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Summer 2021
Solid Waste Forecast

Executive Summary

August 2021

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Forecast Summary

While the Delta variant of the COVID virus poses some downside risk, by nearly all measures, the economy is on stable footing and continues to expand, bringing higher solid waste volumes along with it.

Economics

Gross Domestic Product: According the US Bureau of Economic Analysis (BEA), final estimates of real GDP increased at a 6.4% annual rate in the first quarter of this year. This is 1.1 percentage points higher than what IHS had projected in last quarter's economic outlook. IHS Markit (Metro's economic advisor) estimates that US GDP surpassed its pre-pandemic mark sometime in June of this year. Due to new assumptions regarding government spending from the Congressional Budget Office (CBO), IHS shifted part of the amount of GDP forecasted in Q2 to the 2nd half of 2021. This twist to the outlook lowers Q2 estimates but elevates GDP projections in Q4. Our economic advisor forecasts 6.6% annual growth for all of 2021, revised up from 6.2%. The US forecast remains upbeat this year and next before tapering to a long-run annual trend of no higher than 2.4% growth per year and closer to 2% in the forecast out years.

COVID recovery: The IHS Markit bioscience team predicts widespread vaccination by early next year. The inoculation campaign marches closer to herd immunity with roughly half (56% as July 2021) the eligible population vaccinated. The majority of containment restrictions have been lifted in US states and their economies are re-opening. This has unleashed a torrent of pent-up demand for goods (and more recently in services) from consumers who were sidelined and waiting for the pandemic to subside. Consumer confidence soared in recent months as more are vaccinated, the economy recovers, and jobs become more plentiful. Additional signs of confidence emerged, over half of the state governors have voluntarily opted out early from enhanced pandemic unemployment benefit programs, which will expire in September.

Fiscal stimulus: Stimulus payments in January helped stabilize a flagging recovery. The larger American Recovery Plan (ARP), paid out in March, went on to propel a strong growth inflection this year. The US economy is broadly recovering, and expected to trend higher, even as the stimulus from prior fiscal supports begins to fade. There have been on-going talks of additional economic stimulus, but the likelihood of any legislation materializing makes it far too uncertain to include the additional spending proposals into the forecast. The infrastructure proposal poses an *upside risk* to the current forecast.

Forecast Summary

Federal Reserve monetary policy: The FED resolutely held to its accommodative stance on monetary policy. They kept the federal funds rate target at 0% to ¼%, but committee members revised their economic outlooks. Discussions during the June FED meeting hinted at a possible *future* course correction in FED policy due to revised outlooks. Notably, 1) there was "talk about talks" to taper Large-Scale Asset Purchases (LSAP) from $120B per month; and 2) elevated inflation concerns as historically low interest rates help fuel a faster rise in GDP. Policymakers at the FED acknowledge that economic indicators had strengthened and that prices have increased, but assert that inflation and factors bolstering its spike "largely reflected transitory factors." Year-over-year change in CPI (consumer price index) inflation reached 5.0%. A majority anticipate it will be appropriate to begin lifting the rate target by
2023. This is a change to the forecast. Consequently, IHS Markit moved ahead by a year its assumption of "lift off" for the Fed fund target to 2023. The actual timing will depend importantly on recovery in labor markets.

Consumer sentiment and PCE: Aided by one-time economic stimulus payments, personal consumption expenditures (PCE) surged ahead, but as the stimulus fades, spending is expected to slow. The University of Michigan consumer sentiment index has trended up since April, and as of June, it had regained half its losses from the pandemic, indicating that further improvements are still needed. Consumer spending remains *solid*, but recent high frequency data suggests consumption growth has somewhat slowed as the fiscal boost wanes. The spike in inflation and residual supply chain disruptions preventing the purchase of goods (and services) was likely to have hampered spending. PCE estimates in Q1 and Q2 were still surprisingly robust, registering 11.4% and 10.5% annualized growth. Going forward the rest of the year, IHS Markit predicts Q3 to dip to 2.3% and rise up to 5.3% in Q4. IHS projects 2022 spending in the range of 4% annual growth.

Employment outlook: Since January, the US has added over 5.5 million more payroll jobs. Initial unemployment claims have fallen precipitously after states re-opened, but the pace of recovery has slowed. The monthly US unemployment rate (and the region) appears stuck at about 6% since the prior forecast. A note of contention has materialized. Some pundits and 26 state governors have remarked how emergency and extended federal unemployment insurance benefits have caused employment reports for April and May to fall below expectations. 24 states have opted out early from pandemic-era enhance unemployment benefits programs and another 2 will be joining them by end of July. As of the first week in July, the number of continuing unemployment benefit claims remains stubbornly high at just above 12.5 million workers still receiving unemployment checks.

Mortgage interest rates: The FED successfully drove yields lower since the pandemic's onset. The 30-year fixed-rate mortgage yield hit an all-time low of 2.68% in December 2020. The rate has since increased by 30 basis points to 2.98% in June. IHS Markit predicts the rate will rise gradually but remain historically low, reaching 4% only after "lift off". Historically low interest rates will help towards housing affordability, but it is also contributing to stronger demand from first-time homebuyers.

Forecast Summary

Housing: Home prices are experiencing classic supply and demand woes. Too many homebuyers are chasing after too little supply. The Case-Shiller and Federal Housing Finance Administration (FHFA) housing price indices (HPI) are currently reporting double-digit Y/Y price appreciation. The National Association of Home Builders (NAHB) HMI (housing market sentiment index) is tracking close to its historic high. IHS predicts the market will ride out this price wave to the end of the year. In 2022, homebuyers should expect to face rapid escalation of prices, just not double-digit increases. High prices will likely drive away some buyers at the margin. Thus, IHS believes the current imbalance will start to work itself out by 2023.

Regional employment trends & outlook: The seasonally adjusted unemployment rate fell slightly to 6.0% in May from 6.2% the month before. BLS reports 72,000 unemployed in the Portland region. Regional nonfarm payroll employment hit 1,162,700 in May. The year-over-year employment growth reached 91,600 jobs. Regional employment has increased significantly during the last two months (April/May) and had recouped about 42% of job losses stemming from the pandemic, indicating room for substantially more progress to be made. The leisure and hospitality service industry lost over 62,000 jobs because of the pandemic, but it has made back 30,600 jobs. Several industry sectors have clawed through and are now above pre-pandemic employment levels, including Construction; Transportation, Warehouse & Utilities; Business services and Administrative services (which includes the garbage and recycling industry subsectors).

Construction sector: COVID aside, an unusually harsh winter had caused the industry to recede early this year. Recent job reports have the sector now above pre-pandemic peak employment. A combination of historically high demand, low supply and a residential backlog is bolstering sector employment. Demand for housing in the Portland metro area has never been hotter. June RMLS data speaks for itself as: 1) “inventory in months” statistic hit a near-low mark of 0.8 months in June; 2) year-to-date home prices are up 20.1% on average and 18.2% for median, with average home price at $562,700 and median hitting $500,000; 3) average time on the market fell to 21 days, lowest all-time reading.

Forecast risk: First time since the pandemic, the risk profile is tilted in favor of higher growth, although with elevated inflation readings over the last 3 months, FED officials are talking about making a change. Downside risk: 1) Rapid inflation, FED interest rate hikes and/or tapering of large asset purchases sooner than expected; 2) surge in delta variant infections may force some municipalities to re-impose targeted mobility restrictions. Upside risk: infrastructure spending proposal.

Forecast Summary

Solid Waste

Regional Waste Outlook: Vaccinations have increased, containment measures have been relaxed, and household wealth and consumption continues to rise. Regional garbage volumes through the second quarter of 2021 stand at about 1.45 million tons, which is about the same peak reached before the pandemic and ensuing recession. Back in the Fall of 2020, we expected growth to be more moderate than it has actually turned out to be, and we expected to reach our pre-pandemic peak by the end of 2022. So we're a year-and-a-half early! Both wet and mixed dry waste sub-streams have been growing and should continue to through 2023. Thereafter, the outlook sees some maturation in the business cycle, with GDP growth moderating, construction and demolition activity calming, and mortgage rates (adjusted for inflation) starting to "lift off". These factors should dampen real household wealth and put a kibosh on rapid garbage volume increases associated with consumption.

Waste Recovery: At the same time that the economic expansion moderates by 2023, the Business Food Waste Program (BFWP) will bring an influx of new business participants that will capture increased amounts of commercial food waste. This additional food waste capture is expected to divert about 13,000 additional tons per year and slowly ramp up from there. The outlook for commercial food waste recovery is lower in the near-term, but higher in the out-years, relative to the Fall 2020 forecast, due to a delay in the implementation of BFWP.

Wet Tonnage Allocations: Current practice is that the fall forecast vintage provides the basis for the following calendar year's tonnage allocation. The Fall 2020 forecast therefore set the base expectations for calendar year 2021 allocations. However, as we've been reading now for the past couple quarters, that forecast is turning out to be low, and current expectations for regional wet waste in 2021 are much higher, by about 20,000 tons. With private facility allocations fixed for the current year, that additional tonnage will flow to Metro facilities, and the current read shows Metro likely receiving over 42% of the waste this year. But with more wet waste in the current outlook and our next Fall forecast vintage coming up shortly, it's likely that this additonal regional tonnage will "lift all boats" starting next year, in calendar year 2022.

Post-collection Recovery: A number of factors over the years have contributed to declining mixed dry waste recovery (post-collection) at solid waste facilities in the region. While some facilities recover relatively more or less than others as a percentage of their incoming mixed dry waste, the average for the region is currently about 16%, and the average for just private facilities is a little over 20%. The expectation is to see these same rates through the forecast horizon, which is about 3% lower than the rates expected during the Fall 2020 forecast.

Forecast Flash

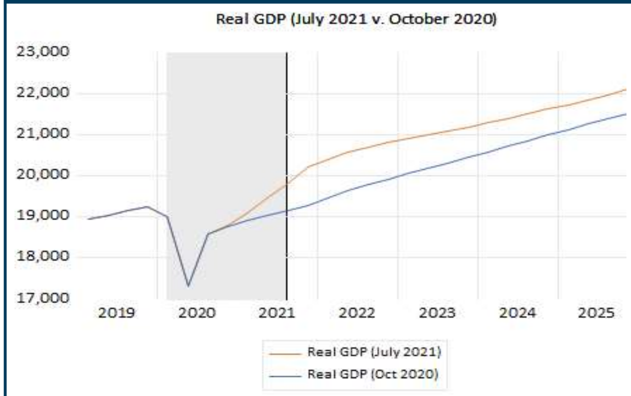
	Calendar Quarter					Calendar Year			
	2021:1	2021:2	2021:3	2021:4	2022:1	**2020**	2021	2022	2023
Key Economic Drivers (seas-adj)									
Consumer Sentiment Index	80	86	90	93	96	82	87	97	100
change (%)	*0.5*	*6.6*	*5.1*	*3.5*	*2.6*	*(15.0)*	*7.0*	*11.4*	*2.6*
*change from fall fc (%)**	---	---	---	---	---	---	---	---	---
Home Prices (real)	120	120	123	125	126	113	122	128	130
change (%)	*2.4*	*0.2*	*2.5*	*1.3*	*1.0*	*6.5*	*8.1*	*4.5*	*2.3*
*change from fall fc (%)**	---	---	---	---	---	---	---	---	---
Mortgage Rates (real)	2.82	2.88	2.87	3.06	3.25	3.08	2.91	3.44	3.76
change (%)	*3.4*	*2.1*	*(0.3)*	*6.6*	*6.0*	*(20.8)*	*(5.7)*	*18.3*	*9.4*
*change from fall fc (%)**	---	---	---	---	---	---	---	---	---
GDP (real, $T)	19.1	19.5	19.8	20.2	20.4	18.4	19.6	20.6	21.0
change (%)	*1.6*	*1.9*	*1.8*	*2.0*	*0.9*	*(3.5)*	*6.6*	*5.0*	*2.1*
*change from fall fc (%)**	---	---	---	---	---	---	---	---	---
Construction:Total Emp (ratio)	6.3	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.2
change (%)	*(2.5)*	*1.4*	*(0.5)*	*0.1*	*(0.2)*	*4.1*	*(0.5)*	*(0.7)*	*(2.3)*
change from fall fc (%)	---	*0.2*	*1.3*	*1.7*	*2.0*	---	*0.4*	*1.9*	*1.8*
Home Permits (4QMA, thous)	3.1	3.2	3.4	3.5	3.6	15.0	13.2	14.6	14.4
change (%)	*(7.4)*	*4.2*	*5.9*	*3.0*	*2.3*	*(3.7)*	*(11.9)*	*10.0*	*(1.2)*
change from fall fc (%)	---	*4.6*	*10.8*	*16.0*	*19.3*	---	*7.7*	*19.0*	*10.2*
Tri-County Core Tons *(thous)*	350	381	408	373	368	1,411	1,512	1,560	1,554
yoy change (%)	*2.5*	*10.4*	*11.8*	*3.9*	*5.2*	*(2.0)*	*7.2*	*3.2*	*(0.4)*
change from fall fc (%)	---	*2.8*	*7.1*	*6.6*	*6.5*	---	*4.8*	*6.6*	*3.6*
Wet Tons Avail. For Alloc. *(thous)*	181	188	190	191	186	715	750	764	765
yoy change (%)	*1.8*	*9.8*	*5.0*	*3.1*	*2.8*	*(3.1)*	*4.9*	*2.0*	*0.0*
change from fall fc (%)	---	*3.1*	*3.4*	*3.3*	*4.4*	---	*3.0*	*4.4*	*2.0*

	Calendar Quarter					Fiscal Year (ending)			
	2021:1	2021:2	2021:3	2021:4	2022:1	**2021**	2022	2023	2024
Metro Enterprise Tons									
MSW (thous)	138	145	146	137	135	545	564	568	565
yoy change (%)	*15.9*	*20.0*	*11.5*	*4.3*	*(2.0)*	*10.0*	*3.5*	*0.8*	*(0.7)*
change from fall fc (%)	---	*5.1*	*4.1*	*3.1*	*4.0*	---	*4.0*	*2.9*	*0.4*
Res. Organics (thous)	9.6	14.1	10.8	12.2	8.3	51.1	46.6	46.7	46.7
Com. Organics (thous)	3.0	3.5	3.0	3.0	3.7	11.9	13.5	18.3	23.5
Wood (hunds)	7.3	5.1	11.4	8.7	7.1	26.6	35.6	32.6	32.6
Yard debris (thous)	5.8	5.7	6.0	6.1	4.2	20.5	24.3	23.5	23.5
Staffed (thous)	89	106	122	89	88	380	416	411	405
Automated (thous)	27	30	31	30	28	113	119	120	120
Regional Fee/Tax Revenue Tons									
Regional System Fee (thous)	329	359	412	388	365	1,389	1,557	1,529	1,520
yoy change (%)	*3.8*	*9.3*	*17.9*	*10.6*	*10.9*	*2.4*	*12.1*	*(1.8)*	*(0.6)*
change from fall fc (%)	---	*(0.2)*	*12.6*	*12.1*	*7.1*	---	*9.8*	*5.9*	*3.5*
Excise Tax (thous)	334	364	417	393	370	1,408	1,577	1,549	1,540
Environmental Cleanup (thous)	42	90	78	72	67	224	288	287	290
Community Enhancement (thous)	268	291	294	284	271	1,113	1,155	1,169	1,170

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

Forecast Flash

US GDP back to pre-pandemic peak faster than originally expected

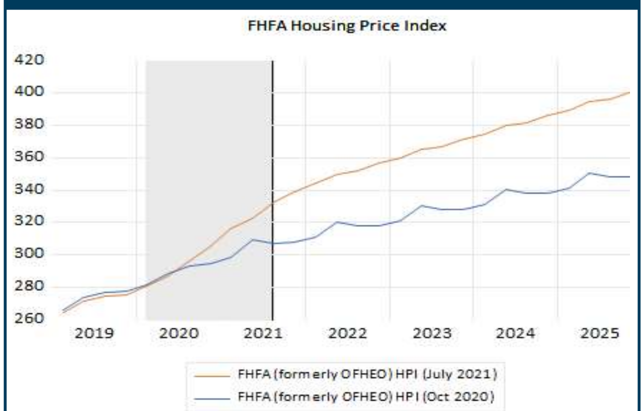


Source: IHS Markit, Bureau of Economic Analysis

Mortgage rates poised to increase with a sooner Fed Fund rate "lift off"

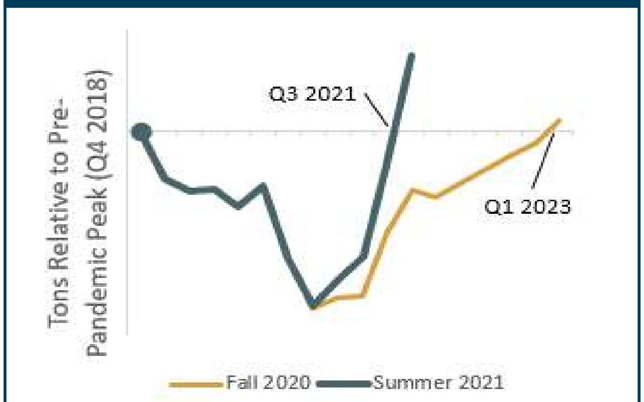
Source: IHS, Markit, US Federal Reserve

Home prices rise much faster than expected; consumer inflation worries heightened



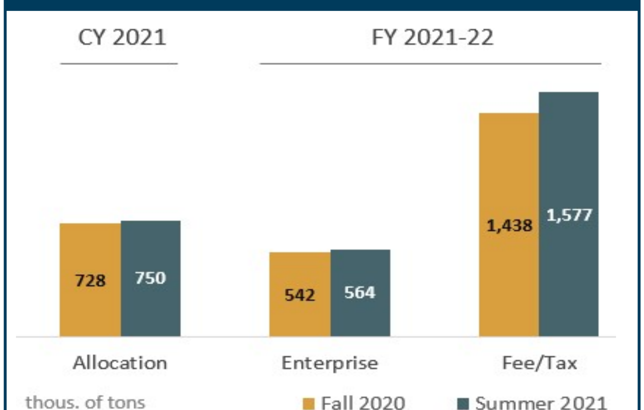
Source: IHS Markit, Federal Housing Finance Administration

Regional tonnage returns to pre-pandemic peak 6 quarters earlier than Fall expectations



Source: Metro

Current outlook is higher than Fall outlook for all major solid waste quantities



Source: Metro

With more wet waste than expected, and fixed CY 2021 allocations, Metro gets > 40%

Source: Metro

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Bioscience/Vaccine	The US vaccination campaign is estimated to have inoculated over 56% of Americans. The pace is beginning to slow, but experts believe 90% of Americans can be vaccinated near the end of the year. The delta variant of the virus now poses the biggest threat to the unvaccinated population and risks targeted economic shutdowns of local areas in the US to contain the outbreak.	The US vaccination campaign has been sped-up. Over 90% of Americans are expected to be fully vaccinated by the end of this year. But, viral mutations risk new government lockdowns of the economy. The recovery still is fragile and depends on the course of the virus.
US Macro	The GDP outlook in the July IHS Markit forecast is elevated over April. It believed that the US some time in June crossed over its pre-pandemic peak. The forecaster anticipates heightened consumption spending in the 2nd half of this year and modestly accelerated growth for all of 2022. CPI inflation has become a worry due to consumer spending outpacing goods production, but inflationary expectations for now seem well-anchored.	IHS Markit raised its GDP outlook. Growth is expected to surpass its pre-pandemic peak in Q2 of this year. An accelerated innoculation campaign and a signficicant boost from federal stimulus packages aided consumer spending this quarter. Consumer sentiment was up sharply in recent months and production (i.e., PMI) surveys point to robust growth to continue in the months ahead. GDP forecast revised up to 6.2% and 4.3% for 2021 and 2022.
Fiscal Stimulus	The fiscal stimulus paid to US households in January and March have been spent down by housholds and its impact on GDP has begun to wane. Additionally, pandemic-era unemploment benefits will sunset at the beginning of Sep. This forecast does not include any infrastructure spending proposal(s) due to political uncertainty. The recovery is on solid footing and seems less likely to need any additional boost.	The combined impact of Dec's $900B CAA (Consolidated Appropriation Act) and $1.9T ARP (American Recovery Plan) bolsters consumer spending in Q1 and into next year. Stimulus checks and extension of jobless benefits has the US on track to rebound this year. Not included in this forecast is the AJP (American Job Plan) due to its political uncertainty.
Monetary Policy	The FED is likely to begin talks soon to reduce its LSAP support from $120B/month. They could lower the monthly purchases of US Treasuries and mortgage-backed securities together or assume a dual track buy down. Due to the recent rise in inflation & elevated GDP growth, FED members have revised up their economic forecasts. Some have said it is appropriate to raise the target FED Funds rate starting in mid-2023. This is a year earlier than previous assumed.	The FED continues its LSAP (Large-scale Asset Purchases) to support the lending industry and credit markets. The FED has repeatedly announced it will hold interest rates near the effective lower bound and to allow inflation to rise above 2% - permitting an overshoot of its previous inflation target.

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Home Prices	Residential prices are expected to rise even faster this year in the July forecast. Housing production is modestly elevated over the April forecast, but more robust housing demand drives home prices to trend higher and faster. Years of pent-up demand and historically low interest rates fuel a strong uptick in prices for several more years in the future.	Residential prices are expected to rise faster in 2021. This trend is being supported (and will continue to be supported) by strong demand, especially among millenials in their prime home-buying years, and low interest rates. Supply-chain issues are rearing up to add to higher home production costs which are getting passed onto home buyers.
Construction	Harsh winter conditions forced builders to tap the brake this year, but once again, the industry was able to shrug aside the bad. Sector jobs in the MSA bounced back rapidly, showing its resiliency. The job sector was only 1 of a handful of sectors in the MSA that finally crossed over pre-pandemic employment levels. Favorable market fundamentals will continue to propel the industry for the foreseeable future.	Harsh wintry conditions and a 3rd COVID wave curtailed construction activity last quarter, pushing permits and jobs lower. Historically low interest rates, pent-up demand and emergence of first-time home buyers, the demand for housing will be robust for the foreseeable future. Market fundamentals are strong and with the arrival of warmer weather, construction expected to rebound shortly.
Commercial Food Waste	The Business Food Waste Program is delayed another year, with Group 1 and Group 2 generator capture not expected to materialize until late 2023.	Near-term capture is lower
Residential Food Waste	Capture of residential food waste mixed with yard debris is expected to drop faster than expected from its 2020 peak.	Near-term capture is lower
Wet Waste Allocations & Utilizations	CY 2021 allocations (based off Fall 2020 Solid Waste Forecast) remain in effect, and get scaled based on regional tonnage in subsequent calendar years. Utilization of allocations based on most 2020 actual utilizations, which average 98-99% for the region.	No change for CY 2021; allocations higher CY 2022 and beyond due to higher regional tonnage
Mixed dry and food waste market shares at Metro facilities	No expected firm entry/exit for mixed dry waste or source-separated organics. Metro shares remain at current levels through forecast horizon	No change

Key Assumptions

	Baseline Assumption	Change from Fall Forecast
Pre-consumer wastes and Environmental Cleanup	Pre-consumer (special) wastes that incur Metro's full fee and tax at disposal sites, and environmental cleanup materials, which incur reduced Metro fees and taxes, are expected to grow slowly at their damped long-run trends	No change for special; lower forecast for ecu
Post-collection Recovery	No major new market or policy developments increase rates. Recovery rates stabilize at about 20% through forecast horizon.	Lower rates through forecast horizon