
	2022:4	2023:1	2023:2	2023:3	2023:4	2022	2023	2024	2025
Key Economic Drivers* (seas-adj)									
Consumer Sentiment Index	59	56	53	58	62	59	57	79	93
change (%)	4.4	(5.1)	(4.0)	9.2	7.1	(24.1)	(2.6)	37.3	18.7
change from fall fc (%)	(37.5)	(41.0)	(43.6)	(38.5)	(34.0)	(33.1)	(39.3)	(16.7)	(1.5)
Home Prices (real)	128	124	120	118	117	132	120	116	117
change (%)	(3.2)	(3.0)	(3.3)	(1.9)	(0.8)	5.4	(9.0)	(3.0)	0.8
change from fall fc (%)	(6.4)	(9.7)	(13.2)	(14.7)	(15.6)	(2.6)	(13.3)	(16.0)	(14.6)
Mortgage Rates (real)	6.43	6.40	6.36	6.25	6.10	5.16	6.28	5.60	5.06
change (%)	18.3	(0.5)	(0.6)	(1.8)	(2.4)	77.3	21.6	(10.8)	(9.7)
change from fall fc (%)	79.9	71.8	65.3	59.2	52.0	55.3	61.9	33.4	13.6
GDP (real, \$T)	20.2	20.1	20.0	20.1	20.2	20.0	20.1	20.5	20.9
change (%)	0.6	(0.4)	(0.2)	0.4	0.5	2.0	0.5	1.8	2.0
change from fall fc (%)	(1.5)	(2.5)	(3.2)	(3.5)	(3.7)	(1.0)	(3.2)	(4.1)	(4.6)
Construction:Total Emp (ratio)	6.7	6.7	6.6	6.5	6.5	6.6	6.6	6.3	6.2
change (%)	1.3	(1.0)	(1.2)	(1.1)	(0.2)	0.8	(0.6)	(3.3)	(1.8)
change from fall fc (%)	5.4	5.0	4.4	4.0	4.5	2.7	4.5	3.2	1.7
Home Permits (4QMA, thous)	3.2	3.0	2.8	2.5	2.4	13.9	10.8	9.8	11.7
change (%)	(4.8)	(7.4)	(4.4)	(10.7)	(4.8)	(1.7)	(22.6)	(9.3)	19.5
change from fall fc (%)	(20.7)	(26.3)	(29.0)	(36.0)	(38.5)	(14.7)	(32.4)	(36.4)	(22.9)
Tri-County Core Tons (thous)	358	329	358	369	338	1,493	1,394	1,419	1,469
yo change (%)	(2.3)	(9.6)	(7.0)	(4.3)	(5.7)	0.8	(6.6)	1.8	3.5
change from fall fc (%)	---	(3.8)	(3.8)	(3.8)	(3.7)	0.0	(3.8)	(1.7)	0.4
Wet Tons Avail. For Alloc. (thous)	188	170	175	176	177	751	698	698	712
yo change (%)	0.1	(6.7)	(9.3)	(6.7)	(5.6)	0.5	(7.1)	0.1	2.0
change from fall fc (%)	---	(4.3)	(4.3)	(4.3)	(4.3)	(0.0)	(4.3)	(2.5)	(0.9)
	Calendar Quarter					Fiscal Year (ending)			
	2022:4	2023:1	2023:2	2023:3	2023:4	2022	2023	2024	2025
Metro Enterprise Tons									
MSW (thous)	134	124	134	136	128	576	536	532	552
yo change (%)	(10.0)	(9.6)	(7.8)	(5.8)	(4.3)	5.8	(7.0)	(0.7)	3.7
change from fall fc (%)	---	(3.5)	(3.6)	(3.7)	(3.4)	0.0	1.8	(1.4)	1.9
Res. Organics (thous)	11.1	8.7	16.2	11.4	12.9	47.6	46.8	49.2	49.2
Com. Organics (thous)	3.1	3.5	3.6	4.0	3.9	11.1	13.3	20.8	28.9
Wood (hunds)	2.4	3.7	4.3	4.9	3.8	19.3	13.8	16.6	16.6
Yard debris (thous)	3.4	2.9	5.6	3.9	4.0	16.9	15.6	16.3	16.3
Staffed (thous)	72	67	88	91	66	343	321	317	330
Automated (thous)	29	27	29	30	28	120	116	117	123
Regional Fee/Tax Revenue Tons									
Regional System Fee (thous)	366	341	362	369	349	1,509	1,462	1,433	1,470
yo change (%)	0.1	(8.2)	(6.6)	(6.0)	(4.8)	5.0	(3.2)	(2.0)	2.6
change from fall fc (%)	---	(3.3)	(3.4)	(3.5)	(3.3)	0.0	(1.3)	(2.4)	(0.5)
Excise Tax (thous)	371	345	367	374	353	1,528	1,482	1,453	1,490
Environmental Cleanup (thous)	28	44	47	53	47	244	176	194	200
Community Enhancement (thous)	275	250	282	276	269	1,147	1,092	1,090	1,118

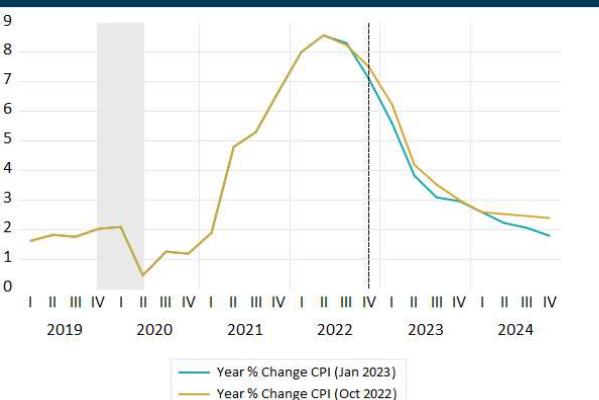
* Forecasts are from IHS/Markit and Northwest Economic Research Center

Forecast Flash

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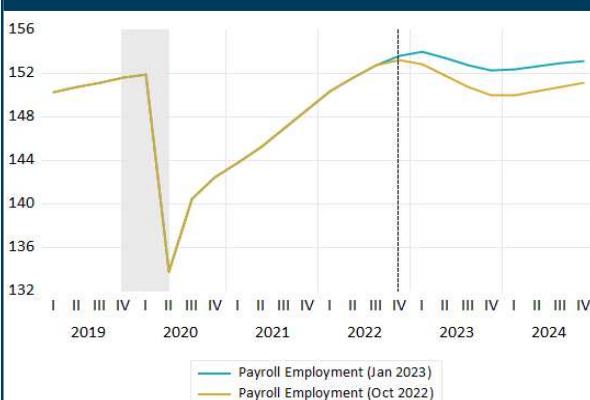


Peak inflation may be behind us, but it's still high and eroding consumer confidence



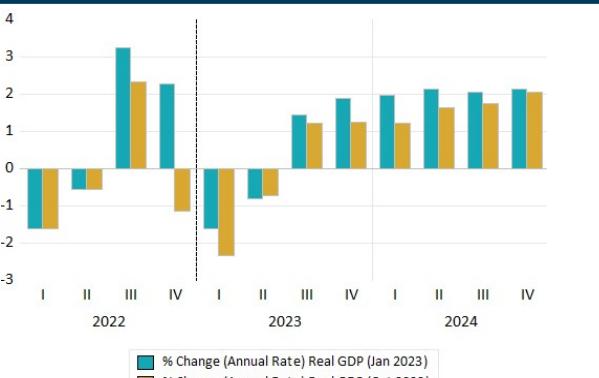
Source: IHS Markit, Bureau of Labor Statistics (BLS)

Labor markets remain resilient, which is why the FED is steadfast in its inflation battle



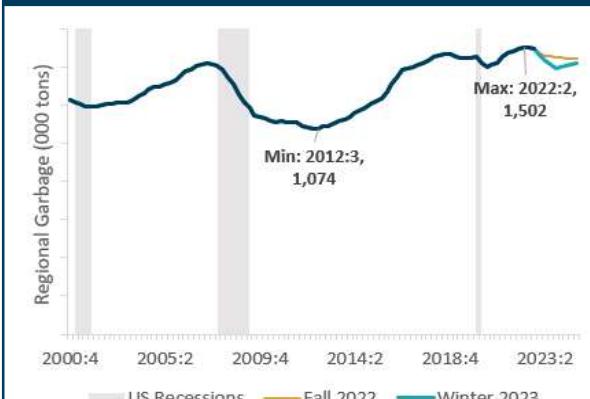
Source: IHS Markit, BLS

US GDP expected to contract in Q1 and Q2 of 2023, before modest growth returns



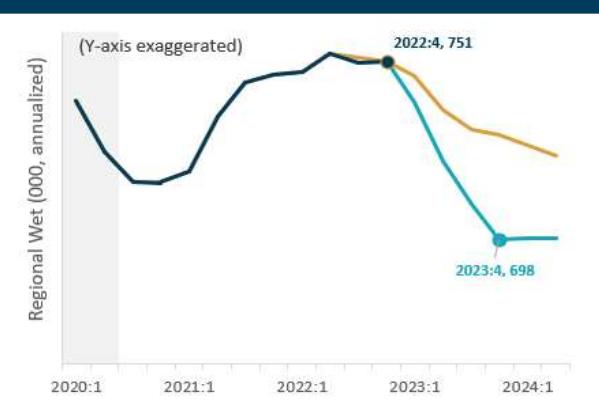
Source: IHS Markit, Bureau of Economic Analysis

As expected, regional garbage volumes begin to decline in Q4 of 2022; thru end of 2023



Source: National Bureau of Economic Research, Metro

Wet waste declines steeper due to new residential FW curbside programs



Source: National Bureau of Economic Research, Metro

Metro transfer stations benefit from lower private station wet allocation use



Source: Metro

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Consumer Sentiment	Declines continue through mid-2023; Declines of -3% in 2023, increasing 37% in 2024, and another 19% increase in 2025	Lower outlook over the next couple years; 39% lower in 2023, 17% lower in 2024, about even in 2025
Real (inflation-adjusted) home prices	Declines that started last quarter continue through the end of 2023; Year-on-year declines of 9% in 2023, followed by declines of 3% in 2024; 2025 is flat	Lower outlook over all the next few years; 13% lower in 2023, 16% lower in 2024, 15% lower in 2025
Real (inflation-adjusted) mortgage rates	Rates increase by about 22% in 2023, before declining by 11% in 2024, and another 10% in 2025	Higher outlook over all the next few years; 62% higher in 2023, 33% higher in 2024 and 14% higher in 2025
Real (inflation-adjusted) GDP	Flat in 2023, growth of 1.8% in 2024, and then 2.0% in 2025	Lower outlook over all the next few years; 3.2% lower in 2023, 4% lower in 2024 and 5% lower in 2025
Ratio of Portland MSA construction to total employment	Ratio flat to slightly down in 2023, declines by 3% in 2024, and another 2% in 2025	Higher outlook in 2023 (4 and ½% higher) 2024 (~3% higher), and 2025 (~2% higher)
Portland MSA home permits	Declines that started in mid-2022 continue through the beginning of 2024; posting decreases of -9%, in 2024, and growth of 20% in 2025	Lower outlook over all the next few years; 32% lower in 2023, 36% lower in 2024, and 23% lower in 2025

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Additional commercial food waste capture	Business Food Waste Program Groups 1 and 2 in compliance by Sept. 30, 2023. Group 3 No change in compliance by Sept. 30, 2024.	
Additional residential food waste capture	The cities of Tigard, Sherwood, King City and Durham's 32,000 households add another ~10K per year in capture.	10,000 more tons per year (or about 650 tons of food diversion from garbage)
Wet waste allocations and utilizations	98% in 2023, 96% in 2024 and beyond	Lower (~1%) use in 2023, significantly lower use in 2024 and beyond (~3%)
Metro dry waste share	No major disruptions ensure steady 36% share	No change
Metro organics waste shares	Residential and commercial shares steady at about 34% and 60%, respectively (incl. some of Tigard's residential program)	No change
Private facility mixed dry waste recovery	Rates stabilize at ~15% in 2023 and beyond over horizon	Lower rates (~2% lower)
Pre-consumer "special" wastes	Flat in 2023, and then grows slightly (3%) in 2024 and beyond	No change