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Spring 2022
Solid Waste Forecast

Executive Summary

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Forecast Summary

Inflation is not a transitory problem anymore, and supply chains are still disrupted. This will dampen consumer confidence and impact household wealth, especially in the short-term. Regional garbage continues to grow, but a peak looks likely around this time next year.

Economics

Gross Domestic Product: The US economic recovery is still intact, but real GDP growth in the first quarter of this year was downgraded significantly to -1.4% (an outright decline), and growth for the whole of 2022 was downgraded to 3.0% (down from our fall forecast of 4.3%). Several factors are responsible for this diminished outlook, including Russia's invasion of Ukraine, prolonged high inflation, and continued supply-chain shocks that have agitated food, energy, and other commodities markets. Consumer confidence plunged sharply with the emergence of the Omicron variant and elevated consumer prices. Sentiments sank even lower on news of Russia's invasion of Ukraine. The Federal Reserve (FED)'s pivot to a less accommodative monetary policy stance will also further dampen growth moving forward.

COVID recovery: Baseline projections of future growth trends continue assuming the pandemic will transition to an endemic illness. The sudden emergence of the Omicron variant of the COVID-19 in December and January put consumers on alert and delayed further enhancements from the re-opening economy. This resulted in much slower consumer spending than expected. Nevertheless, Omicron concerns have been receding COVID-19 vaccination rates are still steadily rising (~77% of US population as of April 22), and consumers will return to activities resembling pre-recession trends.

Fiscal stimulus: The US outlook has yet to include the economic impact of the Build Back Better (BBB) proposal as its enactment is far from certain. Analysts who have studied the BBB legislation believe that its passage would have very little stimulus on economic growth. With the end of pandemic-era enhanced unemployment insurance benefits and stimulus checks, the economic lift from these fiscal packages has faded and no additional boost to real GDP growth is anticipated. Additional stimulus is unlikely given heightened inflation concerns.

Inflation: Inflation is up dramatically, and likely to accelerate before moderating. The March CPI reading rose to 8.5% (y/y %change) and could rise higher in coming months before tapering later this year on the resolution of supply disruptions. The CPI inflation forecast was adjusted to 6.2% for 2022 from our fall forecast of 3%. Supply disruptions continue to throttle output of goods and services, driving prices up. Higher material and labor costs along with ongoing delivery delays and shortfalls in key commodities raise production costs. Rising order books and mounting backlogs, along with supply disruptions are applying pressure to consumer prices. Heightened inflation is expected to be prolonged to the end of this year while supply difficulties persist.

Forecast Summary

FED monetary policy: The FED has been pivoting to a more restrictive monetary policy to trim inflation rates. The FED recently concluded its taper of asset purchases (i.e., LSAP) to zero in mid-March. The FED also sped up its timetable for lifting interest rates because of heightened inflation concerns. The FED is no longer claiming inflation is "transitory" and moved to raise its target Fed funds rate by 25 basis points to ¼% to ½% in a bid to slow US inflation rates. Several more rate hikes are expected – adding up to a total this year of 125 to 175 basis point increase, or for a Fed funds rate of about 2% or higher at year's end. If not for the uncertainty of the economic fallout from the Russia-Ukraine war, the FED would have raised rates by 50 basis points. As it is, the FED is believed to want to "front-load" a schedule of rate increases to forcefully stem the tide of higher consumer prices. Depending on inflation pressures and US employment conditions, the FED is likely to begin reducing its portfolio of Treasury and mortgage-backed securities (MBS) at some point in the 2nd half of this year, if not sooner.

US Employment outlook: Employment rebounded sharply with re-openings of the economy and availability of vaccines, but since then, the recovery has been grudgingly slower. Emergence of new coronavirus variants continued to pose health concerns and caused smaller fits in the labor markets. Demand for labor seems to have put that all in the past as high-frequency employment indicators point to robust employment opportunities going forward. On the other hand, the labor supply has been more hesitant in its return. The labor force participation rate remains well below its pre-recession rate, but has shown indications of edging up slowly. Despite some reluctance, total payroll employment is expected to eventually reach its pre-recession level around the third quarter of this year.

Mortgage interest rate: As of the end of April, the interest rate on 30-year fixed mortages stands at 5.11%, which is significantly up from where it was a year ago. Mortgage rates are expected to rise further in coming months as the FED works to clamp down on inflation.

Housing and Construction: The National Association of Home Builders (NAHB) housing market index (HMI) showed builders were still optimistic, but readings in the last several months have shown some easing. The cost of goods used in residential construction climbed 1.4% (m/m) in March on the heels of a 2.2% rise in February and 4.1% in January, according to national NAHB reports. Higher home prices are leading more first-time buyers to give up on home searches with the rise in mortgage rates eroding affordability and interest in home onwership. Home production is likely to begin falling later this year as pressure from higher interest rates, higher production costs and slower home sales influence residential construction. Recently, non-residential construction has reflected strength in building more warehousing and manufacturing facilities because of strong gains in the demand for goods and the need by producers to inventory safety stocks of raw materials. The outlook for construction employment is expected to flatten, tempered by offsets between residential construction, which is likely to moderate, and non-residential construction, which is likely to rise.

Forecast Summary

Regional employment trends: The recovery in Portland metro area employment remains intact with the Omicron variant fading and leaving regional job growth largely unfazed. Any fallout from the Russia-Ukraine war has yet to filter down to the regional economy (though a shock may be coming). The latest reading for regional employment has payroll employment steadily edging closer to its pre-recession peak by the third quarter of this year. The region's unemployment rate, on a seasonally-adjusted basis, fell to 3.8% in March. A reading this low signals the region is near full employment.

Economic Risks: Risk alternatives are murkier today than they were 6 months ago for a number of reasons, including the Russia-Ukraine war, higher consumer prices, supply-chain disruptions, COVID-19 and FED actions to combat inflation. Risk of a pessimistic growth scenario that includes a moderate recession or stagflation is now 35%, compared to a 20% probability from last autumn. "Stagflation" (stagnant GDP growth plus high inflation) is a growing concern.

Solid Waste

Regional Waste Outlook: Regional garbage volumes continued to grow through the first quarter of 2022, posting year-over-year increases of a little over 4%. Tonnage growth should continue through the first quarter of 2023, after which, growth should slow considerably, potentially even cease altogether (no growth, or flat) as the business cycle matures. As we alluded to last time, the construction sector's non-putrescible waste volumes are doing all the heavy lifting. In fact, putrescible waste has been coming in below where we thought it would in our Fall 2021 forecast, and should finish the calendar year 2022 about 25,000 tons lower than expected. What gives? Well, in short, and as we reported last time, consumers aren't happy right now. Consumer sentiment plummeted by almost 10% in the first quarter, and while it's set to grow again next year and beyond, the current outlook is almost 20% below where we thought it'd be from the Fall. Adjusted for inflation, home prices are almost 2 percent lower than we thought, and mortgage rates are well over 20% higher than we thought,due to decisive actions from the FED on lifting the federal funds rate. Inflation is persistently high right now, and as long as that's the case, real household wealth will be hampered, and tonnage growth will be diminished.

Source-Separation: In terms of the upcoming solid waste programs and policy decisions that will pull waste OUT of the garbage stream and put further downard pressure on tonnage growth, we still assume additional capture from the upcoming implementation of the Business Food Waste Program (BFWP). As we've been reporting now for several quarters, that program is expected to begin capturing significant amounts of additional food waste from garbage beginning later next year. By early 2025, the amount of additional capture is expected to reach 27,000 tons per year. This should cause wet waste to run flat next year in 2023, and to decline by about 1% in 2024.

Forecast Summary

Waste Distribution: At the same time that our regional putrescible waste outlook is lower than we expected, the non-putrescible waste outlook is higher, and Metro transfer stations' market share of that waste is also running higher (~36%). As a result, garbage volumes to Metro should grow moderately through the current fiscal year 2021-2022, and then largely move sideways thereafter, as wet waste declines materialize, and the economic conditions supporting construction and demolition waste moderate. In addition to MSW, Metro's take of regional organics waste will also take a hit, starting early next year. Approximately 6 months of construction should permanently divert about 25,000 tons per year of residential organics, and temporarily divert about 8,000 tons of commercial organics for the duration of the project. Because of the earlier-than-expect onset of putescible waste declines and the expectation of being about 25,000 tons short of Fall expectations by year-end, Metro is currently expected to receive slightly less than 40% of regional putrescible waste this year.

Post-collection Recovery: The other opportunity for diverting recyclables from the waste stream occurs after waste is collected by haulers and delivered to solid waste facilities. This "post-collection" recovery has struggled over the last several years. The closures of several important local urban wood waste markets have made it hard for facilities to extract value, largely from the non-putrescible waste stream. While some facilities boast high recovery rates, the level of recovery for a typical (or average) facility in the region is to extract only 16 tons of material for every 100 tons of non-putrescible waste received. We continue to build in to this forecast some recovery line improvements at one particular MRF, which were funded in part by a Metro Investment and Innovation Program grant. These improvements should add about 5,800 tons of additional recovered material per year by 2023.

Forecast Flash

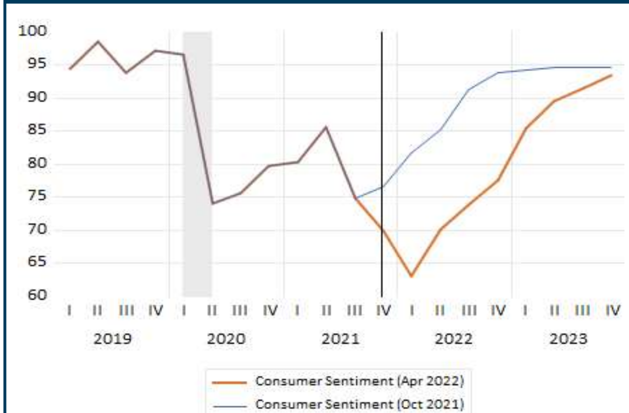
	Calendar Quarter					Calendar Year			
	2022:1	2022:2	2022:3	2022:4	2023:1	**2021**	2022	2023	2024
Key Economic Drivers (seas-adj)									
Consumer Sentiment Index	63	70	74	78	85	78	71	90	95
change (%)	*(9.7)*	*11.2*	*5.1*	*5.2*	*10.0*	*(4.8)*	*(8.3)*	*26.3*	*5.2*
*change from fall fc (%)**	*(22.8)*	*(17.6)*	*(19.3)*	*(17.2)*	*(9.4)*	*(2.1)*	*(19.1)*	*(4.8)*	*0.0*
Home Prices (real)	131	134	135	136	137	125	134	138	139
change (%)	*1.5*	*2.3*	*0.7*	*0.9*	*0.6*	*11.5*	*6.5*	*3.1*	*1.0*
*change from fall fc (%)**	*(2.4)*	*(1.0)*	*(1.0)*	*(0.9)*	*(0.8)*	*(0.8)*	*(1.3)*	*(0.5)*	*0.3*
Mortgage Rates (real)	3.54	4.20	4.29	4.38	4.56	2.83	4.10	4.70	4.76
change (%)	*22.1*	*18.7*	*2.2*	*1.9*	*4.2*	*(8.2)*	*45.0*	*14.5*	*1.4*
*change from fall fc (%)**	*15.7*	*29.9*	*25.3*	*22.4*	*22.5*	*0.3*	*23.4*	*21.1*	*13.4*
GDP (real, $T)	19.8	19.9	20.1	20.2	20.4	19.4	20.0	20.6	21.1
change (%)	*0.1*	*0.6*	*0.7*	*0.7*	*0.7*	*5.7*	*3.0*	*2.8*	*2.7*
*change from fall fc (%)**	*(0.5)*	*(1.0)*	*(1.3)*	*(1.3)*	*(1.2)*	*0.2*	*(1.0)*	*(1.0)*	*(1.0)*
Construction:Total Emp (ratio)	6.4	6.4	6.4	6.4	6.3	6.5	6.4	6.3	6.1
change (%)	*(0.2)*	*(0.0)*	*(0.1)*	*(0.3)*	*(0.3)*	*0.9*	*(2.6)*	*(1.3)*	*(2.8)*
change from fall fc (%)	*(1.2)*	*(0.7)*	*(0.7)*	*(0.4)*	*(0.1)*	*1.7*	*(0.8)*	*0.3*	*(0.4)*
Home Permits (4QMA, thous)	3.9	3.9	3.9	4.0	4.0	13.9	15.7	15.6	15.2
change (%)	*5.6*	*(1.0)*	*(0.7)*	*2.9*	*(0.5)*	*(7.3)*	*12.9*	*(0.3)*	*(3.0)*
change from fall fc (%)	*(5.6)*	*(3.5)*	*(4.2)*	*(1.5)*	*(1.6)*	*(3.2)*	*(3.7)*	*(1.8)*	*(1.2)*
Tri-County Core Tons *(thous)*	364	398	410	375	365	1,481	1,547	1,546	1,529
yoy change (%)	*4.2*	*5.2*	*6.3*	*2.1*	*0.1*	*5.0*	*4.5*	*(0.0)*	*(1.1)*
change from fall fc (%)	*---*	*0.2*	*0.3*	*(0.2)*	*(1.2)*	*0.3*	*0.0*	*(1.1)*	*(1.0)*
Wet Tons Avail. For Alloc. *(thous)*	182	190	191	192	183	747	754	753	746
yoy change (%)	*0.6*	*1.2*	*(0.2)*	*2.3*	*0.7*	*4.5*	*0.9*	*(0.1)*	*(0.9)*
change from fall fc (%)	*---*	*(2.8)*	*(2.8)*	*(3.0)*	*(2.9)*	*(1.4)*	*(3.1)*	*(2.9)*	*(1.4)*

	Calendar Quarter					Fiscal Year (ending)			
	2022:1	2022:2	2022:3	2022:4	2023:1	**2021**	2022	2023	2024
Metro Enterprise Tons									
MSW (thous)	137	144	147	137	137	545	575	569	575
yoy change (%)	*(0.4)*	*(0.6)*	*0.8*	*(8.0)*	*(0.2)*	*10.0*	*5.7*	*(1.1)*	*1.0*
change from fall fc (%)	*---*	*(0.6)*	*(0.5)*	*(1.5)*	*1.2*	*---*	*3.8*	*0.2*	*1.4*
Res. Organics (thous)	9.1	15.1	10.6	12.0	3.8	51.2	46.7	33.6	20.8
Com. Organics (thous)	2.6	3.0	3.3	3.3	1.9	11.9	11.5	10.4	17.9
Wood (hunds)	5.3	5.5	6.1	4.9	4.9	26.7	21.1	21.5	21.8
Yard debris (thous)	2.8	6.5	4.5	4.6	3.3	20.5	17.6	18.7	18.4
Staffed (thous)	75	113	118	85	83	380	367	396	388
Automated (thous)	29	30	30	29	27	113	119	116	116
Regional Fee/Tax Revenue Tons									
Regional System Fee (thous)	371	390	399	374	368	1,437	1,512	1,532	1,530
yoy change (%)	*7.4*	*4.2*	*3.5*	*2.1*	*(1.0)*	*3.0*	*5.2*	*1.3*	*(0.1)*
change from fall fc (%)	*---*	*0.0*	*0.1*	*(0.4)*	*(0.7)*	*---*	*0.8*	*(0.4)*	*(0.6)*
Excise Tax (thous)	376	395	404	379	372	1,456	1,530	1,552	1,550
Environmental Cleanup (thous)	68	70	79	69	69	230	257	291	304
Community Enhancement (thous)	270	304	299	289	271	1,115	1,149	1,165	1,169

* These are new features in our model this quarter, and have no corresponding Fall 2020 vintage

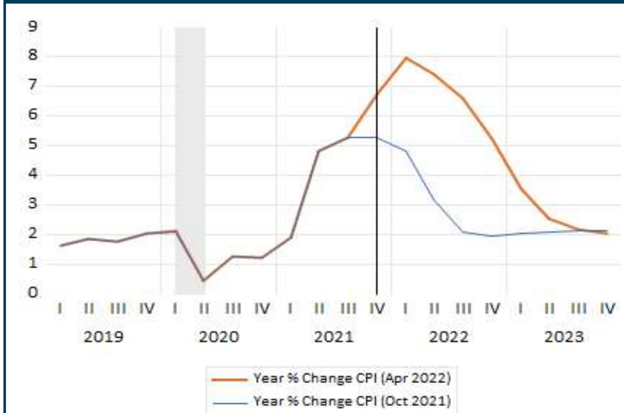
Forecast Flash

Consumer sentiment plunged on inflation, Omicron worries and Russia-Ukraine war



Source: IHS Markit, Univ. of Michigan

CPI inflation is up sharply and likely to worsen by the end of the year

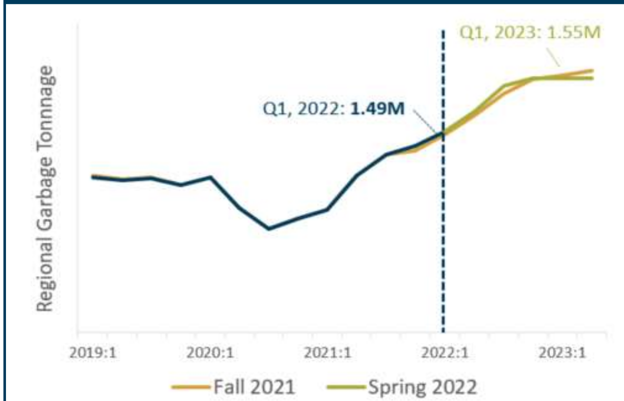


Source: IHS Markit, Bureau of Labor Statistics

FED rate hikes trigger sharp rise in the 30-year fixed mortgage rate; more rate hikes coming

Source: IHS Markit, Freddie Mac

Current garbage outlook has fallen back in line with the Fall forecast, but the peak is near

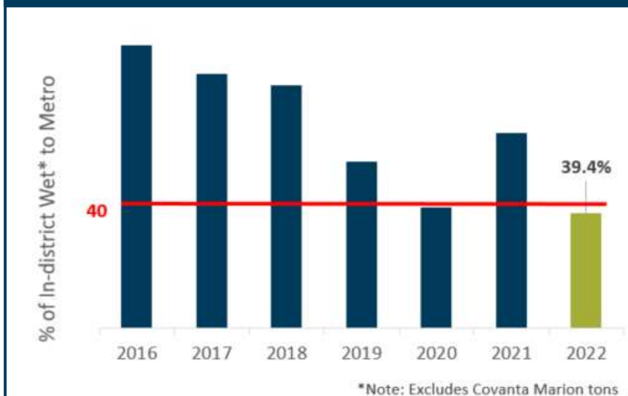


Source: Metro

Wet waste continues to under-perform, and should begin outright BFWP declines next year

Source: Metro

This puts pressure on Metro's 40% this year, since allocations were made from Fall forecast



Source: Metro

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Bioscience/Vaccine	No additional containment measures from Omicron assumed. US vaccinations rate increases slowed a bit, hitting 77% near the end of April. Omicron infection rates diminished but concerns continue to affect US economic growth.	No change in containment measure assumptions; vaccination rate slightly slower
US Macro	Read GDP growth expected at 3.0% this year, 2022	Growth revised down for 2022
Fiscal Stimulus	No additional stimulus given heightened inflation	No change
Monetary Policy	Fed funds rate to increase by at least 100 basis points this year, 2022, as Fed seeks price stability	Federal funds rate liftoff is 6 months sooner
Home Prices	Inflation-adjusted home price growth slows to about 7% this year, 3% in 2023	Slightly slower growth
Construction	Total construction activity expected to maintain strong growth levels. Residential expected to wane, while commercial begins to pick up it's slack.	Home permits expected to be higher this year, before converging with Fall expectations in 2023 and beyond
Commercial Food Waste	The Business Food Waste Program enforcement deadlines pushed out; Groups 1 and 2 will need to be in compliance by Fall 2023; Group 3 by Fall of 2024	No change
Residential Food Waste	No new curbside programs	No change
Wet Waste Allocations & Utilizations	Allocations at 60% (plus 4-5 K to Covanta Marion), utilizations at 98% in each calendar year through horizon.	No change in allocations, slightly less utilization (~1%)

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Mixed dry and food waste market shares at Metro facilities	Metro share of dry waste steady, but new organics bay renovation starting early in 2023 will permanently dampen shares of residential organics, and temporarily dampen shares of commercial organics	Slightly higher share of dry waste; organics renovation at Metro Central
Pre-consumer wastes and Environmental Cleanup	Tons of pre-consumer (special) wastes that incur Metro's full fee and tax at disposal sites are expected to move sideways through 2022 and grow moderately thereafter. Environmental cleanup materials, which incur reduced Metro fees and taxes, are expected to grow moderately but steadily through horizon.	No change
Post-collection Recovery	Recovery rates stabilize at about 16%, and increase slightly to over 17% with some recovery line modifications at a specific private facility that were funded in part by a Metro Investment and Innovation Program grant	Recovery line modifications increase average regional rates slightly