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# Winter 2023

## Solid Waste Forecast

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### Executive Contact

**Marta McGuire**

Waste Prevention and Environmental Services Director  
[marta.mcguire@oregonmetro.gov](mailto:marta.mcguire@oregonmetro.gov)

### Technical Contacts

**Joel Sherman**

Senior Data Scientist/Forecaster  
[joel.sherman@oregonmetro.gov](mailto:joel.sherman@oregonmetro.gov)

**Dennis Yee**

Metro Economist  
[dennis.yee@oregonmetro.gov](mailto:dennis.yee@oregonmetro.gov)

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600 NE Grand Ave,  
Portland, OR 97232-2736  
503-797-1700

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## Metro Economic Advisors

### Josh Harwood

Fiscal & Tax Policy Director  
josh.harwood@oregonmetro.gov

### Joel Sherman

Senior Data Scientist/Forecaster  
joel.sherman@oregonmetro.gov

### Dennis Yee

Metro Economist  
dennis.yee@oregonmetro.gov

### Luis Sandoval

Senior Solid Waste Planner  
luis.sandoval@oregonmetro.gov

## Solid Waste Forecast Review Panel

### Tom Chaimov

Garbage and Recycling Operations Program  
Director  
tom.chaimov@oregonmetro.gov

### Marissa Grass

Public Affairs Specialist  
marissa.grass@oregonmetro.gov

### Warren Johnson

Standards and Compliance  
Program Manager  
warren.johnson@oregonmetro.gov

### Jon Mayer

Community and Environmental Services  
Program Director  
jon.mayer@oregonmetro.gov

### Phillip McCreary

Waste Prevention and Environmental  
Services Finance Manager  
phillip.mccreary@oregonmetro.gov

### Courtney Patterson

Asset and Environmental Stewardship  
Program Director  
courtney.patterson@oregonmetro.gov

### Pam Peck

Policy and Compliance Program Director  
pam.peck@oregonmetro.gov

### Cary Stacey

Waste Prevention and Environmental  
Services Deputy Director  
cary.stacey@oregonmetro.gov

### Molly Vogt

Analytics Manager  
molly.vogt@oregonmetro.gov

### Cinnamon Williams

Financial Planning Director  
cinnamon.williams@oregonmetro.gov

## 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.

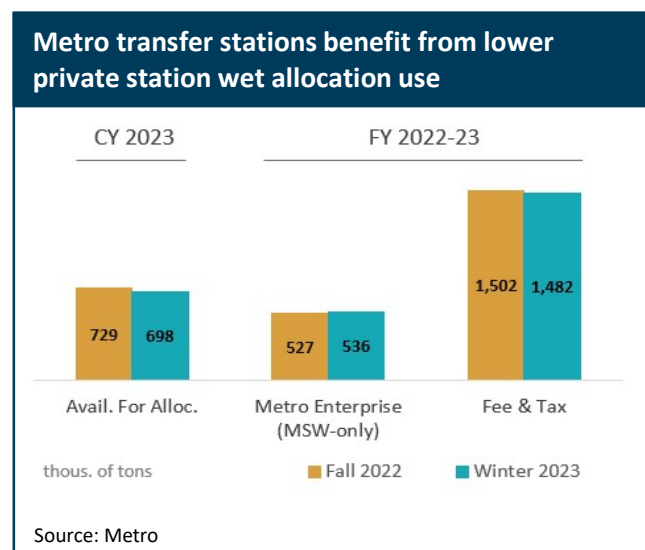
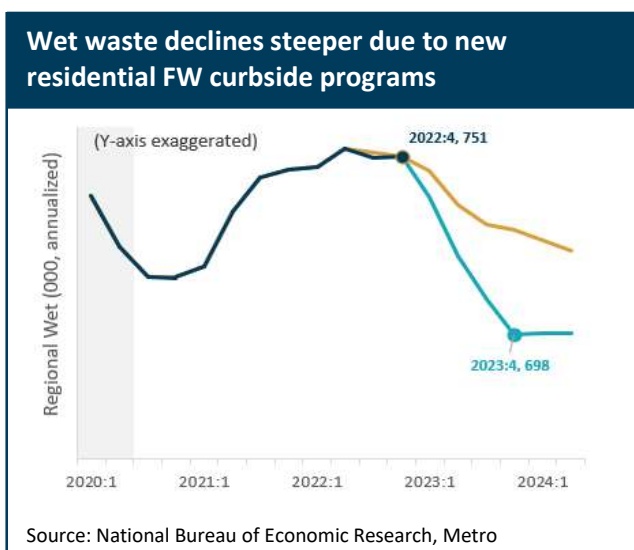
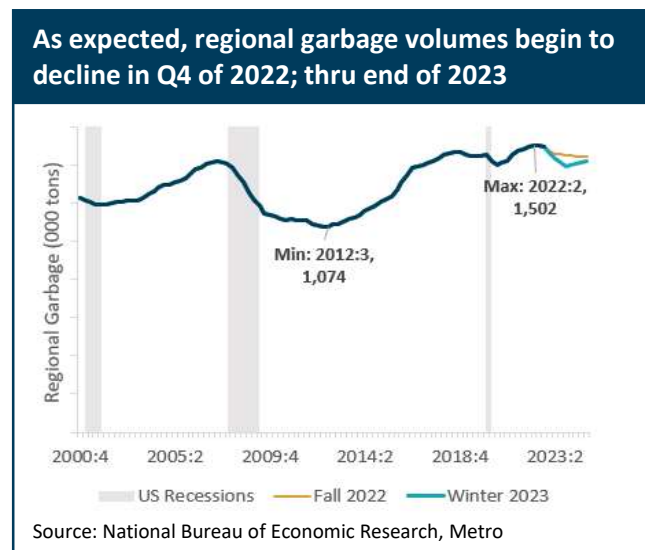
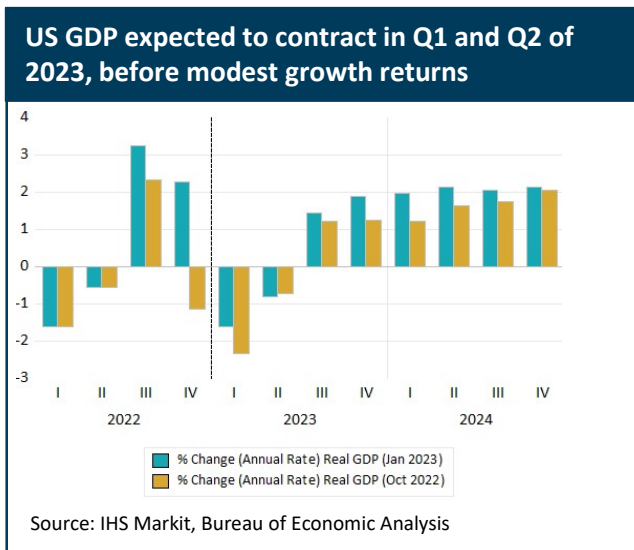
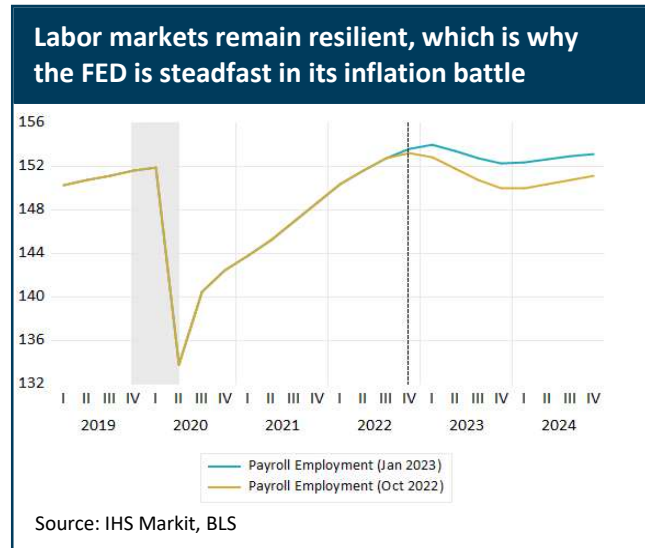
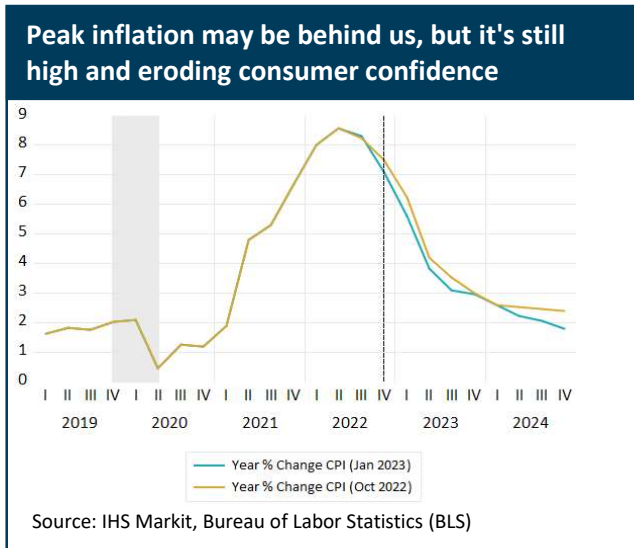
**Forecast Flash**

	Calendar Quarter					Calendar Year			
	2022:4	2023:1	2023:2	2023:3	2023:4	2022	2023	2024	2025
<b>Key Economic Drivers* (seas-adj)</b>									
Consumer Sentiment Index	59	56	53	58	62	59	57	79	93
<i>change (%)</i>	4.4	(5.1)	(4.0)	9.2	7.1	(24.1)	(2.6)	37.3	18.7
<i>change from fall fc (%)</i>	(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
<i>change (%)</i>	(3.2)	(3.0)	(3.3)	(1.9)	(0.8)	5.4	(9.0)	(3.0)	0.8
<i>change from fall fc (%)</i>	(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
<i>change (%)</i>	18.3	(0.5)	(0.6)	(1.8)	(2.4)	77.3	21.6	(10.8)	(9.7)
<i>change from fall fc (%)</i>	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
<i>change (%)</i>	0.6	(0.4)	(0.2)	0.4	0.5	2.0	0.5	1.8	2.0
<i>change from fall fc (%)</i>	(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
<i>change (%)</i>	1.3	(1.0)	(1.2)	(1.1)	(0.2)	0.8	(0.6)	(3.3)	(1.8)
<i>change from fall fc (%)</i>	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
<i>change (%)</i>	(4.8)	(7.4)	(4.4)	(10.7)	(4.8)	(1.7)	(22.6)	(9.3)	19.5
<i>change from fall fc (%)</i>	(20.7)	(26.3)	(29.0)	(36.0)	(38.5)	(14.7)	(32.4)	(36.4)	(22.9)
<b>Tri-County Core Tons (thous)</b>									
yoy change (%)	358	329	358	369	338	1,493	1,394	1,419	1,469
<i>change from fall fc (%)</i>	(2.3)	(9.6)	(7.0)	(4.3)	(5.7)	0.8	(6.6)	1.8	3.5
<i>change from fall fc (%)</i>	---	(3.8)	(3.8)	(3.8)	(3.7)	0.0	(3.8)	(1.7)	0.4
<b>Wet Tons Avail. For Alloc. (thous)</b>									
yoy change (%)	188	170	175	176	177	751	698	698	712
<i>change from fall fc (%)</i>	0.1	(6.7)	(9.3)	(6.7)	(5.6)	0.5	(7.1)	0.1	2.0
<i>change from fall fc (%)</i>	---	(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
<b>Metro Enterprise Tons</b>									
MSW (thous)	134	124	134	136	128	576	536	532	552
yoy change (%)	(10.0)	(9.6)	(7.8)	(5.8)	(4.3)	5.8	(7.0)	(0.7)	3.7
<i>change from fall fc (%)</i>	---	(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
<b>Regional Fee/Tax Revenue Tons</b>									
Regional System Fee (thous)	366	341	362	369	349	1,509	1,462	1,433	1,470
yoy change (%)	0.1	(8.2)	(6.6)	(6.0)	(4.8)	5.0	(3.2)	(2.0)	2.6
<i>change from fall fc (%)</i>	---	(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

Color Key:



## 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 in compliance by Sept. 30, 2024.	No change
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