Parks

Borough Forestry Performance Dashboard

Goals, Draft Specifications, and Mock-Up

Target Audience

- **Primary** -- Borough managers (Directors and Deputy Directors); M&O (Chiefs and DCs)
- **Secondary** – FHNR (Central Forestry managers and GIS & Analytics team)
- **Tertiary** – FDC and COO

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Business and Technical Owners

There are seven primary business owners:

- 5 Borough Forestry divisions (operations)
- COO/FDC (accountability)
- FHNR Central Forestry (technical support, analyses and policy)

There is one primary technical owner:

- FHNR GIS & Analytics Team

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Pain Points

Pain points this tool is meant to address:

- Deputy Chiefs and Chiefs are supposed to manage borough forestry operations but do not have reports that show them what metrics are important
- Hard for borough managers to pull summary data for their boroughs out of ForMS (data pulls are manual, ad-hoc, and not standard)
- Current automated reports are high level, citywide, with borough summary statistics only
- Current dashboards exist for deployment and QA but not borough-based performance and other analytics

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Goals

- Highlight the most important metrics to help managers to understand and measure forestry performance
- Identify specific trends to better understand the **who**, **what** and **where** (street or park) of the forestry workflow in their borough
- Provide In-depth borough-level metrics that summarize, analyze, contextualize and communicate the characteristics of the three stages of the forestry workflow: requests, inspections and work orders
- Identify trends to help managers and supervisors intervene to mitigate current or potential problems, including inspection and work unit productivity

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Objectives

- Meet the agency's MMR goals
- Track identified risk from source to completion
- Show street vs. park tree workflows and metrics, including by source (Amps, DIA)
- Better understand the characteristics of the work order backlog, and time and resources spent on tasks and activities
- Define and establish productivity benchmarks
- Help managers and supervisors ask, investigate and answer the **why** questions:
  - *why is so much work coming from a particular source?*
  - *why is there so much high risk work emerging from a particular type of request?*
  - *why is the yield for some request types so much higher than others?*
  - *why did we have so many duplicates this week?*
  - *why is our work completed so much lower this week than last?*
  - *Why are certain tree work orders so much older than others? etc*

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Dashboard Components

Six Sections:

1. Key Performance Indicators (KPIs)
2. Requests
3. Inspections Completed
4. Work Order Yields
5. Work Orders Completed
6. Work Orders Pending

Inspections

Work Orders

Timeframe:

- Can select for any period of time (default would be week)

Data Source:

- ForMS

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KEY PERFORMANCE INDICATORS (KPIs)

Requests	Inspections	Work Orders
	FIRST TIER WIDGETS	
	TREND CHARTS	
	SECOND TIER WIDGETS	

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Key Performance Indicators

BOROUGH: SELECT DATE: START DATE DATE: END DATE

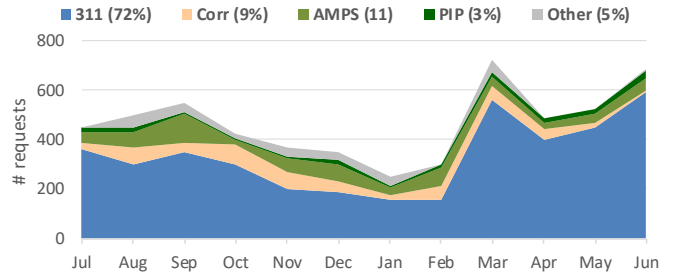
Requests

936
NEW requests this period
▼ 50 previous period

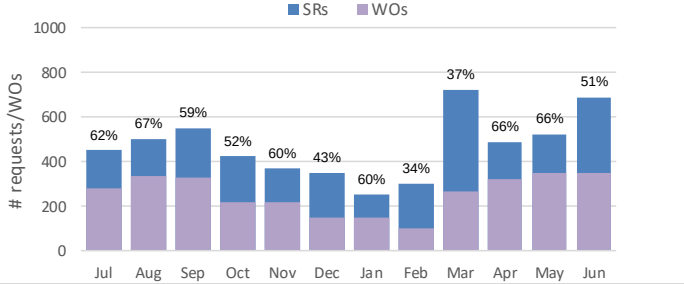
1,341
Requests REVIEWED this period
▼ 80 previous period

173 IN PARKS
2,417
Requests PENDING review
▼ 300 previous period

SRs BY SOURCE



% REQUESTS YIELDING WORK ORDERS



10 YTD
2%
Requests were DUPLICATES this period
▼ 5 previous period

50% STREET 64% PARK
54%
Requests YIELDING WOs this period*
▼ 5 previous period

123 STREET 38 PARK
117 days
AVERAGE AGE of pending
▼ 20 previous period

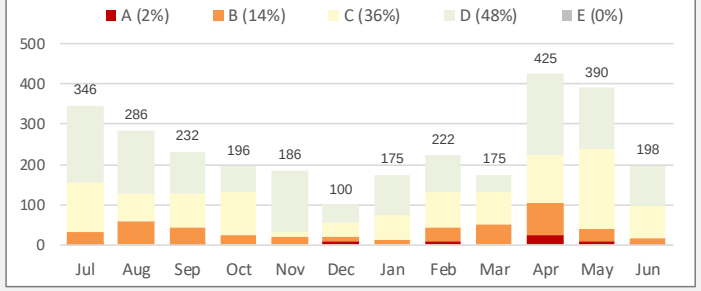
Inspections

95% MOBILE
1,317
Requests INSPECTED this period
▲ 95 previous period

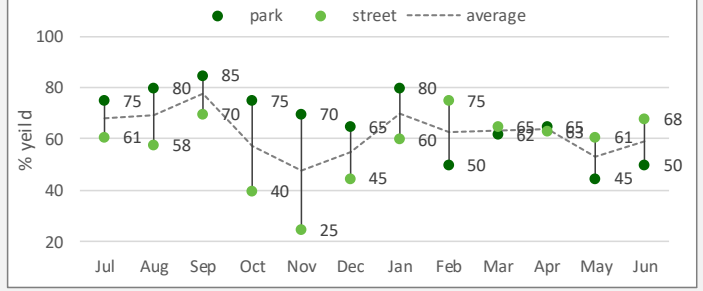
70 STREET 30 PARK
54 days
average TIME to inspect
▲ 10 previous period

8 PEOPLE
22
average INSPECTIONS per week per person
xx% goal

INSPECTION RESULTS BY RISK



% INSPECTIONS YIELDING WORK ORDERS



45% YIELD STREET 70% YIELD PARK
85%
of inspections came from SRs this period*
▼ 5 previous period

91% YIELD STREET 100% YIELD PARK
14%
of inspections came from FPUs this period
▼ 300 previous period

80% YIELD STREET 0% YIELD PARK
1%
of inspections came from REINSPECTIONS this period
▼ 20 previous period

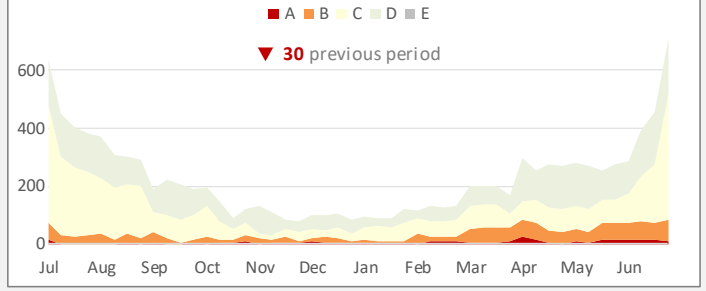
Work Orders

91 YTD
80% ON-TIME
PRIORITY A this period (4 of 5 work orders)
▼ 20% MMR goal

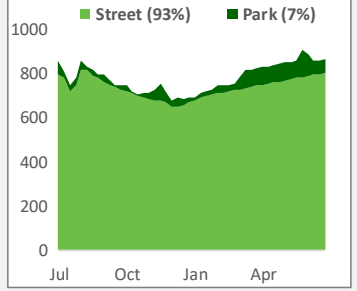
95 YTD
97% ON-TIME
PRIORITY B this period (97 of 100 work orders)
▼ 3% MMR goal

11% STREET 23% PARK
13%
of total pending work COMPLETED this period
▼ 4% previous period

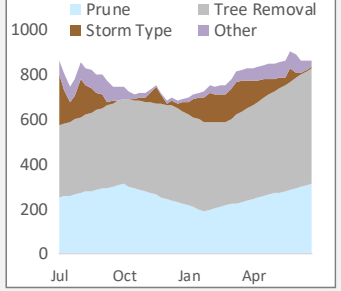
WORK ORDERS COMPLETED WEEKLY



PENDING WOs - LOCATION



PENDING WOs - TYPE



0 WOs
0 days
AVERAGE AGE of pending Priority As
1 ▼ 7-day SLA

92 WOs
20 days
AVERAGE AGE of pending Priority Bs
3 ▲ 28-day SLA

2,067 WOs
222 days
AVERAGE AGE of pending Priority Cs
130 ▲ 120-day SLA

KPIs | Requests | Inspections Completed | WO Yields | WOs Completed | WOs Pending

REQUESTS

COLUMN HEADERS

New Requests, Reviewed, Pending, Pending Age

TOTALS DATA FOR TIME PERIOD

by SR/Inspection Type

TOTAL DATA FOR TIME PERIOD

by SR Source

TOTAL DATA FOR TIME PERIOD

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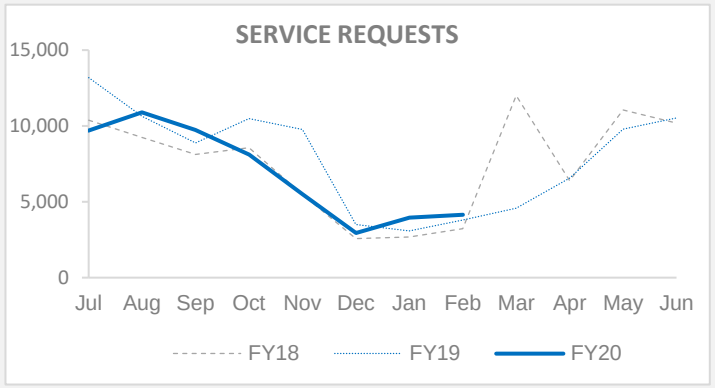
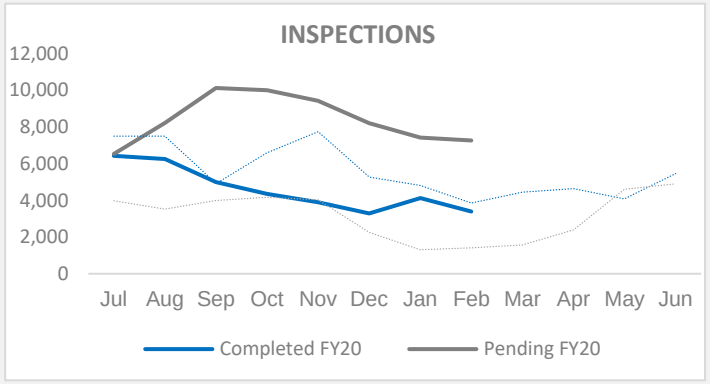
Requests

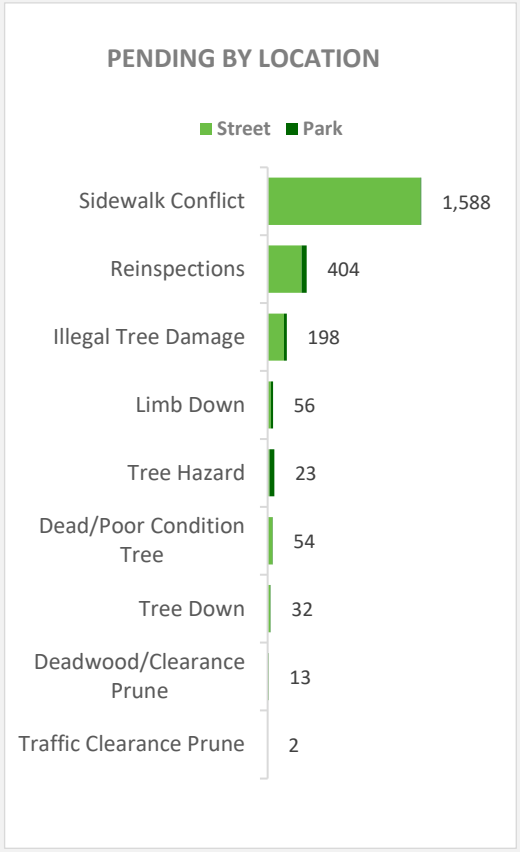
on KPI

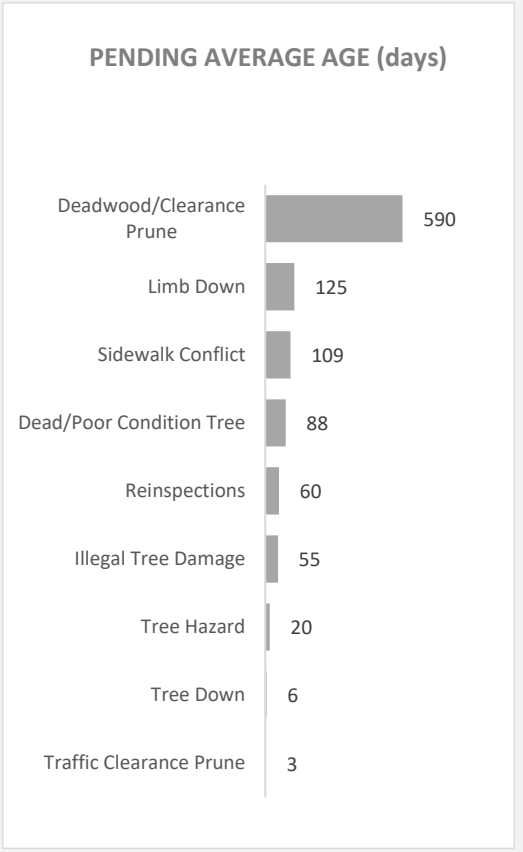
BOROUGH: SELECT DATE: START DATE DATE: END DATE	NEW REQUESTS				REVIEWED THIS PERIOD								PENDING REVIEW				PENDING AVERAGE AGE		
					DUPLICATES		INSPECTED				TOTAL REVIEWED		as of [date of report]				in days (as of date of report)		
	Public	Parks	Total	%	#	% Yield	Street	Park	Total	%	#	%	Street	Park	Total	%	Street	Park	All
Total	896	40	**936**	**100%**	24	2%	1,258	59	1,317	100%	**1,341**	**100%**	2,244	173	**2,417**	**100%**	123	38	**117**
% of Total	96%	4%	**100%**		**2%**		*96%*	*4%*	**98%**		**100%**		93%	7%	**100%**				
By SR/Inspection Type																			
Tree Hazard*	104	21	125	13%	10	5%	195	16	**211**	16%	**221**	16%	20	50	**70**	3%	15	25	**20**
Dead/Poor Condition Tree	153	6	159	17%	2	1%	345	1	**346**	26%	**348**	26%	50	4	**54**	2%	100	25	**88**
Traffic Clearance Prune	6		6	1%	1	11%	8	0	**8**	1%	**9**	1%	1	1	**2**	0%	3	0	**3**
Tree Down	206	5	211	23%	5	2%	236	4	**240**	18%	**245**	18%	28	4	**32**	1%	5	7	**6**
Limb Down	15	2	17	2%	3	21%	10	1	**11**	1%	**14**	1%	35	21	**56**	2%	150	60	**125**
Deadwood/Other Clearance Prune	111	2	113	12%		0%	81	9	**90**	7%	**90**	7%	10	3	**13**	1%	600	200	**590**
Sidewalk/Infrastructure Conflict	207		207	22%	3	2%	166	0	**166**	13%	**169**	13%	1,580	8	**1,588**	66%	109	0	**109**
Illegal Tree Damage	50	4	54	6%		0%	39	10	**49**	4%	**49**	4%	170	28	**198**	8%	55	0	**55**
Reinspections (street/park)	44		44	5%		0%	15	3	**18**	1%	**18**	1%	350	54	**404**	17%	69	25	**60**
Field Pick up (street/park)	--	--	--		--	--	163	15	**178**	14%	**178**	13%	--	--	**--**		--	--	**--**
By SR Source																			
311	750	-	750	80%	24	2%	1,125	2	1,127	86%	**1,151**	86%	1,856		**1,856**	77%	130		**130**
-Call Center	300		300		24	3%	750	2	752	57%	**776**		1,233		**1,233**	51%	140		**140**
-NYC Parks Website	300		300			0%	250		250	19%	**250**		500		**500**	21%	133		**133**
-NYC Tree Map	150		150			0%	125		125	9%	**125**		388		**388**	16%	125		**125**
Correspondence	100	5	105	84%		0%	40	-	**40**	3%	**40**	3%	220		**220**	9%	60	55	**59**
AMPS		25	25	16%		0%	9	35	**44**	3%	**44**	3%	69	100	**169**	7%		25	**25**
Parks Inspection Program		10	10	167%		0%	-	22	**22**	2%	**22**	2%	-	73	**73**	3%		9	**9**
-Priority 1		*2*	2			0%	-	*3*	**3**		**3**			30	**30**	1%		3	**3**
-Priority 2		*8*	8			0%	-	*19*	**19**		**19**			43	**43**	2%		7	**7**
Other	46		46	41%		--	84	-	**84**	6%	**84**	6%	99		**99**		70		**70**

Requests


SERVICE REQUESTS
15,000
10,000
5,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun
FY18
FY19
FY20


INSPECTIONS
12,000
10,000
8,000
6,000
4,000
2,000
0
Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun
Completed FY20
Pending FY20


PENDING BY LOCATION
Street
Park
Sidewalk Conflict 1,588
Reinspections 404
Illegal Tree Damage 198
Limb Down 56
Tree Hazard 23
Dead/Poor Condition Tree 54
Tree Down 32
Deadwood/Clearance Prune 13
Traffic Clearance Prune 2


PENDING AVERAGE AGE (days)
Deadwood/Clearance Prune 590
Limb Down 125
Sidewalk Conflict 109
Dead/Poor Condition Tree 88
Reinspections 60
Illegal Tree Damage 55
Tree Hazard 20
Tree Down 6
Traffic Clearance Prune 3

INSPECTIONS COMPLETED

COLUMN HEADERS

Location, Priority Result, Days to Inspect

TOTAL DATA FOR TIME PERIOD

by SR/Inspection Type

TOTAL DATA FOR TIME PERIOD

by SR Source

TOTAL DATA FOR TIME PERIOD

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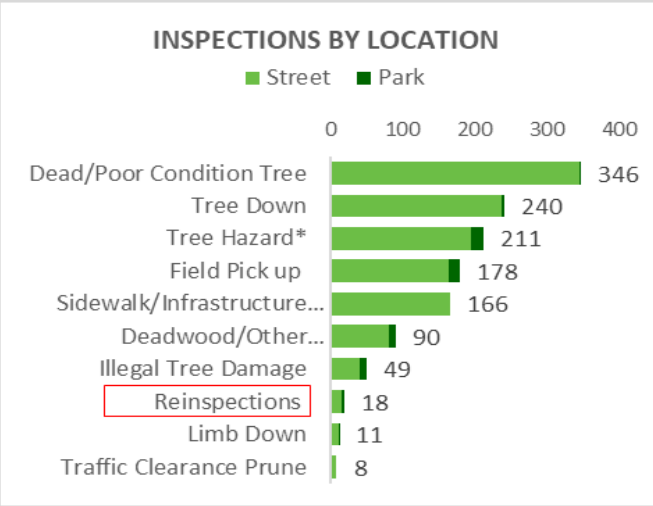
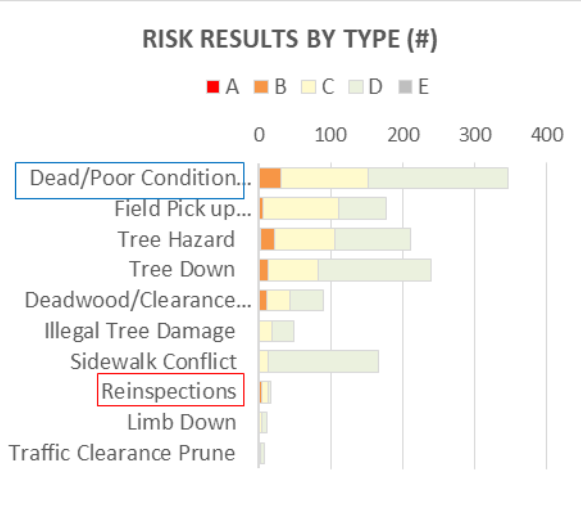
Inspections Completed

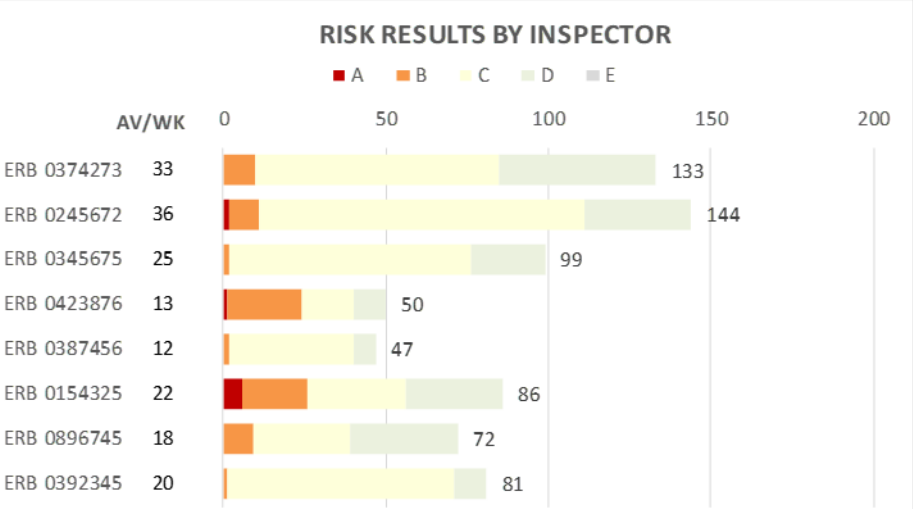
on KPI

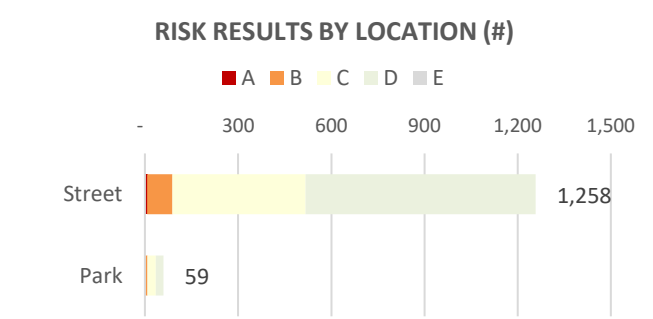
BOROUGH: SELECT DATE: START DATE DATE: END DATE	BY LOCATION				BY PRIORITY RESULT														AVERAGE DAYS TO INSPECT		
					A			B			C			D			E					
	STREET	PARK	TOTAL	%	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	STREET	PARK	ALL
Total	**1,258**	**59**	**1,317**	**100%**	**7**		**7**	**81**	**8**	**89**	**429**	**27**	**456**	**741**	**24**	**765**				**70**	**30**	**54**
% of Total	96%	4%	**100%**		*100%*	*0%*	**1%**	*91%*	*9%*	**7%**	*94%*	*6%*	**35%**	*97%*	*3%*	**58%**						
By SR/Inspection Type																						
Tree Hazard*	195	16	**211**	16%	3		3	17	2	19	76	8	84	99	6	105				11	7	**9**
Dead/Poor Condition Tree	345	1	**346**	26%	1		1	29	1	30	122		122	193		193				35	7	**30**
Traffic Clearance Prune	8	0	**8**	1%	3		3							5		5				3	n/a	**3**
Tree Down	236	4	**240**	18%				14		14	68	1	69	154	3	157				2	2	**2**
Limb Down	10	1	**11**	1%				2		2	2	1	3	6		6				62	10	**60**
Deadwood/Other Clearance Prune**	81	9	**90**	7%				9	2	11	27	6	33	45	1	46				52	7	**50**
Sidewalk/Infrastructure Conflict	166	0	**166**	13%							14		14	152		152				200		**200**
Illegal Tree Damage	39	10	**49**	4%				1		1	14	3	17	24	7	31				90	38	**90**
Reinspections	15	3	**18**	1%				5		5	6	3	9	4		4				47	27	**45**
Field Pick Up	163	15	**178**	14%				4	3	7	100	5	105	59	7	66				1	1	**1**
By SR Source																						
311 (all)	947	2	949	72%	3		3	58		58	413	0	413	473	2	475				90	40	**80**
Correspondence	40	-	40	3%	1		1	10		10	7		7	22		22				15		**15**
AMPS	9	17	26	2%					6	6	9	3	12		8	8				45	45	
Parks Inspection Program	-	22	22	2%					2	2		19	19		1	1					4	**4**
-Priority 1	-	*3*	*3*	*n/a*					*2*	*2*		*1*	*1*		*0*	*0*					*2*	***2***
-Priority 2	-	*19*	*19*	*n/a*								*5*	*5*		*14*	*14*					*7*	***7***
Other	84	-	84	6%				3		3			0	81		81				60		
Reinspections	15	3	18	1%						0		3	3	15		15				12	12	**12**
None (Field Pick Up)	163	15	178	14%	3			10		10		2	2	150	13	163				1	1	**1**

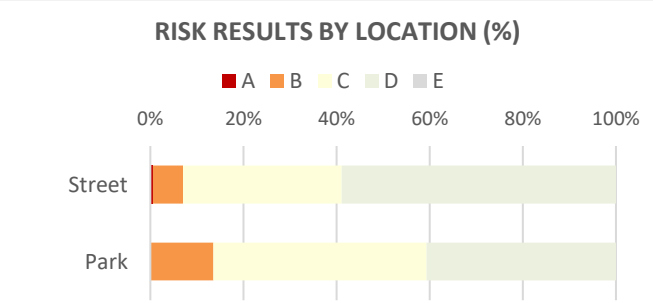
Inspections Completed

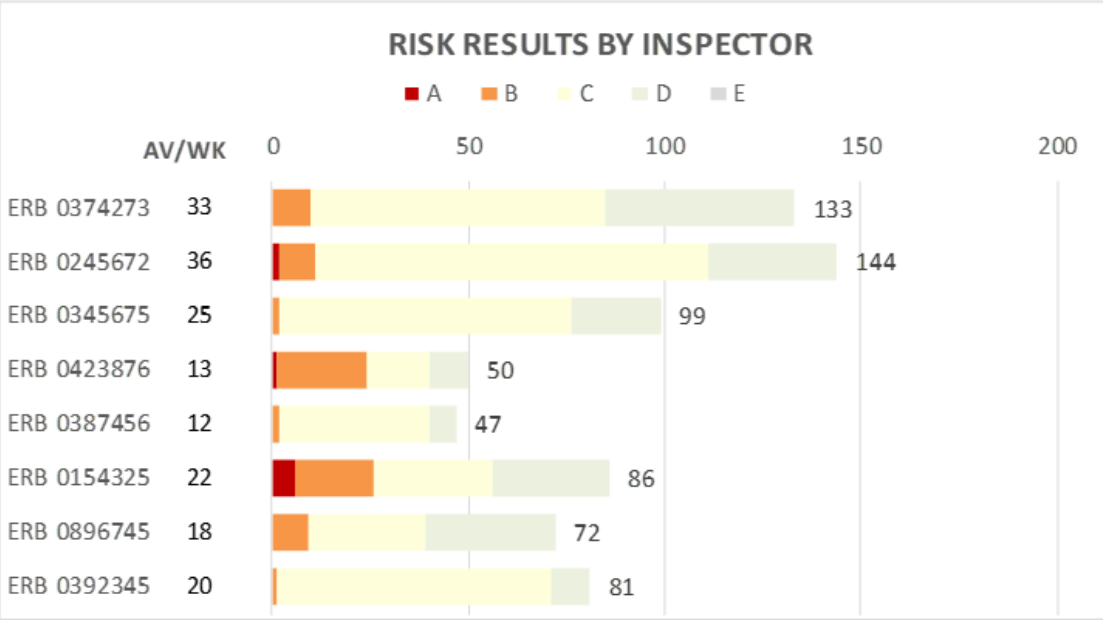


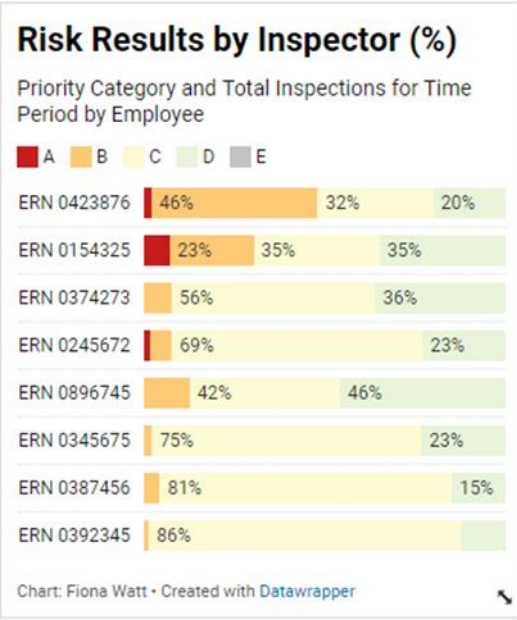












WORK ORDER YIELDS

COLUMN HEADERS

Inspections, WO Decision, WO Location, WO Type

TOTAL DATA FOR TIME PERIOD

by SR/Inspection Type

TOTAL DATA FOR TIME PERIOD

by Priority Category

TOTAL DATA FOR TIME PERIOD

by SR Source

TOTAL DATA FOR TIME PERIOD

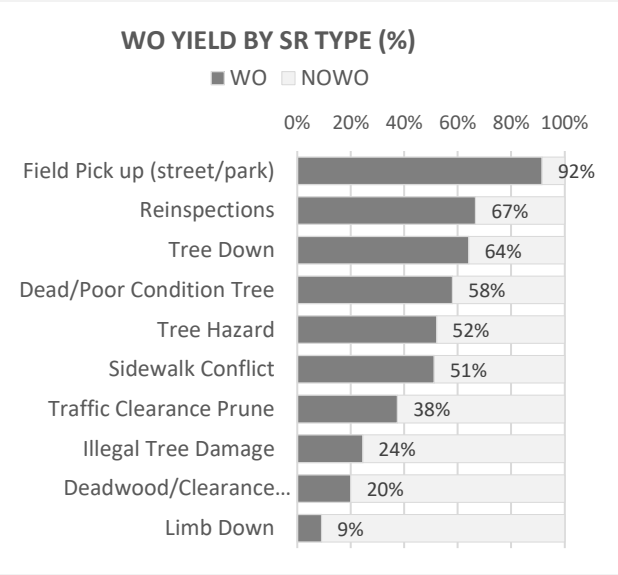
NYC Pa

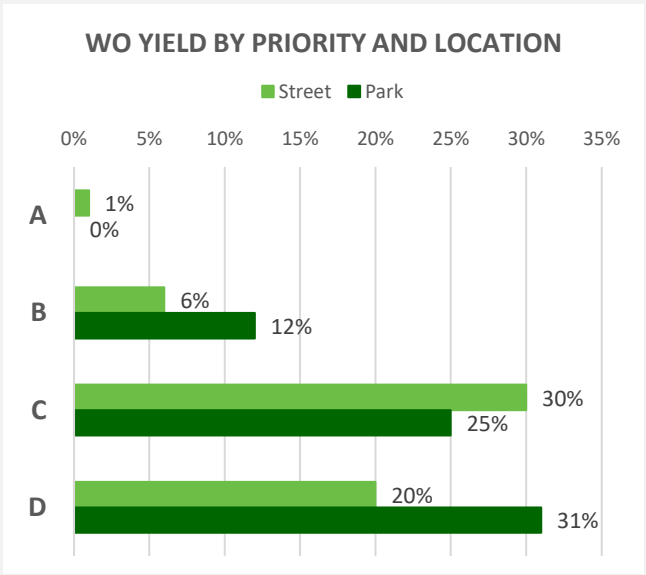
Work Order Yields

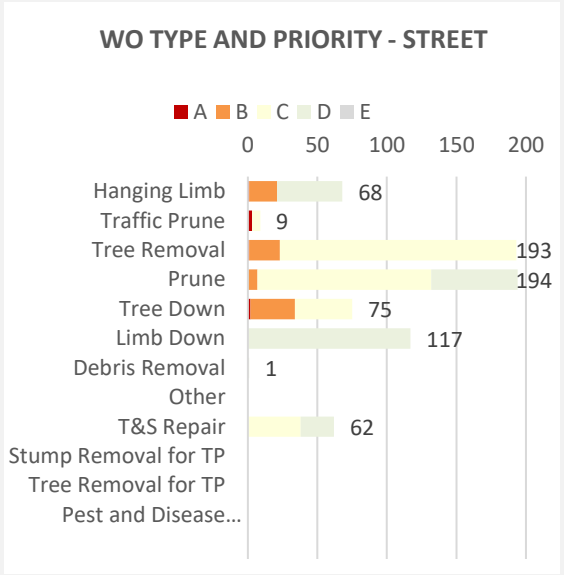
on KPI

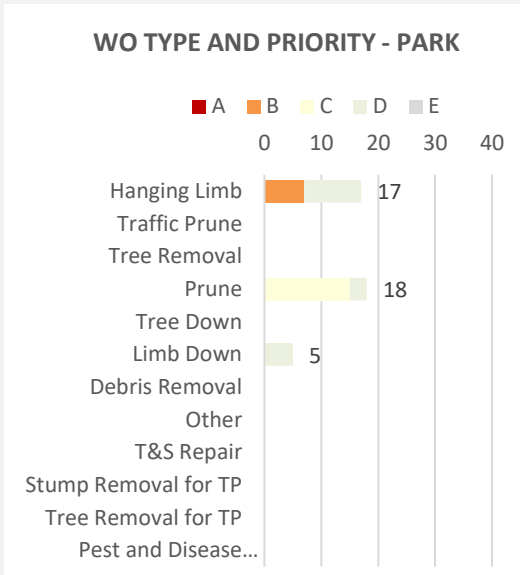
BOROUGH: SELECT DATE: START DATE DATE: END DATE	TOTAL INSPECTIONS		WORK ORDER DECISION				WORK ORDER LOCATION				WORK ORDER TYPE												
			No WO		Yes WO		STREET		PARK		Hanging Limb	Traffic Prune	Tree Removal	Prune	Tree Down	Limb Down	Debris Removal	Other	T&S Repair	Stump Removal for TP	Tree Removal for TP	Pest and Disease Treatment	% of Category
	#	%	#	% Yield	#	% Yield	#	% Yield	#	% Yield													
Total	**1,317**	**100%**	**558**	**42%**	**759**	**58%**	**719**	**57%**	**40**	**68%**	**85**	**9**	**193**	**212**	**75**	**122**	**1**	**0**	**62**	**0**	**0**	**0**	**759**
% of Total	**100%**		**42%**		**58%**		**95%**		**5%**		**11%**	**1%**	**25%**	**28%**	**10%**	**16%**	**0%**	**0%**	**8%**	**0%**	**0%**	**0%**	**100%**
By SR/Inspection Type																							
Tree Hazard*	211	16%	101	48%	110	52%	100	51%	10	63%	50		30	30									14%
Dead/Poor Condition Tree	346	26%	145	42%	201	58%	200	58%	1	100%			99	102									26%
Traffic Clearance Prune	8	1%	5	63%	3	38%	3	38%	0	n/a		3											0%
Tree Down	240	18%	86	36%	154	64%	150	64%	4	100%					35	119							20%
Limb Down	11	1%	10	91%	1	9%	1	10%	0	0%							1						0%
Deadwood/Other Clearance Prune**	90	7%	72	80%	18	20%	10	12%	8	89%	5	1	2	10									2%
Sidewalk/Infrastructure Conflict	166	13%	81	49%	85	51%	85	51%	0	n/a			3	20					62				11%
Illegal Tree Damage	49	4%	37	76%	12	24%	10	26%	2	20%		5	3	4									2%
Reinspections	18	1%	6	33%	12	67%	12	80%	0	0%			6	6									2%
Field Pick up	178	14%	15	8%	163	92%	148	91%	15	100%	30		50	40	40	3							21%
By Priority Category																							
Priority A	7	1%	0	0%	7	100%	7	**1%**	0	**0%**	1	3	2	0	1								1%
Priority B	89	7%	1	1%	88	99%	81	**6%**	7	**12%**	5		39	20	24								12%
Priority C	456	35%	61	13%	395	87%	380	**30%**	15	**25%**	39	6	101	152	25	69			3				52%
Priority D	765	58%	496	65%	269	35%	251	**20%**	18	**31%**	40		51	40	25	53	1		59				35%
Level 1	#N/A	#N/A	0	#N/A	0	#N/A	0	**0%**	0	**0%**	0												0%
By SR Source																							
311 (all)	949	72%	479	50%	470	50%	470		0		80	9	110	100	70	60	1		40				62%
Correspondence	40	3%	20	50%	20	50%	20		0				3	12	5								3%
AMPS	26	2%	10	38%	16	62%			16							16							2%
Parks Inspection Program	22	2%	10	45%	12	55%			12		5					6			1				2%
-Priority 1	*3*			0%		0%																	0%
-Priority 2	*19*			0%		0%																	0%
Other	84	6%	37	44%	47	56%	47									30			17				6%
Reinspections	18	1%	2	11%	16	89%	15		1				16										2%
None (Field Pick Up)	178	14%	0	0%	178	100%	167		11				64	100		10			4				23%

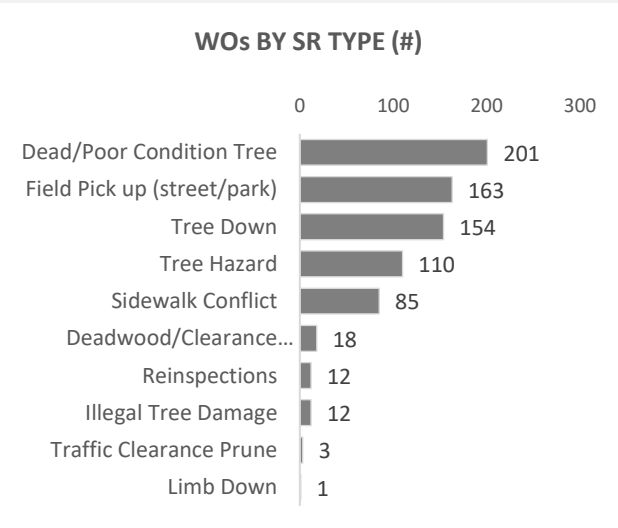
Work Order Yields











WORK ORDERS COMPLETED

COLUMN HEADERS
Location, Priority, Days to Complete

TOTAL DATA FOR TIME PERIOD

by Work Order Type

TOTAL DATA FOR TIME PERIOD

by SR Source

TOTAL DATA FOR TIME PERIOD

PERFORMANCE

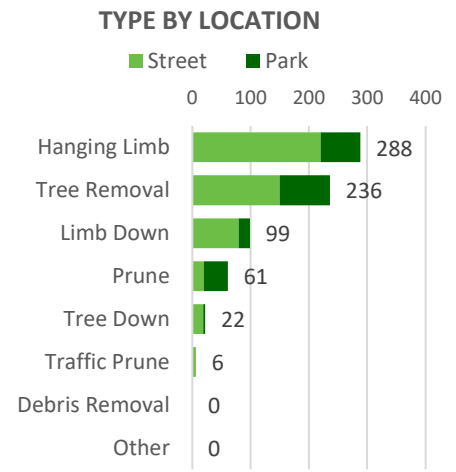
NYC Pa

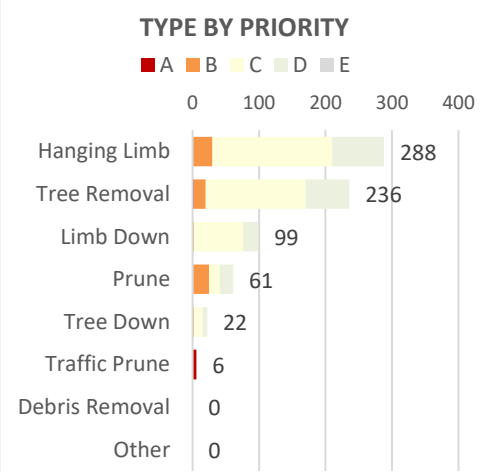
Work Orders Completed

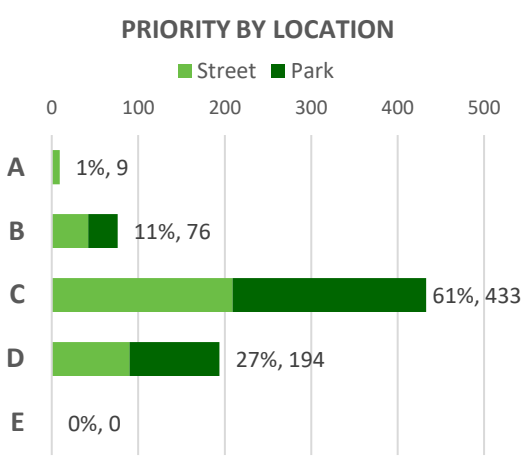
on KPI

BOROUGH: SELECT DATE: START DATE DATE: END DATE	BY LOCATION				BY PRIORITY														AVG DAYS TO COMPLETE		
					A			B			C			D			E					
	Street	Park	Total	%	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	All
Total	495	217	712	100%	9	0	9	42	34	76	209	224	433	90	104	194	0	0	0	58	68	59
% of Total	70%	30%	100%		*100%*	*0*	1%	*55%*	*45%*	11%	*48%*	*52%*	61%	*46%*	*54%*	27%						
By Work Order Type																						
Hanging Limb	220	68	**288**	40%				15	15	30	70	110	180	40	38	78				25	32	**26**
Traffic Prune	6	0	**6**	1%	6		6													6		**6**
Tree Removal	150	86	**236**	33%	2		2	8	10	18	80	70	150	25	41	66				60	75	**63**
Tree Down	19	3	**22**	3%				2		2	5	8	13	4	3	7				5	7	**6**
Limb Down*	80	19	**99**	14%				2		2	44	30	74	11	12	23				40	30	**42**
Prune	20	41	**61**	9%	1		1	15	9	24	10	6	16	10	10	20				100	120	**110**
Debris Removal	0	0	**0**	0%																47	35	**45**
Other**	0	0	**0**	0%																		
By SR Source																						
311 (all)	380		**380**	53%	4		4	12		12	131	100	231	82	51	133				130		**130**
Correspondence	25		**25**	4%				1		1	16		16	8		8				90		**90**
AMPS		156	**156**	22%					30	30		86	86		40	40					100	**100**
Parks Inspection Program		18	**18**	3%					4	4		1	1		13	13					35	**35**
-Priority 1		4	**4**						1	1			0		3	3					7	**7**
-Priority 2		14	**14**						3	3		1	1		10	10					48	**48**
Other			**0**	0%						0			0			0				60	50	**58**
Reinspections	40		**40**	6%	1		1	19		19		20	20			0				35	35	**35**
None (Field Pick Up)	50	43	**93**	13%	4		4	10		10	62	17	79			0				42	36	**41**
PERFORMANCE					7-DAY SLA			28-DAY SLA			120-DAY SLA			365-DAY SLA			NO SLA					
% On-time	45%	58%	47%		80%		80%	98%	96%	97%	75%	55%	65%	92%	95%	94%						
Average Days to Complete	58	68	59		12		12	30	31	30	150	130	145	380	120	300						
% of total pending work	11%	23%	13%		n/a	n/a	n/a	54%	all	83%	12%	62%	21%	5%	7%	6%						

Work Orders Completed







AVERAGE TIME TO COMPLETE (min.)

WO TYPE	STREET		PARK		ALL	
	This Period	YTD	This Period	YTD	This Period	YTD
Hanging Limb	45	**41**	90	**80**	60	**50**
Traffic Prune	50	**48**	n/a	n/a	50	**48**
Tree Removal	120	**100**	70	**80**	110	**110**
Tree Down	180	**162**	120	**125**	150	**158**
Limb Down*	15	**18**	30	**25**	18	**20**
Prune	90	**100**	100	**90**	95	**95**
Debris Removal	30	**19**	30	**25**	30	**22**
Other**						

WORK ORDERS PENDING

COLUMN HEADERS
Location, Priority, Pending Age

TOTAL DATA FOR TIME PERIOD

by Work Order Type

TOTAL DATA FOR TIME PERIOD

by SR Source

TOTAL DATA FOR TIME PERIOD

Pending Age by Priority

NYC Pa

Work Orders Pending

[as of date]

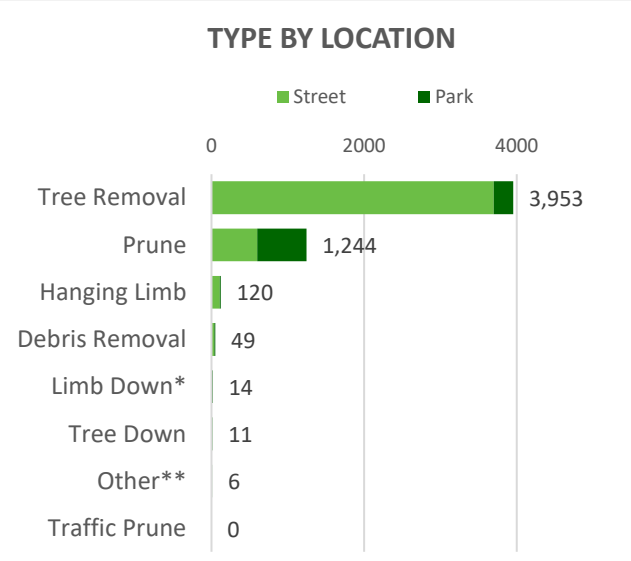
on KPI

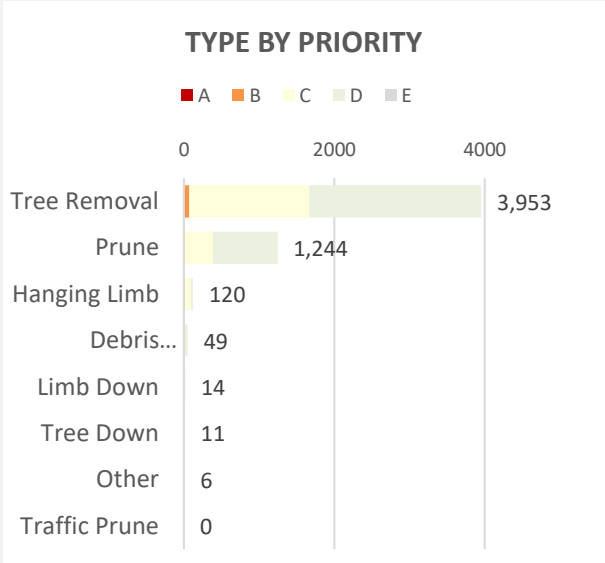
BOROUGH: SELECT DATE: START DATE DATE: END DATE	BY LOCATION				BY PRIORITY														AVERAGE AGE		
					A			B			C			D			E					
	Street	Park	Total	%	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	Total	Street	Park	All
Total	4,466	931	5,397	100%	-	-	-	78	14	92	1,707	360	2,067	1,732	1,506	3,238	-	-	-	58	68	54
% of Total	83%	17%	100%		--	--	0%	*85%*	*15%*	2%	*83%*	*17%*	38%	*53%*	*47%*	60%			0%			
Work Order Type																						
Hanging Limb	110	10	**120**	2%	-	-	-	8	2	10	50	30	80	15	15	30			0	25	32	**26**
Traffic Prune	-	-	**-**	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	6		**6**
Tree Removal	3,700	253	**3,953**	73%	-	-	-	63	10	73	1,293	300	1,593	1,582	705	2,287			0	60	75	**63**
Tree Down	9	2	**11**	0%	-	-	-	2	-	2	9	-	9	-	-	-			0	5	7	**6**
Limb Down*	8	6	**14**	0%	-	-	-			-	5	4	9	3	2	5			0	40	30	**42**
Prune	600	644	**1,244**	23%	-	-	-	5	2	7	350	26	376	93	768	861			0	100	120	**110**
Debris Removal	39	10	**49**	1%	-	-	-			-			-	39	10	49			0			
Other**	-	6	**6**	0%	-	-	-			-			-		6	6			0			
By SR Source																						
311 (all)	3,251		**3,251**	60%				15		15	173		173	1,651	1,412	3,063			0	250		**250**
Correspondence	51		**51**	1%						0	29		29	22		22			0	60		**60**
AMPS		200	**200**	4%					4	4		112	112		84	84			0		120	**120**
Parks Inspection Program		30	**30**	1%					10	10		10	10		10	10			0		30	**30**
-Priority 1		9	**9**						1	1		5	5		3	3			0		7	**7**
-Priority 2		21	**21**						1	1		10	10		10	10			0		29	**29**
Other		25	**25**	0%				3		3	15		15	7		7			0		60	**60**
Reinspections	210	300	**510**	9%				20		20	400	38	438	52		52			0	45	45	**45**
None (Field Pick Up)	954	376	**1,330**	25%				40		40	1,090	200	1,290			-			0	70	30	**60**
AVERAGE AGE	58	68	54				0	22	12	20	240	210	222	180	90	130						

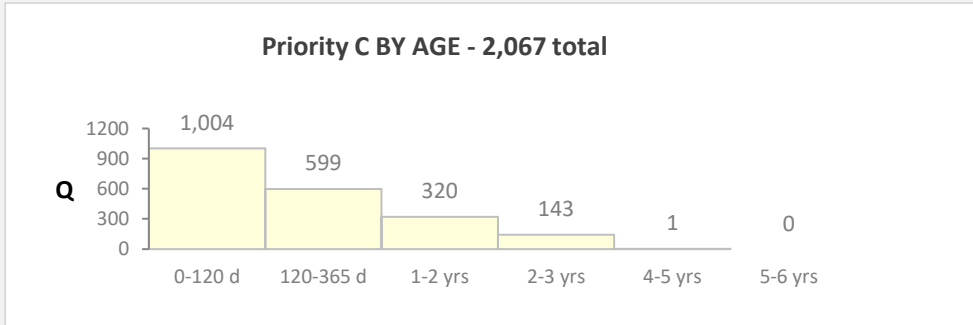
KPIs | Requests | Inspections Completed | WO Yields | WOs Completed | WOs Pending

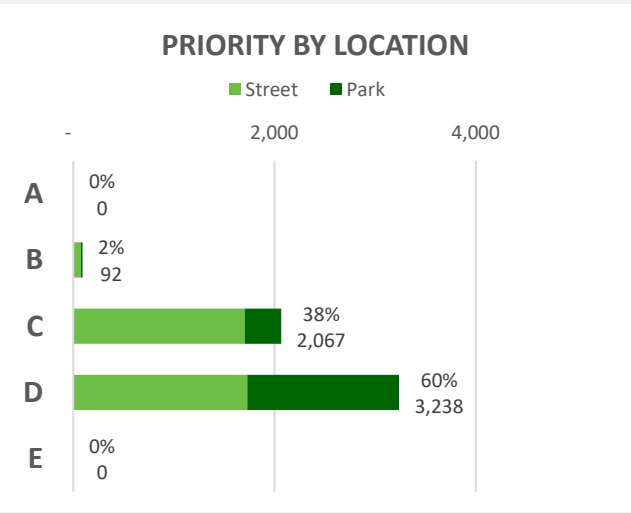
Work Orders Pending

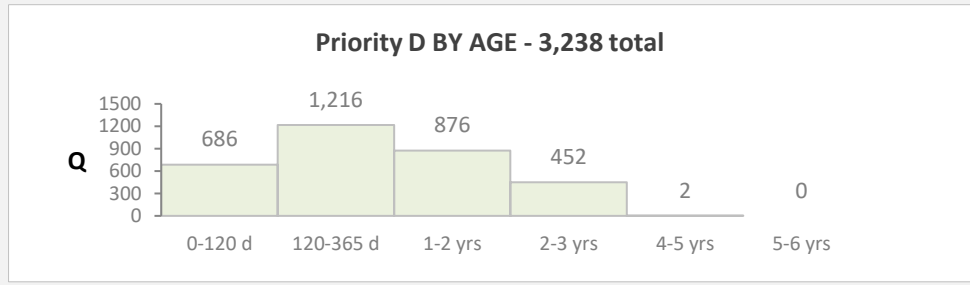
[as of date]











Future Vision

Integrate Additional Data Sources:

- Non-forestry work (flags, holiday trees, lights, materials or equipment handling and delivery, etc) – *this may be possible with standardized use of a the 'commitment' field in ForMS*
- Crew sheet data (for mobilization timeframes)
- Vehicle use data summaries
- OT – by week, type of activity, location, crew

NYC Parks