



ILR School

**AN ASSESSMENT OF THE FEASIBILITY AND POTENTIAL
BENEFITS OF PROJECT LABOR AGREEMENTS FOR NEW
YORK CITY DEPARTMENT OF PARKS AND RECREATION
STREET TREE PLANTING CONTRACTS**

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May 1, 2026

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1. Executive Summary

As a public agency that spends hundreds of millions of dollars every year to procure construction services from external contractors, the City of New York (“NYC”) Department of Parks and Recreation (“DPR”) is a significant contributor to economic activity in the NYC building trades landscape. One mechanism that is often used by public sector agencies to ensure that large, complex, and multi-trade construction projects run smoothly, are completed efficiently with few disruptions, follow high work quality and safety standards, and put upward pressure on wages and benefits in regional construction industries is a Project Labor Agreement (“PLA”). PLAs are “job site constitutions” that set terms for an entire project rather than taking a piecemeal, trade-by-trade approach to contracting and negotiation. As detailed in this report, the PLA design not only appears to be *feasible* for NYC street tree planting contracts; it has the potential to be net *beneficial* for DPR, for the public, for firms that successfully bid on planting contracts, and for the workers performing the labor on those contracts.

Box 1. What is a PLA?

“A Project Labor Agreement or PLA is a comprehensive, uniform labor agreement—a “job site constitution”—that standardizes contract terms among various crafts for the duration of a project. It is a valuable construction management tool for substantial cost savings, productivity, job stability, timely completion and quality work.”³

At present, NYC DPR does *not* utilize a PLA approach⁴ to the street tree planting construction contracts it issues as part of its aggressive, long-term NYC Parks’ Neighborhood Tree Planting Program,⁵ despite the City’s rapidly expanding PLA initiative.⁶ Given the consistency with which PLAs are found to “provide broad social and economic benefits” to the public,⁷ there is value in investigating whether the PLA design is feasible for use in NYC DPR’s tree planting. The current report, authored by researchers at the Cornell University School of Industrial and Labor Relations (“ILR School”) Buffalo Co-Lab and Worker Institute,⁸ with support from the Local 1010 Laborers-Employers Cooperation and Education Trust (“1010 LECET”), takes up the case for feasibility with particular foci on:

- Standardizing tree planting labor crews and leveraging the cost-effective “Green Infrastructure” labor rate bargained by Local 1010;⁹

³ Kotler, F. B. (2011). *Project Labor Agreements in New York State II: In the Public Interest and of Proven Value*. Cornell University ILR School. https://ecommons.cornell.edu/bitstream/1813/74333/1/LaborAgreementsinNYS_II.pdf

⁴ The reason for this situation stems from a 2009 study entitled *Feasibility Report for a Project Labor Agreement*, in which consultants for the City of New York (“NYC”) Department of Parks and Recreation (“DPR”) concluded that a Project Labor Agreement (“PLA”) for the NYC Street Tree Program, “while feasible, would be considered a neutral benefit.”; see: Hill International, Inc. (2009). *Feasibility Report for a Project Labor Agreement*. (p. 27).

⁵ <https://www.nycgovparks.org/trees/street-tree-planting>

⁶ For more on this initiative, see: <https://www.nyc.gov/site/mocs/regulations/project-labor-agreements.page>

⁷ Kotler (2011).

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⁹ <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionWorkersSchedule-2025-2026-Preliminary.pdf>



- Obtaining savings on workers' compensation insurance premiums through the use of group benefit funds,¹⁰ which are common mechanisms included in most PLAs;¹¹
- Accounting for the consistently higher safety standards observed on union¹² and PLA project sites¹³ relative to non-union, non-PLA projects;
- Analyzing data on recent street tree planting to quantify differences in contract duration and performance between union and non-union contractors;¹⁴
- Accounting for the role that higher safety and quality standards can play in reducing payouts made to plaintiffs who file tort claims against DPR after injuring themselves on defective (tree-damaged) sidewalks; and
- Evaluating the capacity for PLAs to better deliver on citywide Minority- and Women-Owned Business Enterprise ("M/WBE") goals relative to the status quo.¹⁵ Whereas all DPR construction projects, combined, come close to meeting this goal (24–25%),¹⁶ Capital Forestry contracts for tree planting often fall short, with many non-union vendors applying for and receiving waivers. Critically, the literature on PLAs suggests that their use is likely to have positive effects on M/WBE participation rates on public construction projects.¹⁷

Grounded in NYC PASSPortCentral data on DPR Capital Forestry Construction contracts awarded through competitive bidding,¹⁸ as well as tree planting and associated data from DPR¹⁹ and the City's open Forestry Management System ("ForMS"),²⁰ the authors compare four stylized PLA scenarios²¹ to a typical contract awarded under the status quo ("Baseline") scenario,²² in which tree planting projects are not eligible for PLAs.

¹⁰ Weaver, R., & Brady, A. M. (2023). Building Responsible Projects in New York City: Assessing the Impact of Prevailing Wage Benefits on Workers, Contractors, and the New York City Economy.

https://ecommons.cornell.edu/bitstream/1813/113403/2/CORNELL_PrevailingWage_FIN_508.pdf

¹¹ Kotler (2011, p. 5).

¹² Manzo, F., Jekot, M., & Bruno, R. (2021). *The impact of unions on construction worksite health and safety: Evidence from OSHA inspections*. Illinois Economic Policy Institute.

¹³ Kotler (2011).

¹⁴ Given the extent to which PLA provisions take cues from applicable union collective bargaining agreements ("CBAs"; see: Ibid.), comparing past union to non-union outcomes arguably acts as a proxy for detecting the extent to which outcomes might experience change—regardless of the direction of that change—under a PLA approach.

¹⁵ https://ogs.ny.gov/mwbe/minority-and-women-owned-business-enterprises-frequently-asked-questions#:~:text=MWBE%20participation%20goals%20are%20set%20for%20contracts,Plan%20*%20Monthly%20MWBE%20Contractor%20Compliance%20Report; NYC also has a statutory goal of 30% in Local Law 1 of 2013 ("LL 1"). LL 1 was enacted after an updated disparity analysis undertaken by the City. The law allows City agencies to set M/WBE participation goals on standardized, professional, and construction services contracts. The full provisions of LL 1 law are detailed in section 6-129 of the New York City Administrative Code. See: <https://codelibrary.amlegal.com/codes/newyorkcity/latest/NYCAadmin/0-0-0-208642>

¹⁶ See the M/WBE report for Q4 of 2025 here: <https://www.nyc.gov/site/mocs/opportunities/m-wbe-reports.page>

¹⁷ Kotler (2011).

¹⁸ <https://a0333-passportpublic.nyc.gov/index.html>

¹⁹ <https://www.nycgovparks.org/trees/street-tree-planting/locations>

²⁰ <https://docs.google.com/document/d/1PVPWFi-WExkG3rvnagQDoBbqfsGzxCKNmR6n678nUeU/edit?tab=t.0>

²¹ Unlike many due diligence studies that interrogate PLA feasibility, the absence of past or existing street tree planting PLAs means that the research team cannot draw a statistical comparison between performance metrics on PLAs versus standard contracts. As such, we instead draw on data from recent street tree planting projects to obtain parameters for a "typical" contract, and to compare selected performance metrics from contracts issued to union firms to those issued to non-union firms. Because PLA negotiations are informed by union collective bargaining agreements ("CBAs") and prevailing industry conditions in the region, any differences in union versus non-union outcomes arguably carries implications for changes one might expect under a PLA structure.

²² Referring to the initial feasibility study by Hill International (2009), a typical tree planting crew might contain seven total workers: four Laborers, one Laborer Apprentice, one Landscaper (Green Infrastructure), and one Foreman. In addition, as of March 2026, NYC



Figure 1.1 summarizes the PLA components considered in each stylized scenario,²³ while the middle column in Figure 1.2 depicts the expected savings on a typical contract relative to the Baseline under each PLA scenario. The final column in Figure 1.2 translates these per-contract savings into hypothetical dollar amounts by which costs might be expected to drop if DPR negotiates 10 tree planting PLA contracts per year. As demonstrated, even in the most conservative scenario that merely standardizes the size of labor crews and negotiates the creation of group fringe benefit funds for workers, substantial savings (7.9% on an average contract) are capable of being realized. Factoring in established and empirically derived provisions related to safety standards and time savings, the annual dollar savings on tree planting costs to DPR has the potential to reach into the multi-millions depending on the number of PLA contracts negotiated in a given year.

With respect to M/WBE usage, the authors reviewed waiver request and usage reports published by the Mayor's Office of Contract Services²⁴ from the first quarter in 2024 to the first quarter in 2026. Within that two-fiscal-year window, the authors identified 620 individual M/WBE waiver requests. More than half of those requests (n=319) were submitted to DPR by contractors engaged in active projects. Of those request records, 180 were associated with contractors who perform tree planting and site work for DPR.²⁵ Those 180 records were linked to just five firms: Almstead Tree & Shrub Care Co. LLC (n=2); Dragonetti Brothers Landscaping Nursery & Florist, Inc. (n=90); Quintal Contracting Corp (n=2); Robert Bello Landscaping Service (n=6); and Rocco Agostino Landscaping (n=80).²⁶ Seventy-eight (78) of those M/WBE waiver request records were either fully or partially granted after review.

Seventy-six (76) out of the 78 approved waiver records were linked to specific contracts by identifying instances in which the fiscal year of the waiver request corresponded to the fiscal year of a contract for a given vendor. In cases where such linkages were not feasible, the average value of a given vendor's contract during the past two fiscal years was used.²⁷ Multiplying these contract values by both (1) the original M/WBE goal for the contract and (2) the actual M/WBE target granted in each waiver, it is possible to generate a rough estimate of average M/WBE underpayment on recent (i.e., last two fiscal years) contracts. These estimates can be further compared to the average subaward that an M/WBE would be expected to receive if street tree contracts were subject to the NYC citywide goal of 30% usage. These estimates are summarized in Figure 3, below.

PASSPortCentral contained data on 43 registered or "in progress" DPR Capital Forestry construction contracts. The average current value (nominal dollars) of those contracts is \$4,708,934.46, with an average contract length of 618 days. The authors' statistical analyses of planting times on recent contracts revealed a highly statistically significant difference in **median** "time to plant" between union and non-union contractors of 14 days. Performing a robust difference of means test known as a "Cauchy Fit", which accounts for and reduces the influence of outliers, the corresponding difference in **average** "time to plant" between union and non-union contractors was 67 days (234 for non-union, 167 for union). This difference was highly statistically significant. Taken together, the nonparametric and parametric analyses suggest that union contractors can be quicker to plant trees than their non-union counterparts by anywhere between roughly two weeks and two months.

²³ See Section 3 and any technical appendices for full details.

²⁴ <https://www.nyc.gov/site/mocs/opportunities/m-wbe-reports.page>

²⁵ Personal communication, Local 1010 advisory group.

²⁶ Notably, none of these vendors are affiliated with Local 1010. No request records from Local 1010 vendors were identified in the dataset.

²⁷ These average values are as follows: Dragonetti—\$3,727,676; Robert Bello—\$3,086,895; and Rocco Agostino—\$2,848,821.



Figure 1.1. Description of PLA Scenarios

Parameter	Baseline	PLA 1	PLA 2	PLA 3	PLA 4
Standardized Crew Size: 3 Laborers + 3 Green Infrastructure	No	Yes	Yes	Yes	Yes
Group Benefits Fund for All Employees (Lower Worker's Comp Insurance Cost)	No	Yes	Yes	Yes	Yes
Higher Safety and Quality Standards	No	No	No	Yes (20% higher safety rating)	Yes (31% higher safety rating)
Greater Efficiency (Time Savings)	No	No	Yes (PLA saves two weeks on an average contract)	Yes (PLA saves five weeks on an average contract)	Yes (PLA saves two months on an average contract)
Alternative Dispute Resolution ("ADR")	No	No	No	Yes (1% savings)	Yes (1% savings)

Figure 1.2. Summary of Findings

PLA Scenario	% Labor Cost Savings on a Typical Project Relative to Baseline	Hypothetical Annual Savings on Ten Capital Forestry Tree Planting Contracts Per Year
1	7.9%	\$1,050,609.44
2	10.8%	\$1,447,135.99
3*	15.6%	\$2,786,818.19
4*	21.6%	\$3,915,470.03

*Includes "Other Savings" from Table 4.5



Figure 1.3. PLAs Can Reduce the Use of M/WBE Waivers to Better Reach State and Local M/WBE Goals

Measure	Amount to M/WBE	Notes
30% M/WBE Goal*	\$954,260.42	Effective average M/WBE share of contract: 30.0%
Expected Value of Average Funding* to M/WBE Firms if No Waivers Are Issued	\$766,956.46	Effective average M/WBE share of contract: 24.1%
Actual Average Funding* to M/WBE Firms After Waivers Were Granted	\$628,423.99	Effective average M/WBE share of contract: 19.8%
Difference in Average M/WBE Funding Due to Waivers	\$138,532.48	Eliminating waivers under a PLA could increase average funding to M/WBE contractors by 22%, or nearly \$140k on an average contract, getting closer to the statewide 30% goal

* The average contract value for this period of time and subset of contracts was \$3,180,868.03.

Taken together, the results produced in this report suggest that not only is a PLA for street planting work in NYC *feasible*, but the mechanism would likely yield the following *positive benefits*:

- Substantive cost savings from standardizing work crew compositions and making use of the relatively new “Green Infrastructure” pay rate;
- Nontrivial cost savings from establishing a joint-trustee group benefit fund for all workers on the PLA project;
- Upward pressure on safety standards, resulting in greater immediate cost savings on insurance premiums and potential long-term savings in the form of reduced tort claims;
- Upward pressure on quality standards;
- Faster contract execution and quicker tree planting;
- Faster dispute resolution; and
- Improved capacity to meet or exceed M/WBE goals and suspension of M/WBE waivers, thereby increasing the usage of and dollars flowing to M/WBE subcontractors.

For these reasons, the City of New York Department of Parks and Recreation is well-positioned to generate even greater “social and economic benefits”²⁸ for the people, workers, and neighborhoods of NYC through the use of PLAs on its tree planting and site work contracts.

The remainder of this report is structured into the following four sections:

- **Background (Section 2):** Provides a brief overview of PLAs, evidence of their impacts, and academic and policy debates related to such impacts. From there, the section describes the specific context of DPR street planting in NYC.

²⁸ Kotler (2011).



- **Research Questions, Data, and Methodology (Section 3):** Outlines the data and methodology employed in the study.
- **Findings (Section 4):** Presents the results of the report's empirical investigations.
- **Conclusion (Section 5):** Reviews and addresses the implications of the findings, makes the case for PLA feasibility given the results, and offers closing remarks and thoughts on next steps.



2. Background

2.1. General Context

2.1.1. PLA Definition and Common PLA Objectives

Project Labor Agreements (“PLAs”) have become staple fixtures in the American construction industry’s approach to managing complex, multi-trade projects in the public and private sectors. Their use across the country has expanded significantly in recent decades, especially in places characterized by substantive regional union densities and ambitious public infrastructure agendas, like New York City (“NYC”) and New York State (“NYS”).²⁹

Formally, New York Labor Law §222 defines a PLA as:

“a pre-hire collective bargaining agreement between a contractor and a bona fide building and construction trade labor organization establishing the labor organization as the collective bargaining representative for all persons who will perform work on a public work project, and which provides that only contractors and subcontractors who sign a pre-negotiated agreement with the labor organization can perform project work.”³⁰

To Cornell labor law scholar Fred Kotler, this type of agreement is tantamount to a “job site constitution...that standardizes contract terms among various crafts for the duration of a project”. Insofar as construction jobs involve many diverse trades, each of which is likely to fall under a different union collective bargaining agreement (“CBA”), one important function of the PLA mechanism is, for the duration of a project, to ensure that all contractors and subcontractors—regardless of union status—operate under the same terms and conditions. To that end, a PLA supersedes the governing CBAs for all applicable (sub)contractors on the specific job site, for the life cycle of the project. The PLA therefore has the effect of eliminating many of the transaction costs involved in negotiating across multiple, inconsistent CBAs, by instead establishing a uniform job site constitution.³¹

According to Kotler, popular provisions in PLAs include, but are not limited to:

- **No-strike/no-lockout clauses:** Contractual safeguards to prevent work stoppages, slowdowns, or disruptions for the duration of a project.
- **Hiring through union referral systems:** Provisions to require that a certain portion of the labor pool be hired through union referral procedures, with allowances for non-union contractors to retain a defined percentage of their own “core” employees.
- **Uniform work schedules and terms:** Contract language to standardize hours, holidays, overtime, and shift differentials across all trades to improve efficiency and minimize inconvenience.
- **Dispute resolution procedures:** Provisions, such as alternative dispute resolution (“ADR”), to efficiently resolve both contractual and jurisdictional disputes.

²⁹ Ormiston, R., & Duncan, K. (2022). Project labor agreements: A research Review. *Institute for Construction Employment Research Working Paper Series*. <https://faircontracting.org/wp-content/uploads/2022/11/ICERES-PLA-Research-Review.pdf>; also see:

<https://www.nyc.gov/site/mocs/regulations/project-labor-agreements.page>

³⁰ New York Labor Law §222. <https://newyork.public.law/laws/n.y. labor law section 222>

³¹ Kotler (2009, 2011).



- **Wage and benefit standards:** Language to adopt collectively bargained wage rates and fringe benefit payments *for the duration of the project* (i.e., wages are fully set in advance, known by all parties, and will not become a source of dispute and/or work stoppage later in the project cycle).
- **Apprenticeship and workforce development objectives:** Provisions to require that signatory contractors pay a fixed amount per worker, per hour, into an apprenticeship and training fund that gets used to educate and offer hands-on experience to the next generation of trades workers. Additionally, PLA provisions are often used to set more favorable journey-to-apprentice ratios for the project than individual CBAs would allow.
- **Joint-trustee fringe benefit funds:** In addition to provisions that specify standards for fringe rates, most PLAs employ the union sector “fund approach” to benefits provision—i.e., PLAs are used to establish “jointly administered, multi-employer Health and Welfare Trust Funds”³² into which fringe benefit payments are pooled, held in trust, and paid out to workers either as supplemental wages (applicable when the employer does not provide benefits) or to cover the cost of the baseline fringe benefit packages that the governing PLA requires signatories to meet. As discussed later in this report, monies paid into joint-trustee fringe benefit funds are generally exempt from the definitions of “payroll” that are used to set a firm’s workers’ compensation insurance premium. Consequently, the use of benefit funds tends to meaningfully reduce a firm’s workers’ compensation insurance costs, especially for non-union firms that are less likely to offer their employees fringe benefits and therefore more likely to pay out fringe as supplemental wages (i.e., through payroll).³³
- **Hiring goals for underrepresented (sub)contractors and local residents:** Many jurisdictions, especially in NYS,³⁴ as a matter of public policy, intentionally leverage the public procurement process for pursuing target participation rates for historically underrepresented groups (e.g., Minority and Women-Owned Business Enterprises [“M/WBEs”] and local residents) in local construction projects. PLA provisions to meet or even surpass a jurisdiction’s M/WBE and local hiring goals are therefore useful PLA provisions for advancing equity goals in a regional economy.³⁵

2.2.2. Common PLA Critiques and Rebuttals to Them

Whereas the foregoing list points to many of the potential *benefits* from adopting a PLA structure—standardized wages and benefits, absence of work stoppages, predictable work schedules and dispute resolution protocols, meeting social goals for workforce development and inclusion, and more—opponents of PLAs often contest the benefits of PLAs.³⁶

Several influential professional (i.e., not peer-reviewed) studies, especially reports out of the Beacon Hill Institute, suggest that using PLAs on school construction plausibly increases costs by 15–20% in NYS and other states.³⁷ However, these findings are widely challenged on the

³² Kotler (2011, pp. 1-5; 13).

³³ Weaver & Brady (2023); also see: Belman, D., & Bodah, M. (2015). A Look at Best Practices for the Design of Project Labor Agreements. *Economic Policy Institute*. <https://files.epi.org/page/-/pdf/BP274.pdf>

³⁴ See, for example, New York City Local Law 129 (2005): <https://www.nyc.gov/html/ddc/downloads/pdf/obo/law05129.pdf>

³⁵ Kotler (2011, pp. 1-5; 13).

³⁶ Ormiston, R., & Duncan, K. (2022). Project labor agreements: A research Review. *Institute for Construction Employment Research Working Paper Series*. <https://faircontracting.org/wp-content/uploads/2022/11/ICERES-PLA-Research-Review.pdf>

³⁷ See: <http://beaconhillinstitute.042712f.netsolhost.com/labor-economics/>



grounds that they do not account for differences in project size, complexity, or spatial location.³⁸ As such, Kotler asserts that the Beacon Hill results are “not credible” because they analyze “bid costs not actual costs”; and they fail “to segregate labor costs or account for various factors that influence project costs”.³⁹

Consistent with Kotler’s observations, more recent, methodologically sophisticated and peer-reviewed studies have failed to uncover any statistically significant evidence that PLAs put upward pressure on construction costs after accounting for appropriate control variables.⁴⁰ For example:

- **Belman et al. (2010):** Analyzed school construction projects in Massachusetts and found no significant cost difference between PLA and non-PLA projects after controlling for project characteristics.⁴¹
- **Philips & Waitzman (2021):** Examined almost 300 open bids for community college construction projects in California and similarly found no cost impact from PLAs. Moreover, the presence or absence of a PLA was not associated with differences in bid competitiveness.⁴²
- **Waddoups & May (2014):** Studied Ohio school projects and found that responsible contracting policies, including PLAs, had no effect on costs after accounting for school location and project complexity.⁴³

Finally, a 2025 analysis of more than 2,500 bids on 773 public building projects in Illinois found that PLAs not only had no statistically significant effect on final project costs—in some cases, projects with PLAs came in *below* engineers’ estimates, suggesting potential cost *efficiencies* from adopting a PLA approach.⁴⁴ One implication of these and related findings is that, in many markets, PLAs may actually enhance bid competition—especially for locations where union labor is prevalent and labor-management relationships are already well established.

2.2.3. Beyond Cost and Competition: Potential PLA Advantages for Quality and Equity
As legal scholar Fred Kotler has written of New York:

“Whether a PLA is appropriate for a particular project is determined on a case-by-case basis following standards established in 1996 by the New York State Court of Appeals. The burden is on the New York public owner to demonstrate, typically through a consultant’s **feasibility or due diligence report**, that a PLA has a proper business purpose, that it will provide **direct and**

³⁸ Belman, D., Ormiston, R., Kelso, R., Schriver, W., & Frank, K. A. (2010). Project labor agreements’ effect on school construction costs in Massachusetts. *Industrial Relations: A Journal of Economy and Society*, 49(1), 44-60.

³⁹ Kotler, F. B. (2009). Project labor agreements in New York State: In the public interest. Cornell ILR School. <https://ecommons.cornell.edu/server/api/core/bitstreams/f8c41ded-b06e-48e5-b757-f4c4f2325758/content> (p. 22).

⁴⁰ Ormiston & Duncan (2022).

⁴¹ Belman et al. (2010).

⁴² Philips, P., & Waitzman, E. (2021). Do project labor agreements reduce the number of bidders on public projects? The case of community colleges in California. *Public Works Management & Policy*, 26(4), 337-358.

⁴³ Jeffrey Waddoups, C., & May, D. C. (2014). Do responsible contractor policies increase construction bid costs? *Industrial Relations: A Journal of Economy and Society*, 53(2), 273-294.

⁴⁴ Manzo IV, Frank., & Bruno, R. (2025). The Impact of Project Labor Agreements on Costs, Competition, and Contractors in Illinois: Evidence from Capital Development Board Projects. *Illinois Economic Policy Institute*. <https://www.illinoisepi.org/2025/03/06/the-impact-of-project-labor-agreements-on-costs-competition-and-contractors-in-illinois-evidence-from-capital-development-board-projects/>



indirect economic benefits to the public and promote the particular project's timely completion."⁴⁵

Stated another way, unless there is a preexisting blanket authorization for PLA adoption in the applicable legal jurisdiction, the use of a PLA for any given project requires the project's public sector sponsor organization (e.g., NYC Department of Parks and Recreation, or "DPR") to empirically demonstrate that a PLA is *feasible* for that case—where feasibility is most prominently taken to mean direct economic benefits in the form of monetary cost savings.⁴⁶ However, as researchers regularly point out, there are "broader benefits of PLAs"⁴⁷ that deserve attention and can make a PLA attractive even in cases where cost savings (i.e., "direct...economic benefits to the public"⁴⁸) might be small or neutral.

For social scientists Dale Belman and Matthew Bodah, less tangible PLA benefits to the public include, among other things:

- Timeliness and efficiency in contracting and project duration;
- Higher quality work standards;
- Innovation in work practices and project coordination;
- Investment into low wealth communities and workforce development; and
- Higher health and safety standards.⁴⁹

Indirect PLA benefits such as these are well documented in the literature⁵⁰ and are intricately intertwined with the observation that PLAs—at least in NYS—are "collective bargaining agreements" that require the participation of a "bona fide building and construction trade labor organization" to act as the collective bargaining representative.⁵¹ In NYC, since 2009, the City of New York has been party to many PLAs alongside the Building and Construction Trades Council ("BCTC") of Greater New York.⁵² The BCTC "represents more than 100,000 tradesmen and tradeswomen across New York City and consists of local affiliates of 15 national and international unions... [It] advocates for the advancement of workers' rights, economic security and middle-class employment opportunities for its membership and all working people, as well as safe working conditions across New York City's robust construction, development, and real estate communities."⁵³

The upshot is that, at least in NYC—and largely throughout NYS—PLAs established on publicly funded projects involve *union participation* and thus bring *union standards* to bear on PLA projects.⁵⁴ Importantly, when union standards are applied to construction projects, such projects are repeatedly found to be safer and of higher relative quality than their non-union

⁴⁵ Kotler (2009, p. 3) [emphases added].

⁴⁶ Ibid. See also: Kotler (2011); Belman & Bodah (2015); Ormiston & Duncan (2022).

⁴⁷ Lopezlira, E., & Farmand, A. (2024). Evaluating the impact of project labor agreements on the cost of affordable housing projects: Proposition HHH in Los Angeles. Report. UC Berkeley Labor Center. <https://laborcenter.berkeley.edu/wp-content/uploads/2024/05/Evaluating-the-Impact-of-PLAs-on-the-Cost-of-Affordable-Housing-Projects.pdf>

⁴⁸ Kotler (2009, p. 3).

⁴⁹ Belman & Bodah (2015).

⁵⁰ Ibid. See also: Manzo IV & Bruno (2025).

⁵¹ New York Labor Law §222. <https://newyork.public.law/laws/n.y.labor.law.section.222>

⁵² See: <https://www.nyc.gov/site/mocs/regulations/project-labor-agreements.page>

⁵³ See: <https://www.nycbuildingtrades.org/about>

⁵⁴ Kotler (2009, 2011).



counterparts.⁵⁵ Furthermore, union participation in setting standards for publicly supported construction projects has already been proven to create and retain local wealth. Consider prevailing wage (“PW”) policies, which mandate that governments pay the wages and benefits that prevail in local labor markets. In NYC, PW rates are drawn almost exclusively from union collective bargaining agreements (“CBAs”). Specifically, for each PW rate and supplemental (fringe) benefit rate listed in the NYC Construction Worker Prevailing Wage Schedule, the NYC Comptroller’s Office names the active (local) union CBA from which the rates came.⁵⁶

Research shows that these union-backed PW laws prevent out-of-town firms from taking local jobs by using lower-paid workers from elsewhere, which puts downward pressure on local wages, benefits, and working conditions.⁵⁷ As such, through their adoption of union standards, PW regulations keep construction wages high and worker injury rates low.⁵⁸ They encourage skilled workers to enter the construction industry and provide incentive for firms to train workers, which in turn boosts productivity.⁵⁹

Taken together, the evidence strongly suggests that union standards promote overall stability within a construction project (i.e., low turnover rates), which helps to lower total project costs.⁶⁰ Moreover, a well-paid construction workforce means less need to draw on publicly funded benefits, such as SNAP and Medicaid, to supplement workers’ incomes in order to meet basic economic needs.⁶¹ Grounded in these observations, it is reasonable to claim that any empirically detected differences in outcomes between union and non-union construction projects hold valuable insights with respect to the feasibility of a PLA structure for similar projects going forward. This premise serves as a launch point for the present study to investigate PLA feasibility for street tree planting contracts issued by the NYC DPR. Such projects were explicitly excluded from NYC’s—and DPR’s—growing use of the PLA structure since 2009. The remainder of this report takes a fresh look at the potential feasibility of PLAs for street tree planting, concluding that not only is the structure feasible, it is likely to generate many of the positive benefits described throughout Section 2 above.

2.2. Project Context

2.2.1. PLA Usage in NYC

NYC has been at the forefront of PLA usage in the US, with numerous agreements delivering critical infrastructure, promoting workforce development, and advancing equity goals. Since 2009, the City has entered into PLAs covering billions of dollars in capital projects, across multiple agencies, including: the Department for the Aging (“DFTA”); Administration for

⁵⁵ Manzo, F., Jekot, M., & Bruno, R. (2021). *The impact of unions on construction worksite health and safety: Evidence from OSHA inspections*. Illinois Economic Policy Institute.

⁵⁶ See: <https://comptroller.nyc.gov/services/for-the-public/workers-rights/wage-schedules/>

⁵⁷ Ormiston et al. (2018).

⁵⁸ Li, Z., Zorigtbaatar, C., Pleiés, G., Fenn, A., & Philips, P. (2019). The effects of prevailing wage law repeals and enactments on injuries and disabilities in the construction industry. *Public Works Management & Policy*, 24(4), 368-384.

⁵⁹ Manzo, F., Bruno R., & Littlehale, S. (2014). *Common sense construction: The economic impacts of Indiana’s common construction wage*. Midwest Economic Policy Institute; Labor Education Program, School of Labor and Employment Relations, University of Illinois at Urbana-Champaign; & Smart Cities Prevail. See Philips, P., Mangum, G., Waitzman, N., & Yeagle, A. (1995). *Losing Ground: Lessons from the Repeal of Nine ‘Little Davis-Bacon’ Acts*. Working Paper, Economics Department, University of Utah.

⁶⁰ Manzo (2015).

⁶¹ Jacobs, K., Huang, K., MacGillvary, J., & Lopezlira, E. (2022). *The public cost of low-wage jobs in the New York construction industry*. UC Berkeley Center for Labor Research and Education. <https://laborcenter.berkeley.edu/wp-content/uploads/2022/03/Public-Cost-New-York-Construction.pdf>



Children's Services ("ACS"); Department of Citywide Administrative Services ("DCAS"); Department of Correction ("DOC"); Department of Design and Construction ("DDC"); Fire Department ("FDNY"); Department of Homeless Services ("DHS"); Human Resources Administration ("HRA"); Department of Health and Mental Hygiene ("DOHMH"); Department of Parks and Recreation ("DPR"); Police Department ("NYPD"); Department of Sanitation ("DSNY"); Department of Transportation ("DOT"); Department of Buildings ("DOB"); and Department of Environmental Protection ("DEP").

NYC's PLAs typically cover new construction, renovation, and rehabilitation of city-owned buildings and structures. The agreements standardize work rules, wages, and benefits across all trades, and include robust provisions for community hiring, apprenticeship utilization, and M/WBE participation. Agency-specific PLAs are also in place for the School Construction Authority ("SCA"), New York City Housing Authority ("NYCHA"), and NYC Health + Hospitals ("H+H"), each tailored to the unique needs of their respective projects.

The 2025–2028 New Construction and Renovation PLA, for example, includes mechanisms for direct labor cost savings (e.g., waiving shift premiums), expedited construction processes, and comprehensive dispute resolution procedures. The agreement also fosters increased participation by M/WBEs and encourages the development of pathways to construction careers through community hiring initiatives.⁶²

Due diligence studies by Hill International and other consultants have documented substantial cost savings from NYC PLAs. For instance:

- Hill's analysis of the DDC Renovation PLA showed total savings of \$9.48 million (13.6% of total project costs), with key savings from Wicks Law exemption, standardized workweeks, and shift differentials.
- The SCA's 2004–2009 PLA saved taxpayers more than \$44 million annually, with labor cost savings exceeding \$221 million over the project's duration.⁶³

Apart from documented cost savings, NYC PLAs have been instrumental in expanding apprenticeship and workforce development opportunities. The City's community hiring requirements mandate that a meaningful portion of labor hours be performed by residents of NYCHA housing or economically disadvantaged ZIP codes. Memoranda of understanding with the Building and Construction Trades Council ("BCTC") support the recruitment and placement of pre-apprenticeship candidates from low-income communities. Citywide M/WBE provisions further support the participation of minority- and women-owned contractors, creating target utilization rates for such establishments (e.g., as technical assistance providers for small firms) and ensuring that they are included on larger public projects.⁶⁴

2.2.2. NYC Department of Parks and Recreation Street Tree Planting

NYC's experience with PLAs demonstrates the mechanism's evident value as a tool for managing complexity, promoting fairness, and building a more inclusive and resilient

⁶² <https://www.nyc.gov/site/mocs/regulations/project-labor-agreements.page>

⁶³ Kotler (2011, pp. 38-49).

⁶⁴ See, for example: https://www.nyc.gov/assets/communityhiring/downloads/pdf/2025_05_05_VendorFAQ.pdf



construction industry.⁶⁵ Nevertheless, PLAs are not used universally by all departments for all contracts. As noted earlier, to adopt the PLA structure for a given project that is not already covered by a PLA initiative, the NYC sponsor public agency bears the burden of empirically demonstrating the *feasibility* of the PLA to generate direct and indirect benefits for the public. Whereas the City’s Department of Parks and Recreation (“DPR”) has met this burden for much of the construction works that it bids out, it does not currently use the PLA structure for its street tree planting contracts.

The reason DPR does not use the structure stems from a 2009 study entitled *Feasibility Report for a Project Labor Agreement*, in which DPR-hired consultants concluded that a PLA for the NYC Street Tree Program, “while feasible, would be considered a neutral benefit.”⁶⁶ Among the justification for this determination was that, due to the non-diversified nature of tree planting work, which is carried out by small crews that span relatively few labor classifications, opportunities to realize cost savings through conventional PLA mechanisms (e.g., standardization of work hours, shifts, and holidays across classifications) are unlikely to be realized.

Following this neutral benefit declaration, tree planting projects were and remain excluded from the City’s expanding PLA initiative.⁶⁷ However, given the consistency with which PLAs are found to “provide broad social and economic benefits” to the public,⁶⁸ there is value in revisiting this conclusion to see if the case for street tree planting PLAs in NYC has strengthened in the intervening years since 2009. It is this broad purpose to which the remaining sections are dedicated.

2.3. Project Objective

In collaboration with the NYC-based Local 1010 Laborers-Employers Cooperation and Education Trust (“1010 LECET”)—“the premier Paving and Road Building Union of New York City”⁶⁹—whose “Laborer” and line striping “Green Infrastructure” pay and benefit rates are currently used by the NYC Comptroller to set prevailing wages for most of the work related to street tree planting,⁷⁰ the authors of the present study reexamine the case for the feasibility of a street tree planting PLA with particular foci on:

- Standardizing tree planting labor crews and leveraging the cost-effective “Green Infrastructure” labor rate bargained by Local 1010;⁷¹

⁶⁵ Kotler (2009, 2011).

⁶⁶ Hill International, Inc. (2009). *Feasibility Report for a Project Labor Agreement*. (p. 27).

⁶⁷ For more on this initiative, see: <https://www.nyc.gov/site/mocs/regulations/project-labor-agreements.page>

⁶⁸ Kotler (2011).

⁶⁹ <https://www.laborerslocal1010.com/about>

⁷⁰ See: <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionWorkersSchedule-2025-2026.pdf>

⁷¹ <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionWorkersSchedule-2025-2026-Preliminary.pdf>



- Obtaining savings on workers' compensation insurance premiums through the use of group benefit funds,⁷² which are common mechanisms included in most PLAs,⁷³ especially in NYC;⁷⁴
- Accounting for the consistently higher safety standards observed on union⁷⁵ and PLA project sites⁷⁶ relative to non-union, non-PLA projects;
- Analyzing data on recent street tree planting to quantify differences in contract duration and performance between union and non-union contractors;
- Accounting for the role that higher safety and quality standards can play in reducing payouts made to plaintiffs who file tort claims against DPR after injuring themselves on defective (tree-damaged) sidewalks; and
- Evaluating the capacity for PLAs to better deliver on citywide Minority- and Women-Owned Business Enterprise ("M/WBE") goals relative to the status quo.

The overarching objective of the study is therefore to examine the net feasibility of a street tree planting PLA to deliver positive benefits to NYC and the public, by applying the common PLA provisions enumerated above to a typical tree planting contract and quantifying potential cost savings.

⁷² Weaver, R., & Brady, A. M. (2023). Building Responsible Projects in New York City: Assessing the Impact of Prevailing Wage Benefits on Workers, Contractors, and the New York City Economy.

https://ecommons.cornell.edu/bitstream/1813/113403/2/CORNELL_PrevailingWage_FIN_508.pdf

⁷³ Kotler (2011, p. 5).

⁷⁴ https://content.govdelivery.com/attachments/NYCMOCS/2023/03/23/file_attachments/2446366/2023_03_23%20PLA%20Training%20Slides.pdf

⁷⁵ Manzo, F., Jekot, M., & Bruno, R. (2021). *The impact of unions on construction worksite health and safety: Evidence from OSHA inspections*. Illinois Economic Policy Institute.

⁷⁶ Kotler (2011).



3. Research Questions, Data, and Methodology

We take a two-phase approach to estimate the potential effects of a Project Labor Agreement (“PLA”) on street tree contracts—necessitated because the Department of Parks and Recreation (“DPR”) does not currently use PLAs so there is a lack of data from which to draw empirical cost comparisons between PLA and non-PLA projects.

Recall from above that PLAs in NYC involve *union participation* and are informed by *union standards* for wages, benefits, quality, safety, and much more. Accordingly, to investigate the possibility that a PLA might result in outcomes that are different from the status quo (i.e., the absence of a PLA), Phase 1 of the analysis seeks to answer the question: **do outcomes connected to union street tree contracts differ from those of non-union contracts?** Phase 2 then takes the Phase 1 results as inputs to calibrate hypothetical null (status quo, no PLA) and PLA scenarios that estimate labor costs for a typical (i.e., average) street tree planting project based on recently executed DPR contracts. Using this stylized scenario modeling approach, we seek to answer the questions: **is a PLA structure for DPR street tree planting contracts feasible? And can that structure generate substantive positive benefits for the municipality and the public at large?**

Essential information on the data and methods we used to approach and answer these questions is summarized in the two subsections below. Where appropriate, more complex technical information is reserved for footnotes or appendices.

3.1. Phase 1: Testing for Observable Differences in Union and Non-Union Tree Planting Outcomes as a Proxy for Expected Outcomes Under a PLA⁷⁷

Phase 1 evaluates measurable outcomes from recent (2021–2024) street tree planting contracts executed by NYC DPR. In total, 43 DPR tree planting construction contracts were identified and included in the analyses. Of those contracts, 36 were associated with competitive bidding and bid history data readily available through the NYC PASSPortCentral website.⁷⁸ Thirteen (13) of those 36 contracts (36.1%) were awarded to firms affiliated with Local 1010, and the remaining 23 contracts (63.9%) were awarded to non-Local 1010 firms.⁷⁹

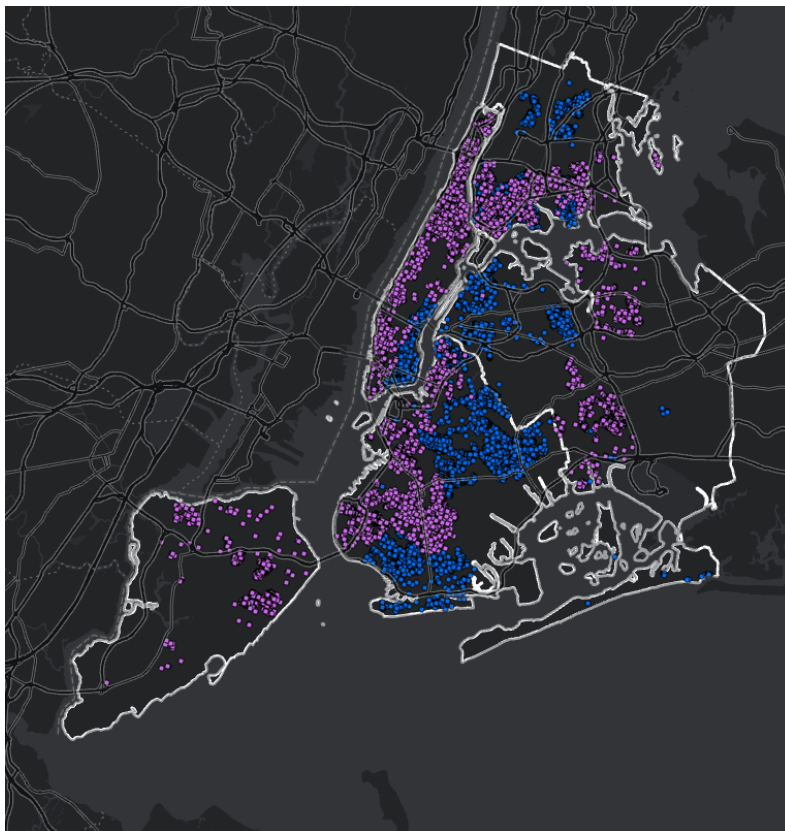
⁷⁷ An earlier version of this analysis was presented as oral and written testimony at a September 2025 Public Hearing of the NYC Council on contracting and vendor accountability in the NYC Parks Department. In that version, one of the 36 contracts under review was misclassified into the “non-Local 1010” category despite the vendor being a Local 1010 member. The updated version of the analysis in this report corrects that misclassification error. Whereas the precise numbers in the analyses are therefore slightly different from the original presentation, the results are qualitatively the same, if not more favorable to the claim that union (i.e., Local 1010) contracts are systematically linked to faster and lower risk tree plantings; lower densities of surrounding sidewalk complaints; and bid proposals and final contract award values that are roughly equal to (i.e., not statistically significantly different from) their non-union counterparts. In addition, the September 2025 analysis has been updated to include additional tree plantings that occurred through the end of 2025, which has the beneficial effect of increasing the sample size (and presumably robustness) of the analysis.

⁷⁸ <https://a0333-passportpublic.nyc.gov/index.html>

⁷⁹ The 36 projects that fit these criteria are as follows: B057-121M; BG-1022M; BG-119M; BG-123M; BG-222M; BG-322M; BG-323M; BG-422M; BG-523M; BG-622M; BG-624M; BG-824M; BG-924M; CNYG-3722M; MG-1219MA; MG-1319MA; MG-224M; MG-422M; MG-619MA; QG-219MA; QG-222M; QG-322M; QG-323M; QG-523M; RG-124M; RG-223M; X039-221M; X039-222M; X092-422M; XG-122MA; XG-124M; XG-323M; XG-324M; XG-423M; XG-424M. The Local 1010 firms represented in these projects are: Antonio Natale; BIB Services Corp.; Coppola Paving; J Pizzirusso; JRCRUZ; and Westmoreland. The non-Local 1010 firms represented in this sample are: D&G Elite; Dragonetti; Elegant Lawns; Family Tree Services; Griffins; HTC; Paul Bunyon; Perkan; and Robert Bello.

Drawing on street tree planting data from NYC DPR,⁸⁰ the authors identified 37,958 individual trees that have been planted between August 2024 and December 2025.⁸¹ Nearly 70% of those trees (n=25,839) were associated with contracts executed in the years under investigation (2021 through 2024). In total, 15,730 of these trees were marked as “Completed” and having been planted in the DPR street tree planting dataset. The bid- and contract-level analyses below are based on the 36 contracts for which complete bid histories are available, and the 15,730 trees planted under those contracts.⁸² The sample of trees included in the analysis is shown in Figure 3.1, where points shaded in purple are tree locations covered by a Local 1010 contract and trees linked to non-Local 1010 contracts are shown in blue.

Figure 3.1. Street Trees Recently Planted by Union (Purple) and Non-Union (Blue) Vendors



Recall that Phase 1 seeks to answer the question: **do outcomes on union street tree contracts differ from those on non-union contracts?** In order to test for differences, we obtained data on three specific outcome variables:

⁸⁰ <https://www.nycgovparks.org/trees/street-tree-planting/locations>

⁸¹ The active “Recent and Upcoming Street Tree Planting Locations” dataset published by DPR covers only one planting year. Using the Internet Archive’s Wayback Machine, the authors were able to obtain an August 2024 version of the street tree planting dataset, merge it with the active (January 2026) version, remove duplicates, and create a more comprehensive database of all plantings from the 12/31/2023 season through the 6/15/2027 season.

⁸² See the technical appendix for details on using the NYC open Forestry Management System (“ForMS”) relational database to join vendor, tree inspection, and risk rating attributes to the DPR “street tree planting” dataset available at <https://www.nycgovparks.org/trees/street-tree-planting/locations>.



- **Estimated Time to Plant:** The difference, in days, between a contract “Start Date”, as recorded in PASSPortCentral, and the “Completed Date” listed in the NYC DPR recently planted street tree dataset.⁸³
- **Risk Rating:** The tree point’s “overall risk rating” as established in the DPR Tree Points and Risk Rating datasets. A tree’s risk rating is an ordinal measure that ranges from 3 (lowest) to 12 (highest).⁸⁴ Higher Risk Ratings indicate greater likelihood of damage or failure. In this sense, Risk Rating acts as a proxy for detecting differences in work quality.⁸⁵
- **Surrounding Sidewalk Complaints:** A proxy variable for safety that quantifies the density of sidewalk-related complaints made by NYC residents to DPR via the City’s 311 system⁸⁶ since the start of 2025.⁸⁷ Whereas resident-driven 311 complaints for sidewalk safety need not be caused by a vendor’s tree planting work, it is possible to interrogate the extent to which areas in which union vendors performed tree planting exhibit safety complaint densities that are different from those in areas where non-union vendors performed tree planting work.⁸⁸

For each of these three outcome variables, we employ an appropriate inferential method to test the null hypothesis that union and non-union outcomes are roughly indistinguishable. In addition to these three outcome variables, we also compare initial bid prices of union and non-union contractors for the projects under investigation to test for systematic differences in bid prices between the two types of vendors.⁸⁹

3.2. Phase 2: Estimating Potential PLA Labor Cost Differentials for a Typical Street Tree Planting Contract Under Stylized Scenarios that Sequentially Add PLA Provisions

Once again, because there are no street tree planting PLAs to compare to non-PLA projects in NYC, a second-best strategy is needed to engage in Phase 2 of the analysis: investigating PLA feasibility. The second-best strategy developed herein is to perform some tractable math in a

⁸³ <https://www.nycgovparks.org/trees/street-tree-planting/locations>

⁸⁴ <https://docs.google.com/spreadsheets/d/1yMfZgcsrvx9M0b3-ZdEQ3Wck2dFkgitCWytTrJSwEAs/edit?gid=0#gid=0>

⁸⁵ Not all trees in the sample were linked to current risk ratings, given that all trees in the sample have been (relatively) newly planted. The subsample for this analysis consisted of just 1,939 individual trees, 1,148 (59.2%) of which were linked to union vendors and 791 (40.8%) of which were linked to non-union vendors.

⁸⁶ https://data.cityofnewyork.us/Social-Services/311-Service-Requests-from-2020-to-Present/erm2-nwe9/about_data

⁸⁷ Recall that we are analyzing contracts executed between 2021 and 2024, so the focus here is on recent complaints and safety concerns.

⁸⁸ There is a large literature on resident-driven 311 complaints and how variation in their spatial patterns is caused by many factors, including the propensity of a neighborhood’s residents to report concerns (see the summary in: Alyaout, A. (2021). *Geo-Analytics of Citizen-Government Interaction: The Integration of Spatial Data Mining, Volunteered Geographic Information (VGI), And Geovisualization to Explore Non-emergency Requests in the State of Kuwait*. Texas State University-San Marcos.). As such, the authors do not claim that complaints for tree-related sidewalk damage are due to negligent or faulty tree planting work by any of the vendors whose contracts were included in our analysis. Rather, we use this analysis merely to explore the possibility that the complaint density is systematically related to geographic locations in work areas where recent plantings have been performed primarily by union or non-union laborers.

⁸⁹ For bid prices, we use the Wilcoxon test to (roughly) compare median bids. The same method is used on the three key outcome variables. For the ordinal (Risk Rating) variable, we use only the nonparametric Wilcoxon test. For the continuous (completion time and complaint density) variables, we also use appropriate parametric tests (t-test for the continuous complaint density variable that is not substantively affected by the presence of outliers; and a Robust Cauchy Fit for the completion time variable that contains several outlying observations).



stylized thought exercise whose parameter values are inherited directly from the results of Phase 1.⁹⁰

Specifically, drawing on data for (1) an average or typical competitive DPR Forestry construction project, (2) prevailing wage rates, and (3) findings from Phase 1 related to timeliness, quality, and safety, we develop and analyze five scenarios with increasing (for our purposes, quantifiable) PLA provisions. These scenarios are summarized in Figure 3.2, below, and range from a “Baseline” or “Null” scenario through a strong PLA scenario (#4) that features standardized crews and wages, group fringe benefit funds, higher safety standards, faster planting, and alternative dispute resolution (“ADR”) procedures. We further quantify potential changes in average Minority- and Women-Owned Business Enterprise (M/WBE) subawards that could occur by moving from the status quo to a strong street tree planting PLA.

Figure 3.2. Description of PLA Scenarios⁹¹

Parameter	Baseline	PLA 1	PLA 2	PLA 3	PLA 4
Standardized Crew Size: 3 Laborers + 3 Green Infrastructure	No	Yes	Yes	Yes	Yes
Group Benefits Fund for All Employees (Lower Worker’s Comp Insurance Cost)	No	Yes	Yes	Yes	Yes
Higher Safety and Quality Standards	No	No	No	Yes (20% higher safety rating)	Yes (31% higher safety rating)
Greater Efficiency (Time Savings)	No	No	Yes (PLA saves two weeks on an average contract)	Yes (PLA saves five weeks on an average contract)	Yes (PLA saves two months on an average contract)
Alternative Dispute Resolution (“ADR”)	No	No	No	Yes (1% savings)	Yes (1% savings)

⁹⁰ As well as plausible values from the academic literature for estimates related to safety differentials and ADR savings. See Section 4.

⁹¹ Refer to Section 4.2 for a discussion on how these parameters were set using results derived in Section 4.1.

4. Findings

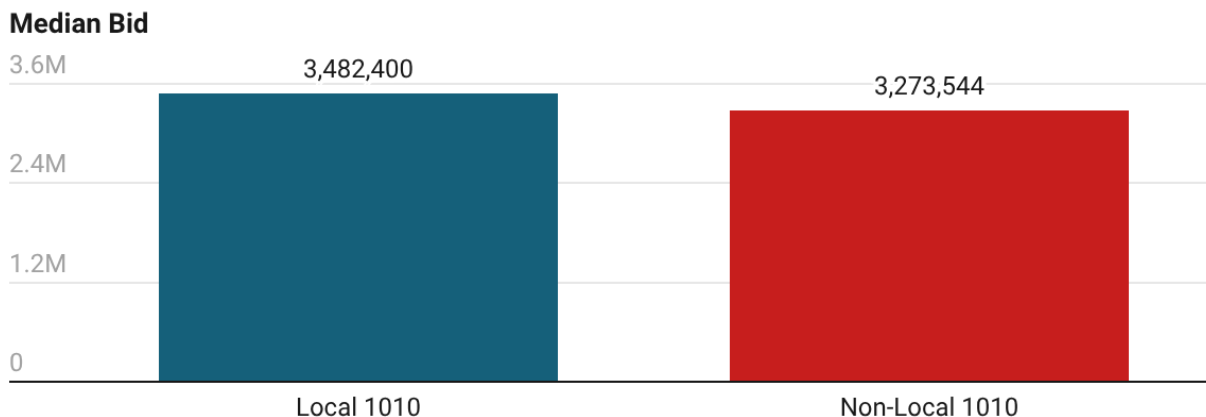
4.1. Comparing Union and Non-Union Tree Planting Outcomes⁹²

4.1.1. Price Differences Between Local 1010 and Non-Local 1010 Tree Planting Contract Bids Are Statistically Significant, But Small in Magnitude

Using the NYC PASSPortCentral website, the research team identified 183 unique proposals submitted in response to Department of Parks and Recreation (“DPR”) tree planting projects that were subject to competitive solicitation between 2021 and 2024. Of these proposals, 89 were submitted by non-Local 1010 firms, 76 by Local 1010 firms, and 18 by firms whose status was not identifiable and therefore omitted from analyses.

For the 165 vendors whose union status was known, the grand median bid for tree planting contracts between 2021 and 2024 was \$3,373,817 (2024\$). The median Local 1010 bid was \$3,482,400 (2024\$), roughly 6% higher than the median non-Local 1010 bid of \$3,273,544 (2024\$) and 3% higher than the overall median.

Figure 4.1. Comparison of Median Bid Prices for Competitive DPR Tree Planting Contracts, by Local 1010 Status, FY2021–FY2024



Median Bid Universe: $n=165$ bids on competitive solicitations from FY2021 through FY 2024

Median Difference Universe: $n=36$ winning bids with complete data; Values are shown in 2024\$.

Source: Authors' Analyses of NYC Open Data • Created with Datawrapper

Despite statistical testing that suggests the slightly higher median bid observed for union vendors is not due to chance alone,⁹³ the magnitude of the difference in medians is quite small compared to the size of a typical bid. Thus, there is little compelling evidence to suggest that the cost of union tree planting is substantially different from non-union tree planting. More importantly, however, as shown below, there *is* evidence that tree planting labor performed by Local 1010 firms appears to have several quality and efficiency advantages that arguably create

⁹² Refer to footnote 38.

⁹³ A Wilcoxon test revealed that this difference is statistically significant at a 95% level of confidence ($z=2.01871$; $p=0.044<0.05$). The Wilcoxon test is roughly a test for the equality of two medians (see: Weaver, R., Bagchi-Sen, S., Knight, J., & Frazier, A. E. (2016). *Shrinking cities: Understanding urban decline in the United States*. Routledge.). ($n=165$)

long-term benefits for NYC. Such differences, in addition to other benefits from adopting union standards, are shown below to outweigh the minor union premium observed in median bid prices.

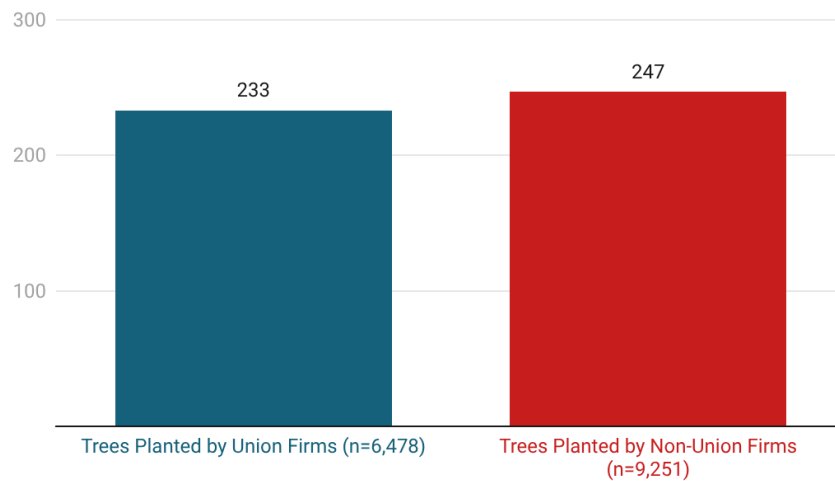
4.1.2. Local 1010 Contracts Are Linked to Faster Tree Planting

As part of its street tree planting program, NYC DPR provides data on where and when trees are planted.⁹⁴ Alongside identifying tree information, the DPR data show whether a tree planting is “Completed” or “Not Complete”. The research team compared the planting date for “Completed” trees to their respective contract start dates to generate an “Estimated Time to Plant” outcome variable.

For the sample of 15,730 completed tree plantings that the authors were able to directly link to one of the DPR contracts under investigation,⁹⁵ we found:

- The median Estimated Time to Plant for Local 1010 firms was 233 days versus 247 days for non-Local 1010 firms.
- In other words, the median number of days between a contract execution and a tree planting is plausibly two weeks faster for Local 1010 firms compared to their counterparts.⁹⁶

Figure 4.2. Median Days Between Contract Start Date and Completed Planting Date for Selected Trees



Universe: 15,730 trees with completed planting dates planted under competitive bidding contracts awarded between FY2021 and FY2024.

Source: Authors' analyses of NYC Open Data • Created with Datawrapper

Performing a robust test known as a “Cauchy Fit”, which accounts for and reduces the influence of outliers, the corresponding difference in **average** “time to plant” between union and non-union

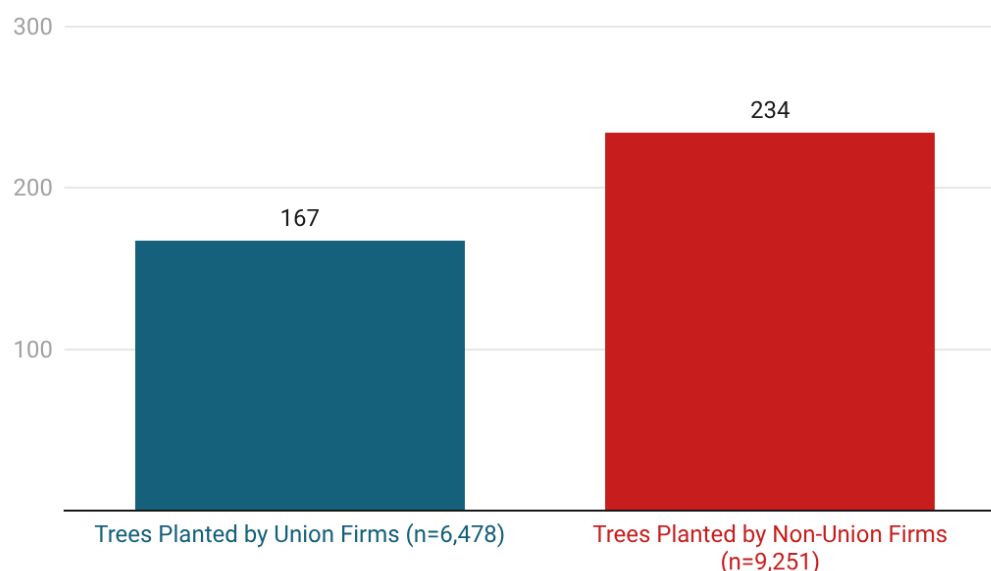
⁹⁴ <https://www.nycgovparks.org/trees/street-tree-planting/locations>

⁹⁵ Refer to footnote 81.

⁹⁶ This difference was highly statistically significant (>99% level of confidence). The p-value for the Wilcoxon test was less than 0.0001, indicating that the observed difference is almost certainly not the result of chance alone.

contractors was 67 days (234 for non-union, 167 for union).⁹⁷ This difference was highly statistically significant. Taken together, the differences in median and average planting speed suggest that union contractors are ostensibly quicker to plant trees than their non-union counterparts by anywhere between roughly two weeks and two months.

Figure 4.3. Average Days Between Contract Start Date and Completed Planting for Selected Trees⁹⁸



Universe: 15,730 trees with completed planting dates planted under competitive bidding contracts awarded between FY2021 and FY2024. Robust means computed using maximum likelihood and a Cauchy link function to reduce emphasis of outliers.

Source: Authors' analyses of NYC Open Data • Created with Datawrapper

4.1.3. Local 1010 Contracts Are Linked to Lower Tree Risk Ratings

Of the completed tree plantings that were matched to their attributes in the NYC DPR Forestry Tree Points dataset, 1,939 records exhibited non-missing values in the “Risk Rating” attribute, where higher values mean greater risk of tree failure. For the 1,148 of these records that were associated with Local 1010 contracts, the median risk rating was 4, compared to a median risk rating of 5 for the 791 trees linked to non–Local 1010 planting contracts. This difference was

⁹⁷ This test “estimates parameters using maximum likelihood and a Cauchy link function. This method assumes that the errors have a Cauchy distribution. A Cauchy distribution has fatter tails than the normal distribution, resulting in a reduced emphasis on outliers.” Because of the presence of several outlying tree plantings, this method offers a “robust”, less sensitive-to-outliers way of (roughly) comparing plant time. For this specific test, the robust mean time to plant was 166.954 (std err=4.163) for Local 1010 firms and 233.893 (std err=1.463) for non–Local 1010 firms. The test statistic ($\chi^2[1] = 230.416, p \ll 0.001$). See: Proust, M., & JMP, A. (2024). Basic Analysis. <https://www.jmp.com/content/dam/jmp/documents/en/support/jmp172/basic-analysis.pdf>

⁹⁸ Robust means computed using a Cauchy Fit.



highly statistically significant, indicating a nonrandom association between vendor type and a tree's risk rating.⁹⁹

Consistent with longstanding empirical evidence that union construction labor often exhibits quality and safety advantages over non-union labor,¹⁰⁰ these findings suggest that greater use of well-trained union tree planters can generate long-term benefits with respect to tree preservation and survival in NYC.

4.1.4. The Density of 311 Complaints for DPR Tree-Related Sidewalk Danger is Lower in Local 1010 Contract Performance Areas

The final comparison for Phase 1 of the analysis looks at the density of sidewalk safety complaints that were made to DPR via NYC's 311 system in the most recent full calendar year (2025). In the heatmap below (Fig. 4.4), the "hot" hues (e.g., symbolized in the orange-to-red gradient) represent spaces where the density of DPR sidewalk complaints per square mile is high. "Cooler" hues (symbolized with varying intensities of green) are territories where 311 sidewalk complaints are relatively low, with areas depicted in yellow falling in the middle. Overlaid onto the 311 complaint density layer is a layer containing the 15,730 tree points associated with trees that have already been planted under a recent (2021–2024) DPR Forestry contract. Purple points are trees planted under contracts won by Local 1010 firms, whereas blue points show trees planted by non-Local 1010 firms.

The median density of new (2025) sidewalk complaints made around the 6,478 trees shown in purple (Local 1010 planted) is 26.37 per square mile, compared to a median complaint density of 37.30 per square mile in the locations depicted in white (non-Local 1010 planted trees).¹⁰¹ This difference is highly statistically significant, meaning that it cannot be the product of chance alone.¹⁰² The same conclusion holds when comparing averages. Mean complaint density surrounding Local 1010 planted tree points was 32.00, compared to 38.88 around non-Local 1010 planted trees. This difference is statistically significant at all conventional levels of confidence (Figure 4.5).¹⁰³

These results support the claim that spaces in which Local 1010 labor performed recent tree planting work are associated with fewer—and a lower density of—current (2025) sidewalk-related 311 complaints than the spaces where non-Local 1010 labor performed planting services. Importantly, according to the NYC Office of the Comptroller, defective DPR sidewalks

⁹⁹ A Wilcoxon test of the null hypothesis that median risk ratings are roughly the same can be rejected at all conventional levels of confidence ($z=6.621$, $p<<0.001$).

¹⁰⁰ See, for example, the discussion in: Weaver & Brady (2023).

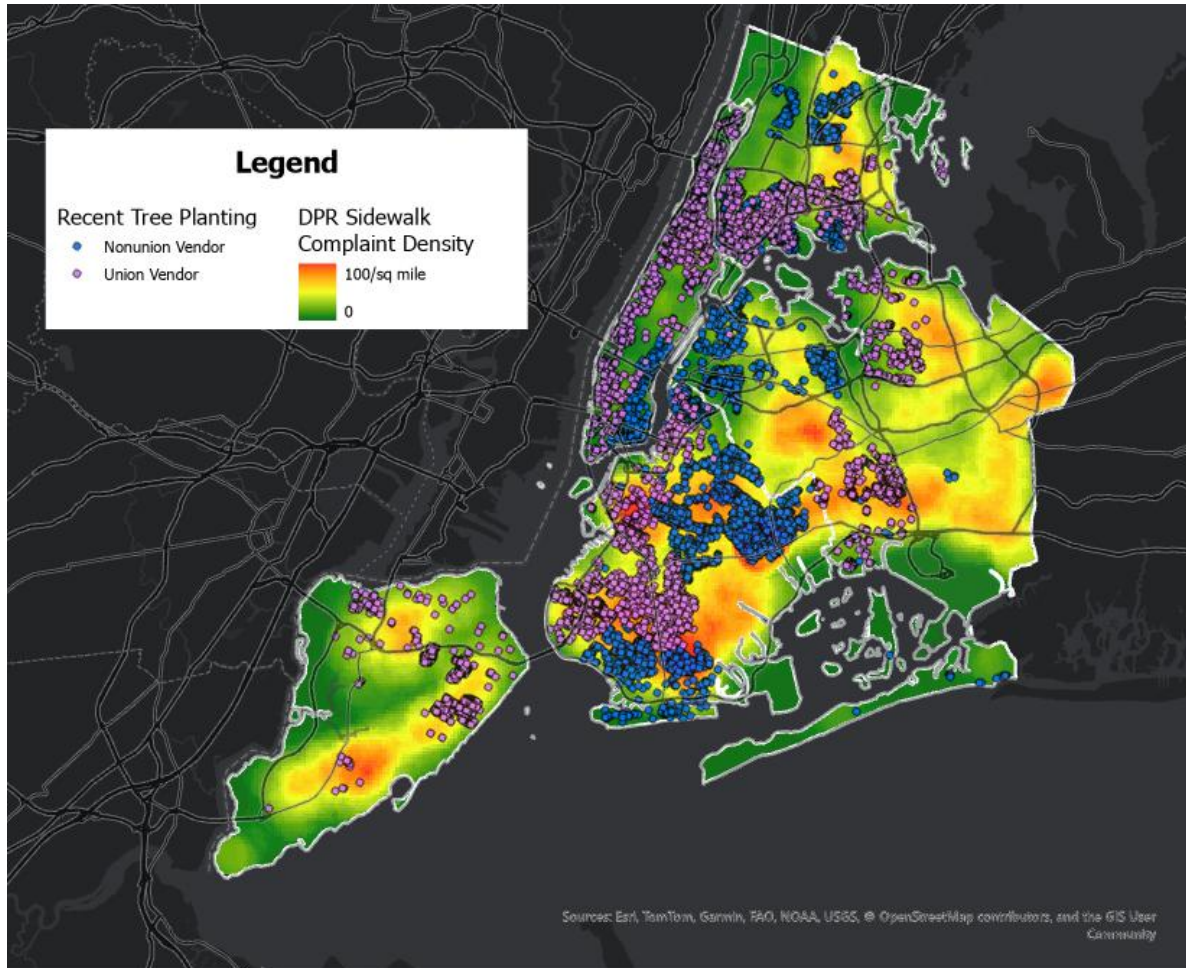
¹⁰¹ For each tree point represented in the map, the research team extracted the corresponding value from the 311 complaint density layer in that location. Importantly, 311 sidewalk complaints are not necessarily linkable to a specific tree. Complaints are often described spatially based on their location relative to the City's street address network, and locations are not always precise. As such, the summary data that follow are not specific to the trees shown on the map. They are, rather, indicative of whether complaints are generally higher or lower around trees planted by union or non-union firms in recent years. Once again, we do not claim that complaints for tree-related sidewalk damage are due to negligent or faulty tree planting work by any of the vendors whose contracts were included in our analysis. Rather, we use this analysis merely to explore the possibility that the complaint density is systematically related to geographic locations in work areas where recent plantings have been performed primarily by union or non-union laborers.

¹⁰² The p-value for the Wilcoxon test of the null hypothesis of (rough) equality of medians is less than 0.0001.

¹⁰³ $t=-18.939$, $p<<0.001$.

cost City taxpayers roughly \$20 million in insurance settlements between fiscal years 2017 and 2023, according to open data on insurance claims filed against the City.¹⁰⁴

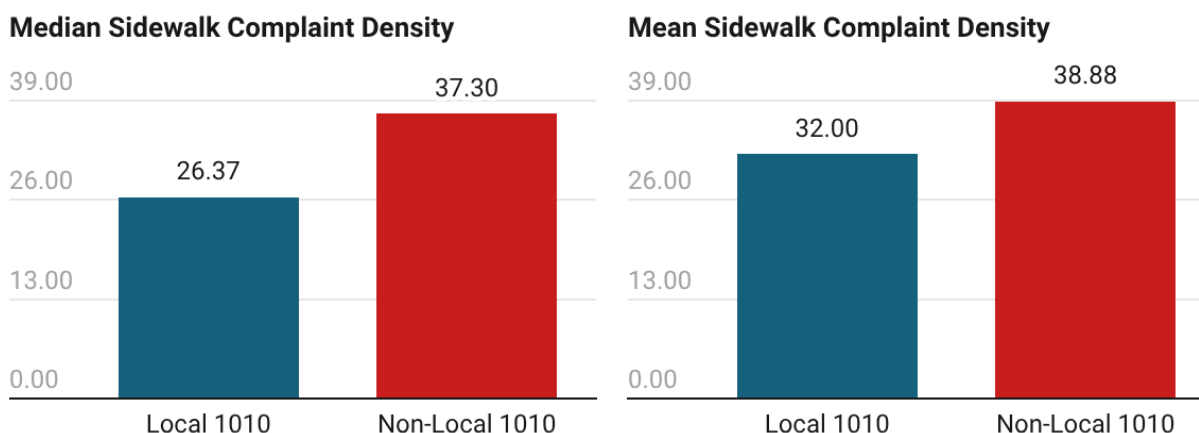
Figure 4.4. Density of Sidewalk Complaints Made to DPR Via 311 in 2025



¹⁰⁴ The actual disposition amount was \$19.74 million in nominal dollars, or nearly \$3 million per year.



Figure 4.5. Comparing Density of Sidewalk Complaints (per Square Mile) Made to DPR Via 311 in 2025 for Recently Planted Trees, by Vendor Type



n=15,730; Local 1010 *n*=6,478; Non-Local 1010 *n*=9,252

Source: Authors' Analyses of NYC Open Data • Created with Datawrapper

4.2. Estimating Potential PLA Cost Differentials Under Hypothetical Scenarios

4.2.1. Setting Up and Calibrating the Scenarios with Findings from Above

Between established observations from the PLA literature presented in Section 2 and the empirical estimates derived above in Section 4.1, it is now possible to set up and calibrate the “Baseline” and four “PLA” scenarios described in Section 3.2.

To begin, Table 4.1 presents eight global parameters that feature in all five scenarios. In order to simulate how labor cost structures might change for a typical planting contract under a PLA that adopts union standards, it is necessary to define a “typical planting contract”. As shown in the top row of Table 4.1, the average **award** amount for the 43 contracts included in our sample was just under \$5 million (\$4,708,934.46). The average length between the specified contract start and end dates was 618 days. Acknowledging that NYC planting seasons collectively amount to 180 days,¹⁰⁵ the implication is that there are approximately 306 work days on a typical contract.¹⁰⁶ For a standardized five-day work week at 40 hours per week,¹⁰⁷ 306 work days translates into a 62-week contract. In the penultimate row, for the purpose of computing labor cost savings associated with group fringe benefit funds—which decrease what counts as a firm’s payroll when figuring its workers’ compensation insurance premium—Table 4.1 shows that roughly 40% of non-union construction workers in NYC receive employer-provided benefits compared to around 90% of union workers.¹⁰⁸ Finally, the bottom row of the table presents the current New York State Insurance Fund (“NYSIF”) Workers’ Compensation class code rate (for

¹⁰⁵ Hill International (2009).

¹⁰⁶ To arrive at this number, we divide the average contract length (618 days) by the number of days in a year (364.25) and multiply by the number of planting days (180). We then round this figure up to the nearest day.

¹⁰⁷ Hill International (2009).

¹⁰⁸ Weaver & Brady (2023).



computing workers' compensation premiums) for the NYSIF occupation "Street or road construction- beautification work- & drivers".

Table 4.1. Global Parameters for All Five Scenarios

Global Parameter	Value	Source
Average Current Value of a Capital Forestry Sealed Bid Contract NYC PASSport (n=43)	\$4,708,934.46	NYS PASSPortCentral data for 43 competitive construction tree planting projects issued by DPR between 2021 and 2024
Average Contract Length (Days)	618	Ibid.
Typical Planting Days Per Year	180	Hill International (2009)
Approximate Number of Work Days on Average Contract	306	Computed from above
Approximate Number of Five-Day Work Weeks on Average Contract	62	Computed from above
Standardized Weekly Hours	40	Hypothetical PLA provision to standardize work hours; see: Hill International (2009)
Estimated % of Non-Union Construction Workers with Employer-Provided Benefits	40%	Weaver & Brady (2023)
NYSIF Workers' Comp Rate	3.15	NYSIF

Additional global parameters that are applicable to all scenarios are the current collectively bargained wage and supplemental benefit rates for the trades and titles involved in street tree planting work (Table 4.2). According to Hill International, a typical NYC street tree planting crew might consist of four Laborers; one Laborer Apprentice; one Landscaper, or, for present purposes, "Green Infrastructure" worker; and one Foreman—for a total of seven crew members.¹⁰⁹

While the baseline scenario below is set up to compute weekly labor costs for this seven-member (non-union) crew, one potential PLA provision for street tree planting could be to standardize the planting work crew. In consultation with key informants from Local 1010, one possibility for standardizing work crews is to make them six-member teams that are split evenly between Laborers (3) and Green Infrastructure workers (3).

Table 4.2 shows the current wage and supplemental rates for each of the titles named above, as they appear in the NYC Comptroller's Construction Worker Prevailing Wage Schedule.¹¹⁰

¹⁰⁹ Hill International (2009).

¹¹⁰ See: <https://comptroller.nyc.gov/services/for-the-public/workers-rights/wage-schedules/>



Table 4.2. Current Wage and Supplemental Rates for All Five Scenarios

Occupation	Straight Time	Overtime	Supplemental Benefit Rate
Laborer	46.33	69.50	55.00
Laborer Apprentice – First Year	32.21	48.32	27.82
Laborer Apprentice – Second Year	33.85	50.78	27.82
Green Infrastructure	40.00	60.00	21.17 ¹¹¹
Green Infrastructure Apprentice – First Year	31.36	47.04	19.27 ¹¹²
Green Infrastructure Apprentice – Second Year	33.00	49.50	19.27
Foreman	50.80	76.20	55.00

Next, to operationalize the *scenario-specific* (i.e., not global) parameters for each stylized case, we draw on estimates produced in Section 4.1, as well as established values from relevant academic literature. For each of the four non-null scenarios, Table 4.3 specifies how and from where applicable parameters were set.

¹¹¹ The 1010 supplemental rate was increased to \$23.27 per hour in early 2026, after analysis for this part of the project was completed. All analyses use the \$21.17 rate from 2025. <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionWorkersSchedule-2025-2026.pdf>

¹¹² Rates based on the “Paver and Roadbuilder – Line Striping (Roadway)” apprentice rates in the current prevailing wage schedule, from Local 1010: <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionApprenticeSchedule-2025-2026.pdf>. Note that “Green Infrastructure” laborers are also listed as “Striping Assistants” in the City’s prevailing wage schedule: <https://comptroller.nyc.gov/wp-content/uploads/documents/ConstructionWorkersSchedule-2025-2026.pdf>



Table 4.3. Scenario-Specific Parameters

Scenario	Scenario-Specific Parameters		
	Higher Safety Standards	Greater Efficiency (Time Savings)	Group Benefit Funds
Baseline	Not present	No time savings	Non-union; no group benefit fund
PLA 1	Not present	No time savings	Group benefit fund with no safety advantage
PLA 2	Not present	Two-week savings (source: Fig. 4.2)	Group benefit fund with no safety advantage
PLA 3	Union standards result in 20% higher safety compared to benchmark (source: Sec. 4.1.3)	Five-week savings (source: rough midpoint between Figs. 4.2 and 4.3)	Group benefit fund with 20% higher safety standards (column 1)
PLA 4	Union standards result in 31% higher safety compared to benchmark (see: Weaver & Brady (2023))	Two-month savings (source: Fig. 4.3) ¹¹³	Group benefit fund with 31% higher safety standards (column 1)

Benefits stemming from higher safety and quality standards can be difficult to quantify given that many of them are intangible. Nevertheless, one implication of high safety standards is a reduction in injuries and, it follows, fewer workers' compensation claims. Insurance providers recognize the inverse relationship between safety and workers' compensation payments when calculating a firm's workers' compensation insurance premium. When a firm is characterized by more experience and better safety outcomes, insurers use a multiplier called an *Experience Modification Rate* ("EMR") to decrease the cost of workers' compensation insurance for that firm ($0 < \text{EMR} < 1$). Firms with less experience and poor safety outcomes are characterized by EMRs that *increase* insurance costs ($\text{EMR} > 1$), given the perception that workers in such firms are more likely to experience injuries and make workers' compensation claims.

Following the methodology developed by Weaver and Brady in their recent work on prevailing wages in NYC concrete trades,¹¹⁴ we use the EMR to simulate safety and quality differentials between the status quo and the *union standards* one would expect to be adopted in a PLA.¹¹⁵

¹¹³ We approximate two months as nine weeks in the scenario modeling exercise.

¹¹⁴ Weaver & Brady (2023).

¹¹⁵ Following Weaver & Brady (2023), labor costs are computed as:

Labor Costs = Total Wages + Total Fringe + Total Workers' Compensation

where:

Total Wages = $\sum (H_{it} * p_{t,i} * PW_{t,i})$

Total Fringe = $\sum (H_{it} * p_{t,i} * SBPW_{t,i})$



Specifically, to model a scenario in which PLA/union labor standards are 20% safer than the status quo (see PLA Scenario 3 in Table 4.3), we set the [PLA] bidder's EMR to 0.8 (20% safer than the default EMR of 1.0, which neither inflates nor deflates a firm's workers' compensation premium). Likewise, EMR is set to 0.69 (31% safer than the status quo) for PLA Scenario 4.

Using this technique allows us to quantify potential workers' compensation insurance cost savings, in dollars, for experienced firms with high safety standards. Whereas these savings speak to actual potential savings in one domain of labor costs (insurance), *they necessarily underestimate the full direct and indirect benefits associated with high construction safety and quality standards*. Indeed, additional benefits can be realized in the form of: fewer post-planting tort claims for tree-related sidewalk damage by sidewalk users in NYC; reduced long-term maintenance costs; and more.¹¹⁶ For these reasons, in both PLA scenarios that call for higher safety standards, estimated benefits are likely to be *understatements* of aggregate potential savings and value created by the PLA.

Finally, absent empirical data on the savings that DPR tree planting contracts might experience from establishing an Alternative Dispute Resolution ("ADR") procedure for efficiently resolving both contractual and jurisdictional disputes outside of slower legal channels, in PLA Scenarios 3 and 4 we make the conservative estimate that ADR could shave at least 1% off of a project's total labor costs. Compared to plausible ADR savings rates used by Hill International in their PLA feasibility studies, which are in the range of 5 to 10%,¹¹⁷ our 1% ADR savings parameter is arguably understated. Hence, as was the case with the true value of safety- and quality-related benefits above, in both PLA scenarios that call for the adoption of ADR, estimated benefits are likely to fall meaningfully *below* the true possible savings that could be experienced under such PLAs.

Combined with the global parameters from Tables 4.1 and 4.2, the scenario-specific parameters from Table 4.3 produce the concise summary of the five scenarios under investigation (Fig. 1.1), which is reproduced as Figure 4.6 below for convenience.

$$\text{Total Workers' Comp} = \sum ((\text{Payroll}_t / 100) * \text{Class Code}_t * \text{EMR}_b)$$

In these equations, the symbol $\sum$ is a summation operator that instructs the analyst to sum over the terms included in the parentheses. Those terms are as follows: H_t is equal to the total labor hours estimated for trade t ; pt_i is the percentage of hours estimated for trade t that will be assigned to rank i (for union bidders, i includes, where appropriate, A-Book/Journey, B-Book/Provisional, and First-, Second-, Third-, and Fourth-Year Apprentices; for non-union bidders, i is assumed to include only the first two of these ranks); $PW_{t,i}$ is the prevailing wage for trade t at rank i , as drawn from the 2025-26 NYC Wage Schedules; $SBPW_{t,i}$ is the supplemental benefit prevailing wage rate, as drawn from the 2025-26 NYC Wage Schedules; Payroll_t is the sum of wages and qualifying fringe benefits for trade t , where qualifying fringe benefits include only the non-pension and non-health benefits portions of a worker's fringe package—if, as is the case for most non-union shops, some meaningful percentage of a bidder's workers do not receive employer-provided fringe benefits, then, for that percentage of workers, qualifying fringe is equal to total fringe; Class Code_t is the NYSIF workers' comp class code for trade t ; and EMR_b is the bidder's workers' comp experience modification rate. For workers' comp calculations, Payroll_t is equal to the sum of total wages plus *qualifying fringe*, where qualifying fringe is equal to the value of fringe benefits *other than* group health and pension benefits. For bidders characterized by large percentages of workers who do not receive employer-provided fringe benefits (i.e., most non-union bidders), those workers are paid the *Supplemental Benefit Prevailing Wage* (SBPW). Thus, for that fraction of workers/hours, *qualifying fringe* becomes equal to total fringe.

¹¹⁶ As a thought exercise, Scenarios 3 and 4 both estimate additional savings from higher safety and quality by reducing the average annual disposition paid out for DPR sidewalk-related tort claims by the same degree we adjust EMR. Namely, in Scenario 3, if higher safety and quality standards reduce the average annual sidewalk settlement (\$2,975,265.00) by 20%, then the City's taxpayers should save an additional \$595,000 per year in the form of fewer tort payouts.

¹¹⁷ Hill International (2009).



Figure 4.6. Description of PLA Scenarios

Parameter	Baseline	PLA 1	PLA 2	PLA 3	PLA 4
Standardized Crew Size: 3 Laborers + 3 Green Infrastructure	No	Yes	Yes	Yes	Yes
Group Benefits Fund for All Employees (Lower Worker's Comp Insurance Cost)	No	Yes	Yes	Yes	Yes
Higher Safety and Quality Standards	No	No	No	Yes (20% higher safety rating)	Yes (31% higher safety rating)
Greater Efficiency (Time Savings)	No	No	Yes (PLA saves two weeks on an average contract)	Yes (PLA saves five weeks on an average contract)	Yes (PLA saves two months on an average contract)
Alternative Dispute Resolution ("ADR")	No	No	No	Yes (1% savings)	Yes (1% savings)

4.2.2. Estimated Cost Savings in Each Scenario

Having seeded each of the five scenarios with parameters derived directly from empirical analyses of DPR street tree contracts and instructive literature, the remaining tasks are purely mathematical. Namely, we compute total labor costs on an average contract (Table 4.1) for each scenario's specified crew by:

- Multiplying current wage and benefit rates (Table 4.2) by the number of total workers in each title, assuming that each worker works a standardized 40 hours per week (Table 4.1);¹¹⁸
- Using these totals to compute weekly *payroll* and, from there, *workers' compensation insurance costs*;¹¹⁹
- Computing savings associated with great safety, time savings, and ADR provisions (Figure 4.6);
- Aggregating costs over the length of the contract (62 weeks on average; 53–60 weeks when expected time savings from PLA scenarios 2, 3, and 4 are introduced); and
- Summing up the total expected savings on a PLA scenario relative to a baseline contract.

Because DPR issues multiple planting contracts per year—recall that we identified 43 competitive street tree planting construction contracts between FY2021 and FY2024—it is important to keep in mind that any savings estimated for *one* typical contract will accumulate as

¹¹⁸ This calculation gives an estimate of total weekly wages and fringe.

¹¹⁹ Refer to footnote 112 for precise calculation details. For non-union firms that do not currently pay into group benefit funds, supplemental fringe benefit payments required on publicly funded projects are issued to employees who do not receive employer-provided benefits. These payments count toward the firm's payroll for the purposes of its workers' compensation insurance costs. Under a PLA, which uses the union "fund approach" to group benefits, fringe payments into the (private) group benefit fund are not counted as payroll, leading to (often significantly) lower premiums and insurance costs.



more PLA contracts are issued by DPR. Based on our identification of 43 relevant contracts over four fiscal years (for an average of just over 10 per year), we explore total potential savings for each PLA scenario under the assumption that 10 street tree planting contracts are issued in a typical year.

On that backdrop, Table 4.4 gives a side-by-side comparison of estimates for **total labor costs** (wages plus fringe plus insurance; see footnote 115 for definition and derivation) in each scenario. For each PLA scenario, Table 4.5 then (1) breaks down estimated labor cost savings by source, and, where appropriate, (2) provides estimates on additional annual savings from improved quality (lower tort dispositions) and dispute resolution procedures (ADR). Finally, Figure 4.7 presents a succinct summary of the labor cost savings per contract (percentage difference from the baseline scenario) and translates all observed per-contract cost savings into aggregate annual savings expected to be realized if DPR issues 10 street tree planting contracts in a given year.

Table 4.4. Estimated Per-Contract Savings on Total Labor Costs Under the Baseline and Four Hypothetical PLA Scenarios

Scenario	Total Estimated Labor Cost for a Typical Contract	Difference from Baseline (\$)	Difference from Baseline (%)
Baseline	\$1,334,293.24	--	--
PLA 1	\$1,229,232.30	-\$105,060.94	-7.9%
PLA 2	\$1,189,579.64	-\$144,713.60	-10.8%
PLA 3	\$1,126,380.53	-\$207,912.71	-15.6%
PLA 4	\$1,045,433.79	-\$288,859.45	-21.6%



Table 4.5. Breakdown of Estimated Cost Savings in Each PLA Scenario

Source of Savings	PLA 1	PLA 2	PLA 3	PLA 4
Standard Crew	\$96,769.60	\$96,769.60	\$96,769.60	\$96,769.60
Workers' Comp Premium Savings	\$8,291.34	\$8,291.34	\$8,291.34	\$8,291.34
Additional Workers' Comp Premium Savings for Higher Safety	--	--	\$4,046.46	\$6,272.01
Savings from Shorter Contracts (Faster Planting)	--	\$39,652.65	\$98,805.31	\$177,526.49
Total Labor Cost Savings	\$105,060.94	\$144,713.60	\$207,912.71	\$288,859.45
Potential Decrease in DPR Sidewalk Tort Payments Due to Higher Standards	--	--	\$595,053.00	\$922,332.15
ADR	--	--	\$112,638.05	\$104,543.38
Total Other Savings*	--	--	\$707,691.05	\$1,026,875.53
Total Savings	\$105,060.94	\$144,713.60	\$915,603.77	\$1,315,734.98

*Other savings are not presented on a per-contract basis. They are assumed to apply to the totality of tree planting contracts issued by DPR in a given year.

Figure 4.7. Summary of Findings (Reproduction of Fig. 1.2)

PLA Scenario	% Labor Cost Savings on a Typical Project Relative to Baseline	Hypothetical Annual Savings on Ten Capital Forestry Tree Planting Contracts Per Year
1	7.9%	\$1,050,609.44
2	10.8%	\$1,447,135.99
3*	15.6%	\$2,786,818.19
4*	21.6%	\$3,915,470.03

*Includes "Other Savings" from Table 4.5

4.2.3. Additional Considerations: M/WBE Share of Work

With respect to Minority- and Women-Owned Business Enterprise (M/WBE) usage, the authors reviewed waiver request and usage reports published by the Mayor's Office of Contract Services¹²⁰ from the first quarter in 2024 to the first quarter in 2026. Within that two-fiscal-year window, the authors identified 620 individual M/WBE waiver requests. More than half of those requests (n=319) were submitted to DPR by contractors engaged in active projects. Of those request records, 180 were associated with contractors who perform tree planting and site work for DPR.¹²¹ Those 180 records were linked to just five firms: Almstead Tree & Shrub Care Co. LLC (n=2); Dragonetti Brothers Landscaping Nursery & Florist, Inc. (n=90); Quintal Contracting Corp (n=2); Robert Bello Landscaping Service (n=6); and Rocco Agostino Landscaping

¹²⁰ <https://www.nyc.gov/site/mocs/opportunities/m-wbe-reports.page>

¹²¹ Personal communication, Local 1010 advisory group.



(n=80).¹²² Crucially, none of these firms are Local 1010 contractors, suggesting that adopting union standards (PLAs) on street tree planting projects—in addition to the potential gains observed above in quality, safety, and efficiency—is also better for NYC’s M/WBE firms and the City’s M/WBE initiative relative to the status quo.

More explicitly, of the 180 M/WBE waiver request records we identified, 78 were either fully or partially granted after review. Seventy-six (76) out of the 78 approved waiver records were linked to specific contracts by identifying instances in which the fiscal year of the waiver request corresponded to the fiscal year of a contract for a given vendor. In cases where such linkages were not feasible, the average value of a given vendor’s contract during the past two fiscal years was used.¹²³ Multiplying these contract values by both (1) the original M/WBE goal for the contract and (2) the actual M/WBE target granted in each waiver, it is possible to generate a rough estimate of average M/WBE underpayment on recent (i.e., last two fiscal years) contracts. These estimates can be further compared to the average subaward that an M/WBE would be expected to receive if street tree contracts were subject to the NYC citywide goal of 30% usage. These estimates are summarized in Figure 1.3, reproduced as Figure 4.7 below for convenience.

4.3. Summary of Findings

Taken together, the results produced in this section suggest that not only is a PLA for street planting work in NYC *feasible*, the mechanism would likely yield the following *positive benefits*:

- Substantive cost savings from standardizing work crew compositions and making use of the relatively new “Green Infrastructure” pay rate;
- Nontrivial cost savings from establishing a joint-trustee group benefit fund for all workers on the PLA project;
- Upward pressure on safety standards, resulting in greater immediate cost savings on insurance premiums and potential long-term savings in the form of reduced tort claims;
- Upward pressure on quality standards;
- Faster contract execution and quicker tree planting;
- Faster dispute resolution; and
- Improved capacity to meet or exceed M/WBE goals and suspension of M/WBE waivers, thereby increasing the usage of and dollars flowing to M/WBE subcontractors.

For these reasons, the City of New York Department of Parks and Recreation is well positioned to generate even greater “social and economic benefits”¹²⁴ for the people, workers, and neighborhoods of NYC through the use of PLAs on its tree planting and site work contracts.

¹²² Notably, none of these vendors are affiliated with Local 1010. No request records from Local 1010 vendors were identified in the dataset.

¹²³ These average values are as follows: Dragonetti—\$3,727,676; Robert Bello—\$3,086,895; and Rocco Agostino—\$2,848,821.

¹²⁴ Kotler (2011).



Figure 4.7. PLAs Can Reduce the Use of M/WBE Waivers to Better Reach State and Local M/WBE Goals and Increase Payments to M/WBE Firms

Measure	Amount to M/WBE	Notes
30% M/WBE Goal*	\$954,260.42	Effective average M/WBE share of contract: 30.0%
Expected Value of Average Funding* to M/WBE Firms if No Waivers Are Issued	\$766,956.46	Effective average M/WBE share of contract: 24.1%
Actual Average Funding* to M/WBE Firms After Waivers Were Granted	\$628,423.99	Effective average M/WBE share of contract: 19.8%
Difference in Average M/WBE Funding Due to Waivers	\$138,532.48	Eliminating waivers under a PLA could increase average funding to M/WBE contractors by 22%, or nearly \$140k on an average contract, getting closer to the statewide 30% goal

* The average contract value for this period of time and subset of contracts was \$3,180,868.03



5. Conclusion

Project Labor Agreements (“PLAs”) are comprehensive, pre-hire collective bargaining agreements that standardize labor relations on complex construction projects, providing a planned approach to managing risk, ensuring labor stability, promoting workforce development, and pursuing policy objectives. In New York City (“NYC”) and New York State (“NYS”), PLAs have been widely adopted across the public sector.

The most rigorous academic studies find no statistically significant effect of PLAs on construction costs or bid competition when appropriate controls are included. Instead, PLAs are associated with substantial benefits in terms of project efficiency, safety, workforce development, and equity. They provide robust mechanisms for prevailing wage compliance, apprenticeship utilization, local hiring, and Minority- and Women-Owned Business Enterprise (“M/WBE”) participation, contributing to the creation of middle-class careers and the advancement of community and social policy goals.

Whereas the NYC Department of Parks and Recreation (“DPR”) employs the PLA structure for many of the competitive construction projects it bids out, street tree planting contracts have been excluded from PLA usage. This report finds that this situation is plausibly leaving public benefits on the table. Namely, we found that there is likely a “union advantage” in NYC street tree planting that can come to bear on all tree planting contracts via integrating *union standards* into a street tree planting PLA. Specific upsides from adopting union standards ostensibly include, among others:

- Faster tree planting (between two weeks and two months);
- Lower risk of tree failure (lower risk ratings);
- Upward pressure on local tree and sidewalk safety (lower densities of sidewalk complaints in surrounding areas); and
- Greater utilization of M/WBE firms (zero waiver requests by union firms).

In addition to these benefits, we observed ample competition for recent tree planting contracts. While we only studied outcome metrics for the 36 projects for which we were able to obtain complete data, the 43 projects we initially identified as occurring between FY2021 and FY2024 were associated with 183 unique bid proposals, or about 4.25 bids per project.

Although proposals from Local 1010 firms were linked to slightly higher bid prices—namely, the median Local 1010 bid was about 6% higher than the median non-Local 1010 bid—the magnitude of this premium is arguably quite small relative to the potential benefits (Section 4). Consistent with longstanding empirical evidence that union construction labor might exhibit quality and safety advantages over non-union labor, these findings suggest that greater use of well-trained union tree planters can generate long-term benefits with respect to tree preservation and survival in NYC.

Based on the findings presented above, and their compatibility with longstanding empirical literature on union advantages in construction labor, we conclude that efforts to apply prevailing *union standards*—e.g., for work quality, for wages, for benefits, worker training, and so on—to DPR tree planting construction contracts has the potential to save trees, time, and money in



New York City. ***Thus, not only is a street tree planting PLA feasible, it appears to be a good deal for the City, its residents, and its local construction workforce.***