

Harrison Street Insights  
Investing in Today's  
Infrastructure Environment

January 2023



**HARRISON STREET**  
*Making an Impact.*

## A Differentiated Approach to Social Infrastructure

Harrison Street's infrastructure investment strategy focuses on assets that serve Municipality, University, School and Hospital ("MUSH") users. The demand for the underlying investments remains strong and has typically been driven by demographics, decarbonization initiatives, aging infrastructure and/or a need for additional capital sources by institutions and private investors. Along with highly structured contractual obligations, the mission-critical nature of the assets to the end users bolsters the probability of long-term success and mitigates off-taker credit risk. Further, health systems, higher education institutions and governments are generally permanent geographical users, locked into their place in a city both physically and culturally.

Our strategy of targeting MUSH infrastructure assets, in tandem with the landmark legislation of the US Inflation Reduction Act ("IRA"), has resulted in a unique landscape and opportunity set despite broader economic challenges such as elevated debt costs, record-level inflation liquidity challenges and the possibility of recession.

A representative example of Harrison Street's investment focus and opportunity set includes:



**P3 Student Housing:**  
University of Chicago

**On-Campus Housing:** Providing high-quality and safe on-campus student housing is becoming a higher priority for universities as research studies have demonstrated that students learning in physical environments report stronger engagement, inclusion, academic success and mental health outcomes relative to those that are in entirely virtual learning environments.<sup>1,2</sup> Enrollment across leading public and selective private universities remains strong and occupancies at Harrison Street's on-campus housing is nearly full at 98%, resulting in growing demand for new, greenfield housing.<sup>3</sup> We have seen a steady increase in universities also seeking private capital to fund projects, including hard asset needs outside of on-campus housing such as innovation districts, district energy, dining halls and more.



**P3 District Energy:**  
City of Cincinnati

**District Energy:** District energy includes heating, cooling and distribution that is generated in a single location and serves a number of local residential and commercial buildings in a particular area. In tandem with the ambitious decarbonization pledges issued by many MUSH users, we anticipate these institutions to be increasingly likely to turn to private capital structures to address deferred maintenance and capital renovation projects for their district energy systems. An example includes elite Ivy League institutions, large public universities and small private colleges throughout the United States that often rely on inefficient, highly emissive plants to provide district energy across campuses.<sup>4</sup> Specifically, two-thirds of the 89 university plants from a 2022 Reuters study were found to lack sophisticated pollution controls that are considered common within the commercial power market, half of the 103 surveyed plants burn fuel oil, coal or wood chips at least part of the time, and nearly a quarter of the surveyed plants had higher carbon dioxide emissions in 2020 than they did in 2013.<sup>4</sup>



**Renewable Energy: Expansive initiatives to reduce reliance on antiquated, carbon-intensive sources of power continue to grow**, which has accelerated electrification efforts within the United States. At the same time, increased competition has resulted in advancements in renewable energy technology, such as solar or wind, that have lowered costs and improved efficiency. Harrison Street targets distributed and small-scale renewable opportunities with capacities that generally range between 10-30 MW, which allows us to incrementally build a portfolio of institutional scale.

### **P3 Distributed Solar: Various Municipalities**

**The IRA is expected to broadly stimulate investment in sustainable energy infrastructure across the country.** By 2030, the IRA is estimated to cut US greenhouse gas emissions by 37% to bring the country 43% below its levels from 2005, compared to a 25% reduction under a business-as-usual scenario.<sup>5</sup> **Additional forecasts suggest the IRA could drive over \$4.1 trillion in cumulative capital investment in new US energy supply infrastructure over the next decade** (2023-2032).<sup>6</sup>

Specific elements of the IRA which are expected to benefit Harrison Street’s infrastructure platform include: (i) renewing and expanding investment tax credit and production tax credit (“ITC” and “PTC”) programs, including the introduction of new “adders” to further improve project economics; (ii) simplifying the structuring requirements for tax-exempt entities to monetize associated credits; and (iii) encouraging significant investment in domestic production of the equipment necessary to facilitate the country’s ambitious carbon-reduction agenda. The IRA allows for tax-exempt entities, including MUSH users, to monetize tax credits directly and circumvent the necessity of complex, pricey tax equity models. Further, the IRA increased ITCs from 10% to 30% for geothermal, biogas, and combined heat and power projects.

Renewable energy projects, both existing and greenfield, are also expected to benefit from the IRA. Specifically, the extension through 2033 of ITC and PTC is expected to accelerate the development of utility-scale wind and solar projects. Additionally, the extended ITC now features potential “bonus adders” that can increase the value of the credit above 30% depending on the location and materials used during construction. Further, new incentives from the IRA incentivize owners to consider repowering existing assets with new equipment to extend and refresh the tax credit window for a given investment. Finally, we expect to see new investment opportunities in standalone energy storage projects which are now eligible for the ITC through the IRA. Harrison Street believes battery storage will be an essential component in alleviating the country’s constrained transmission infrastructure, especially as the production of intermittent renewables increases.



**Renewables:  
Representative photo**

## Underwriting in Today's Market

While transaction activity slowed in 2022, **anecdotal discussions with industry lenders and bankers suggest pricing has held relatively firm in recent months**, even during periods of market stress, strategic infrastructure buyers are often incentivized to transact for reasons other than a top-line IRR (e.g., bolstering and diversifying a generation base, utilizing newly enacted tax credits, etc.). Private market valuations are historically slow to adjust to public market and broader macroeconomic turbulence when compared to other asset types. This can often result in a "chicken or the egg" scenario of investors waiting to determine if valuations should be adjusted while illiquid markets inhibit the pricing validation that typically occurs via market transactions. Meanwhile, **the increase in debt costs have started to result in rises to discount rates used by third party appraisers by approximately 50-150 basis points depending on the underlying asset, user and contract.**



Within the infrastructure universe, Harrison Street typically seeks long-term, highly structured contracts with MUSH users, whom we believe are situated to perform well on a relative basis during a variety of market environments due to their demographic-driven, needs-based attributes. We remain focused on assets with defensive characteristics; rigorous underwriting and scenario analysis; and strong, comprehensive governance models with key risks being offset to external parties. Some key elements of **Harrison Street's risk mitigation and underwriting approach for infrastructure investments include:**

- **Demand risk:** Infrastructure investments that do not include the traditional off-take model are **structured to allow mitigation or elimination of demand risk** throughout the long-dated contract. This is achieved differently by sector, but common provisions include priority-fill leasing relative to other housing on-campus and/or required Harrison Street approval following a demonstrated viability study before new housing stock can be added to the campus or base. When executed correctly, **Harrison Street believes these mechanisms allow for substantial risk mitigation while simultaneously preserving alpha associated with the perceived demand risk relative to a traditional off-take or availability payment model** that explicitly removes demand risk (generally 100-200 bps alpha for the mitigated demand risk model, versus off-take or availability payment model).
- **Recontracting risk:** A key tenet of the firm's underwriting strategy for assets with long-term holds (defined as those with remaining useful lives of 15+ years) is to **assign minimal post-contract value and seek to receive a full return of capital – and the majority of pro-forma returns – during the initial contract period**. Further, when underwriting post-contract periods for power-generating assets, Harrison Street's policy is to utilize highly conservative merchant curves and curtailment scenarios that assume relatively low pricing and demand outcomes. In doing so, value is ascribed to what is identified and in-place without having to speculate on broad capital markets factors out of our control. As a result, **upside potential is preserved to the extent assets are able to recontract or, for power-generating assets, profitably sell to the spot market.**
- **Credit risk:** Harrison Street believes **MUSH users are inherently defensive due to their demographic-driven nature**, which comprises the firm's cycle-tested investment thesis. Concurrently, our view is that education, government, healthcare and research are deep rooted pillars in everyday life, and forming partnerships to enable their growth via essential hard asset solutions is an effective approach to mitigating default probabilities. Across our infrastructure portfolio, 95% of our contracts are with investment grade users.



- **Interest rate risk:** Infrastructure investments typically feature long-term contracts that can span decades (for example, the blended remaining contract term of infrastructure investments across Harrison Street’s portfolio is more than 35 years). In addition to the attractive nature of contractual cash flows, these **long-term contracts also allow for fixed-rate borrowing across a similar tenure, which can greatly reduce transaction costs and risks related to rising interest rates and refinancing.** Utility infrastructure **investments with attractive long-term contracts and a strong sponsor have seen debt spreads increase only 0 – 25 bps over the past year** due to the strong market appetite for renewable energy and sustainable infrastructure. Further, long-duration contracts provide a degree of flexibility in the timing of eventual debt placements, allowing investors to structure transactions on an unlevered basis and monitor the capital markets landscape for attractive debt placement opportunities in the future.
- **Inflation risk:** The nature of complex revenue models associated with infrastructure projects often includes **provisions for linking revenue and/or expenses to the Consumer Price Index (“CPI”)** to insulate asset income from asymmetric price increases. Further, cases where revenue escalations are structured as the greater of CPI or a fixed percentage **can posture assets to grow their cash flows during inflationary environments.** To illustrate, more than 60% of Harrison Street’s infrastructure assets utilize revenue models structured to pass increases to CPI through revenue, and approximately 34% of the remaining assets have guaranteed fixed revenue increases annually (often with caps on expenses).<sup>7</sup>

The result of a disciplined approach to risk mitigation can lead to improved performance and/or bolstered cash flows to help insulate from macro-level volatility.

## Public-Private Partnerships

Harrison Street believes **transaction structuring is essential to reduce demand risk and deliver an asset that may truly be considered infrastructure for the end user.** To target these types of investments, **Harrison Street frequently utilizes the public-private partnership (“P3”) model,** which provides a strong degree of governance. P3s are becoming increasingly accepted by public entities as they seek to create mutually beneficial relationships through aligned interests that include:

- **Balance Sheet Relief:** At the highest level, hard assets financed by the private market do not need to be financed by the granting entity (i.e., MUSH user), which allows them to realign their budgets more sustainably and reallocate dollars to other key needs. Further, certain P3 models often include large upfront payments to the grantor that can jumpstart new initiatives, especially in an environment of increasing borrowing costs. Conversely, Harrison Street believes tax-exempt bond financing may become increasingly risky as rising rates are expected to reduce project margins for error in coverage and add a greater likelihood of distress, which can lead to contentious and sometimes-public disputes with bondholders. This will likely provide an additional tailwind to the continued trajectory in the use of P3s from MUSH institutions.
- **Risk Management and Core Competency Concentration:** Universities and health systems are not experts in utility plant, housing or commercial-leasing management and therefore operating those assets can become expensive and even dangerous when not properly addressed or funded. Entering a P3 typically shifts the responsibility of critical operations to the specialized infrastructure manager(s) while allowing the granting entity the ability to dedicate its time towards its true mission (research, personnel/compensation, etc.). As an example, the concession agreement of a district energy P3 may assign the day-to-day management of the utility plant to an infrastructure manager for a base rate. Additionally, the manager is incentivized to improve the plant’s overall efficiency by sharing in the savings associated with their capital projects, which require approval from the granting entity.

- **Long-term agreements:** A common criticism of P3 models is that they are often owned by private equity vehicles with a finite life and will require sale to an unknown owner upon their inevitable purchase. Harrison Street seeks to structure P3 investments through evergreen vehicles, so they are permitted to hold an investment for the entirety of its contract term. These lengthy agreements are often structured with attractive revenue escalations that consider the greater of inflation or a fixed rate, which, in turn, can enable attractive financing opportunities.

In tandem with the strength and perceived relative resiliency of MUSH-type users, **Harrison Street believes the inherent structuring elements of P3s create an attractive opportunity for investors seeking stable, cash-flow-driven returns over a prolonged hold period.** Additionally, because P3 infrastructure assets feature long durations and provide essential services, granting MUSH entities are typically very selective in their search for a private partner and incorporate stringent minimum qualifications into their Request For Proposals, which may include criteria such as a minimum number of years, dollars, investments or units (beds, kW, sf, etc.) of experience structuring and managing P3s. These rigorous restrictions typically form organic barriers to entry that reduce competition for established entities in the industry and often lead to sourcing advantages via bilateral and limited auction processes.

Finally, because the selection process can be restrictive and time consuming, successful P3s can create sticky, multi-project relationships with MUSH granters that seek to leverage existing structuring framework and lean on in-place relationships that have proven to be reliable. For these reasons, **Harrison Street believes its role as an early mover in the P3 MUSH space provides a competitive advantage in sourcing new and follow-on transactions for the foreseeable future.**

## MUSH Assets: Solution for a Volatile Economy

In a macroeconomic environment experiencing elevated inflation, rising interest rates and a potential recession, we remain committed to investing in our targeted asset types, users and structures that seek to form defensive, mutually beneficial relationships that allow all involved parties to focus and invest in their competitive advantages. For Harrison Street’s infrastructure platform, this is achieved through delivering mission-critical hard asset solutions to resilient MUSH-type users through long-term contracts, typically P3 structuring, that emphasize best-in-class governance. Combined with sector-specific tailwinds and favorable federal legislation, risks associated with uncontrollable market factors can be mitigated to produce attractive performance over long-term horizons.



**P3 District Energy:**  
Worcester Polytechnic Institute



**P3 Education:**  
University of Kentucky



**P3 Military Family Housing:**  
US Air Force

## Disclaimers & Endnotes

Data as of January 6, 2023, unless otherwise noted.

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- 1 UC Davis: *Online Learning in COVID-19 Detrimental to Teen Mental Health, School Satisfaction, Performance.*
- 2 Intercultural Development Research Association: *Mental Health Implications of Virtual Learning on Student Engagement.* March 2021
- 3 *Blended occupancy of 23,600 on-campus student housing assets owned by HS as of September 30, 2022*
- 4 Reuters: *U.S. Colleges Talk Green. But They Have a Dirty Secret.* November 2022.
- 5 *Energy Innovation Report, August 2022*
- 6 *The REPEAT Project by Princeton University*
- 7 *As of September 30, 2022*



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