



# City of West Allis

## Business Case Analysis for Facilities Replacement Department of Public Works

December 2018

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FOR THE  
LIFE OF  
YOUR  
BUILDING

# Executive Summary – Business Case Analysis

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## 1. Purpose

In response to a request from the City of West Allis that McKinstry provide an action plan for the replacement of the City's Public Works Facility (reference Legislation Text File # R-2017-0448) the team that recently completed the citywide Facility Condition Assessment conducted additional analysis to provide the attached consulting recommendation. The primary purpose of this analysis is to enable the City of West Allis to chart the best path forward, taking into account budget estimates for various options, the current and future needs of Public Works employees, known space available, and the input of City stakeholders. While this Business Case Analysis provides detailed assessment and cost projections for multiple, potential action plans, it should not be used in place of schematic design, design development, or the formal construction administration process. Rather, the recommendations given should serve as the foundation for these next steps, enabling the City to decide with confidence what will best serve the needs of its constituents.

## 2. Methodology

McKinstry's Business Case Analysis (BCA) process involves four critical phases, each contributing to the comprehensive accomplishment of the City's goals for this Action Plan.

1. **Establish a Baseline.** Employing the findings of the citywide Facility Condition Assessment (FCA), the McKinstry project team established a baseline cost of continuing to maintain and replace components of the existing Public Works facilities. This baseline serves as a "control" against which all other generated options can be compared.
2. **Collect Data.** To enhance the knowledge and familiarity with Public Works facilities gained during the FCA, the project team conducted the following information gathering processes to establish high-level requirements of modern public works facilities:
  - a) A formal charrette ("focus group") with Common Council members, department heads, Division Superintendents, and other City stakeholders
  - b) Two additional rounds of interviews with Division Superintendents
  - c) Review of similar building and consulting projects completed by McKinstry and other top-tier companies
3. **Generate Options.** Using the established baseline, as well as information gathered during the previous two BCA phases, the project team creates feasible alternatives that would meet the needs of the City's Department of Public Works. These options incorporate several components of long-term financial analysis, enabling a realistic and objective comparison of otherwise qualitative characteristics.
4. **Present Findings.** This Executive Summary, together with the PowerPoint file and formal presentation, constitute the fourth step of the BCA. The formal presentation will illuminate in greater detail the methods and processes of analyzing and determining a recommended course of action, as well as providing an opportunity to answer any questions.

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## 3. Production

McKinstry created a multi-disciplinary team to best respond to the needs of the City of West Allis for this BCA, including our Director of Design Services, whose architectural expertise spans more than 40 years and over 600 projects. Team members who contributed to the collection and analysis of data, as well as report preparation, included:

*Ryan Dickerson, PMP, LEED AP*      *McKinstry*

*Isaac Fones*      *McKinstry*

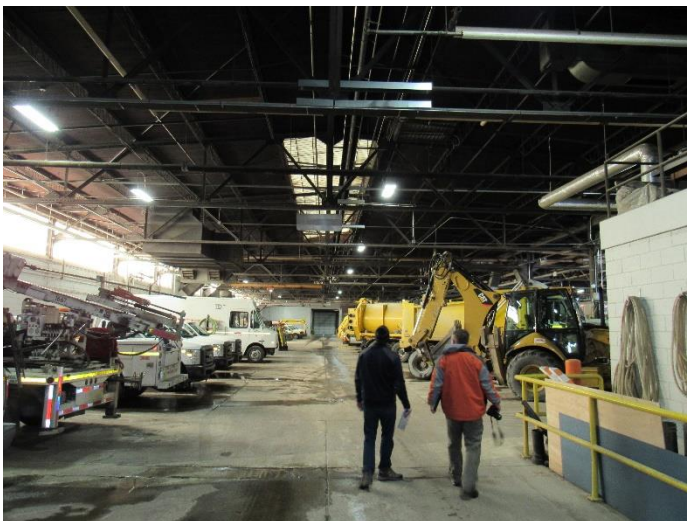
*Peter Goodall, AIA, LEED AP*      *McKinstry*

*John Lang, AIA, LEED AP*      *McKinstry*

## 4. Significant Findings on Current Condition

While the City's Department of Public Works maintains an excellent maintenance and service record, and responds very quickly to the needs of City residents, the growing requirements placed on the Department and its employees are outpacing what the current Public Works infrastructure can support. Through the course of this BCA, the project team identified the following significant conditions that are currently beginning to degrade, or will soon degrade, the Department's ability to provide the same excellent service the citizens of West Allis are accustomed to receiving:

- a) Inadequate space for indoor vehicle circulation and maintenance operations, which delays equipment repair, worsens indoor air quality (IAQ), and forces valuable equipment to remain outside during harsh weather.

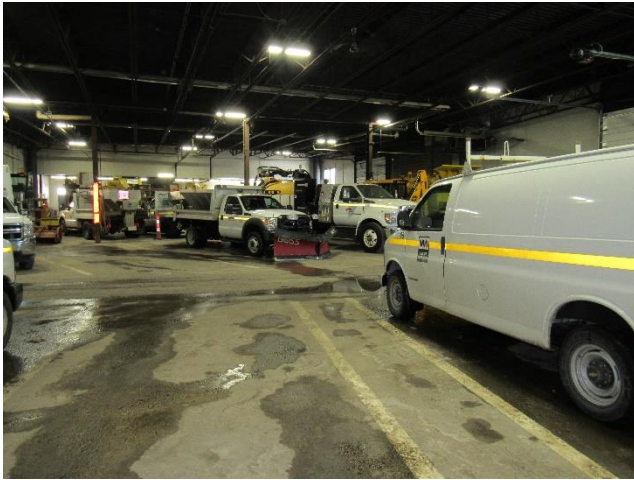


The pictures above show very narrow vehicle berths as well as inadequate equipment storage.

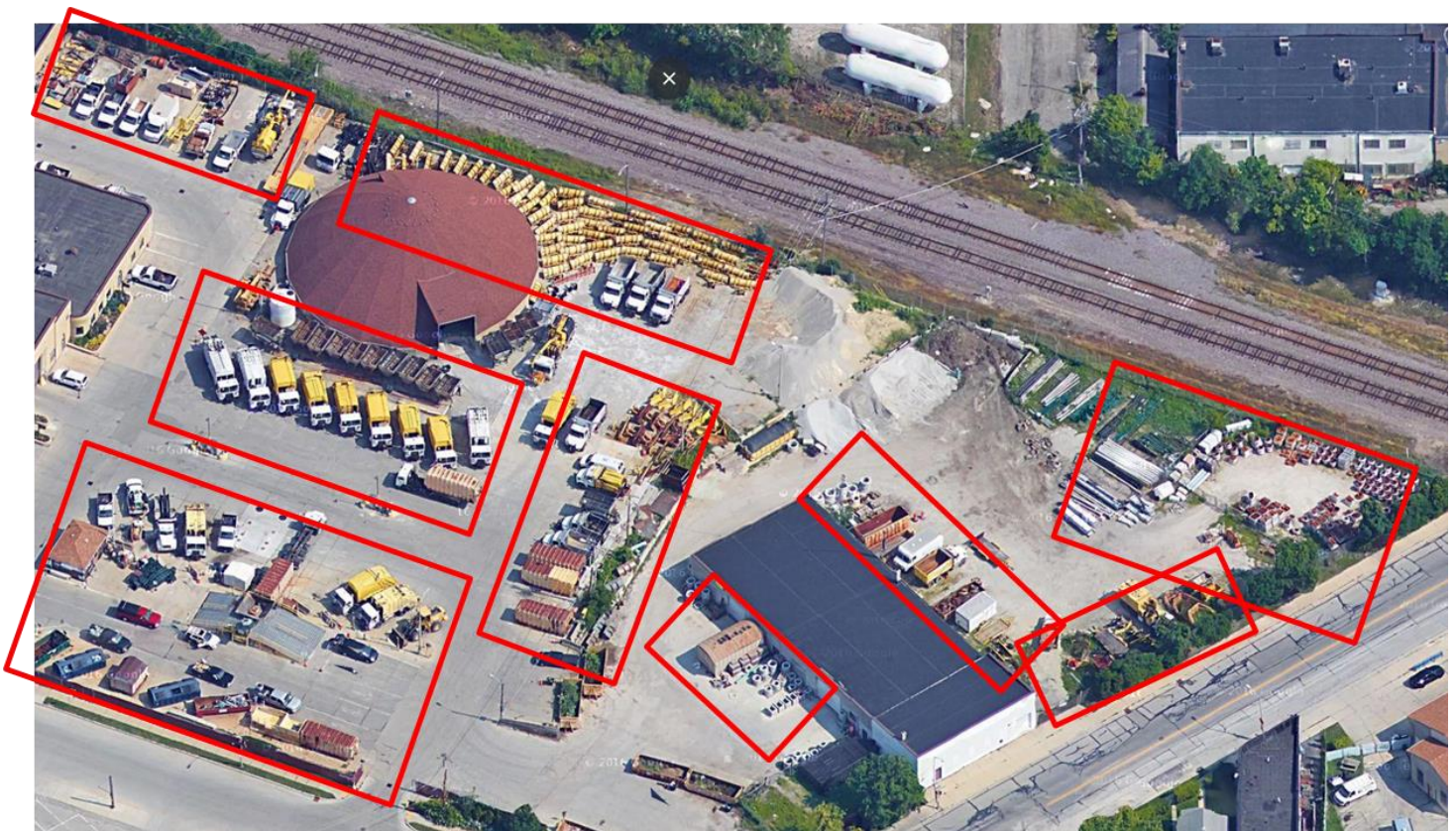


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The pictures below further illustrate little or no available turning radius inside the main garage.



The picture below illustrates the overall density of exterior storage, leaving difficult access and minimal maneuvering space.





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- b) Inadequate space for employee training, break rooms, locker rooms, and restrooms, which degrades morale and introduces avoidable lags in service delivery.

The pictures below show cramped and old break room and gear storage spaces.



The pictures below show outdated and small restroom facilities.



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- c) Inefficient building performance due to aging infrastructure and deferred maintenance, which increases wasted energy and utility expenses, and causes premature deterioration of assets.



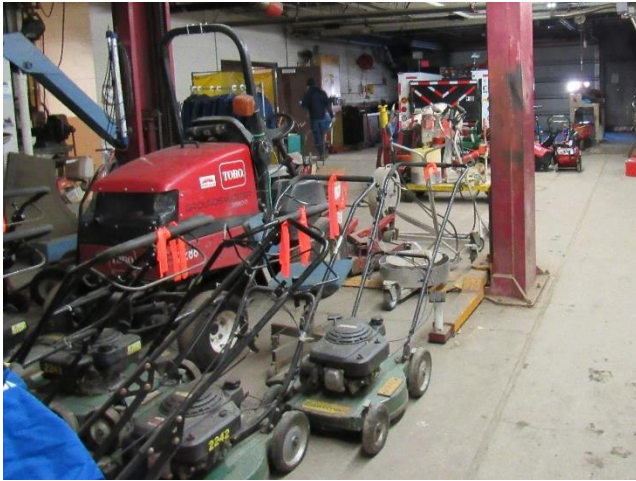
All four of these pictures show equipment in well beyond its service life.





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- d) Poor working environment (not related to management or “climate”) contributes to lower employee retention and increased difficulty in attracting and hiring high-quality, committed technicians.

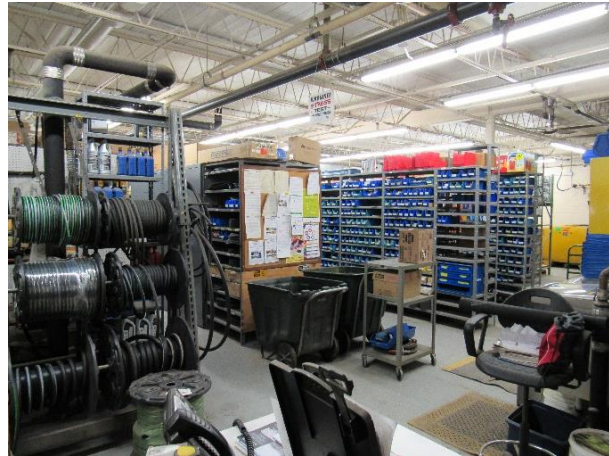


All four of these pictures show cramped, outdated, and sub-par working conditions.



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- e) The current inventory system is inefficient, which costs the City time and money. The photos below show four different inventory stocks in four different locations.



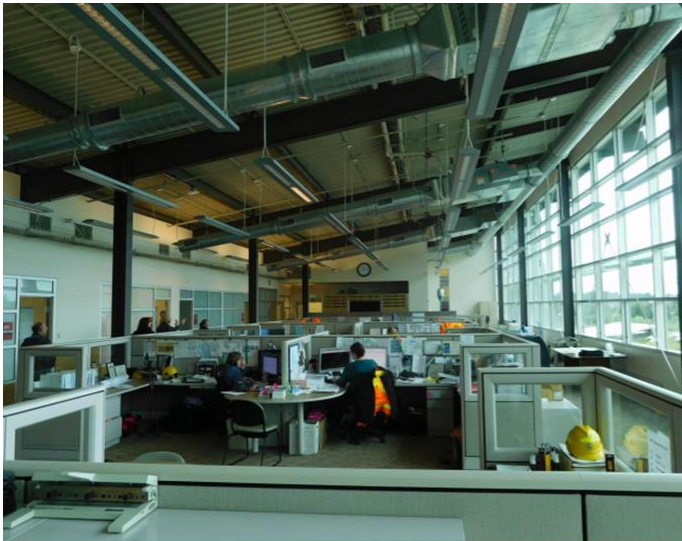


# Executive Summary – Business Case Analysis

## 5. Best Practices

Based on dozens of cities in Wisconsin and across the United States that McKinstry has helped with building design, mechanical system optimization, and various energy efficiency measures, the project team believes the following Best Practices – if implemented – would significantly improve operational efficiency for the City of West Allis, and would put the Department of Public Works on track to sustain and enhance their excellent service delivery for years to come:

- a) Purpose-designed interior and exterior departmental space layouts, which encourage collaboration (where relevant) and reduce down-time.
- b) Co-located office and crew spaces in multi-story buildings can enhance communication, speed dispatch, and avoid the need for additional land purchase.
- c) Modern, larger crew spaces and multi-use training/meeting spaces improve the work environment and enable safer, cleaner operations.
- d) Centralized warehousing with digital inventory management systems save unnecessary down-time and allow more efficient stocking operations.
- e) Indoor heated fleet parking and storage dramatically increase equipment lifespan and reduce maintenance and replacement costs.



Co-located offices and crew work spaces



Multi-story buildings

# Executive Summary – Business Case Analysis

## 6. Overview of Options

In addition to the baseline scenario mentioned in Paragraph 2 (Methodology), the project team generated three other options that could help the City of West Allis gain significant operational efficiency and provide a safer, cleaner work environment for its staff. The budgetary values listed are estimates only, and are expressed in terms of Total Cost of Ownership over a 30-year term, which accounts for traditional costs (e.g., up-front construction costs) as well as benefits (e.g., cost avoidance and time savings expressed in dollars). Dollar amounts shown below are budgetary estimates and have been rounded to the nearest \$100,000.

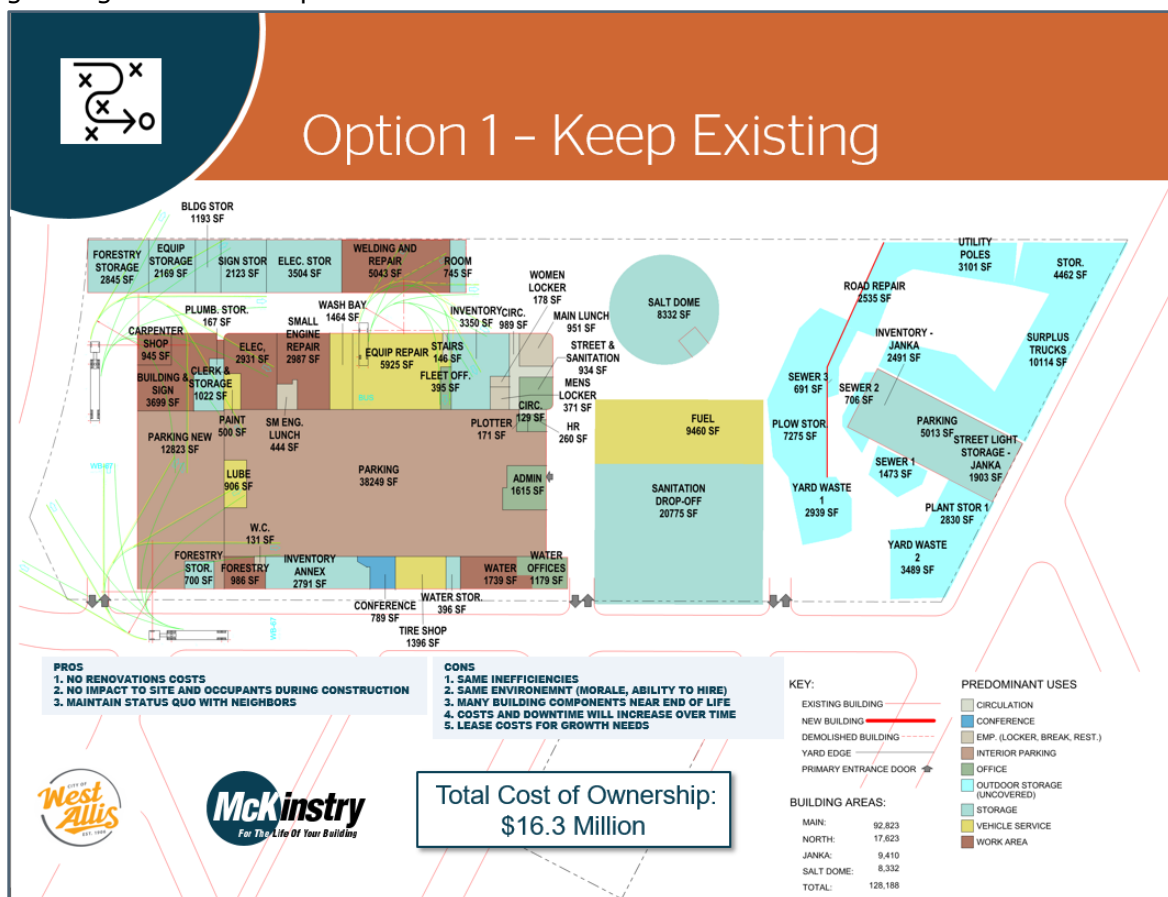
### Option 1: Keep existing Public Works facilities

Total costs: \$16.3 million

Total benefits: \$0

Total Cost of Ownership: \$16.3 million

Notes: This option assumes the need for leased additional space to keep up with the growing demands for public works services.





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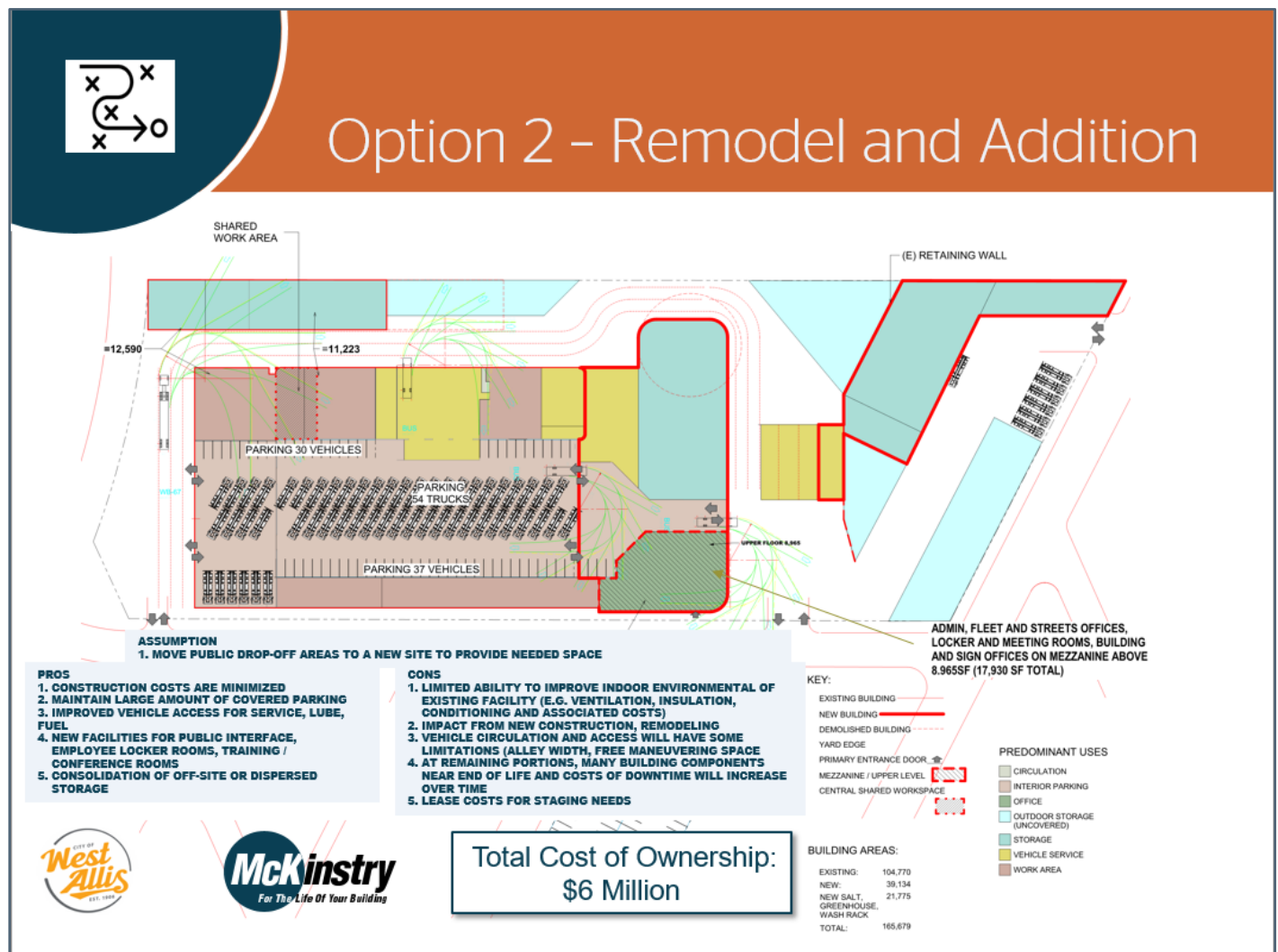
## Option 2: Remodel and addition on existing site

Total costs: \$30.8 million

Total benefits: \$24.8 million

Total Cost of Ownership: \$6 million

Notes: This option assumes the need for limited scope, short-term, leased space to accommodate operational displacement during construction activities.



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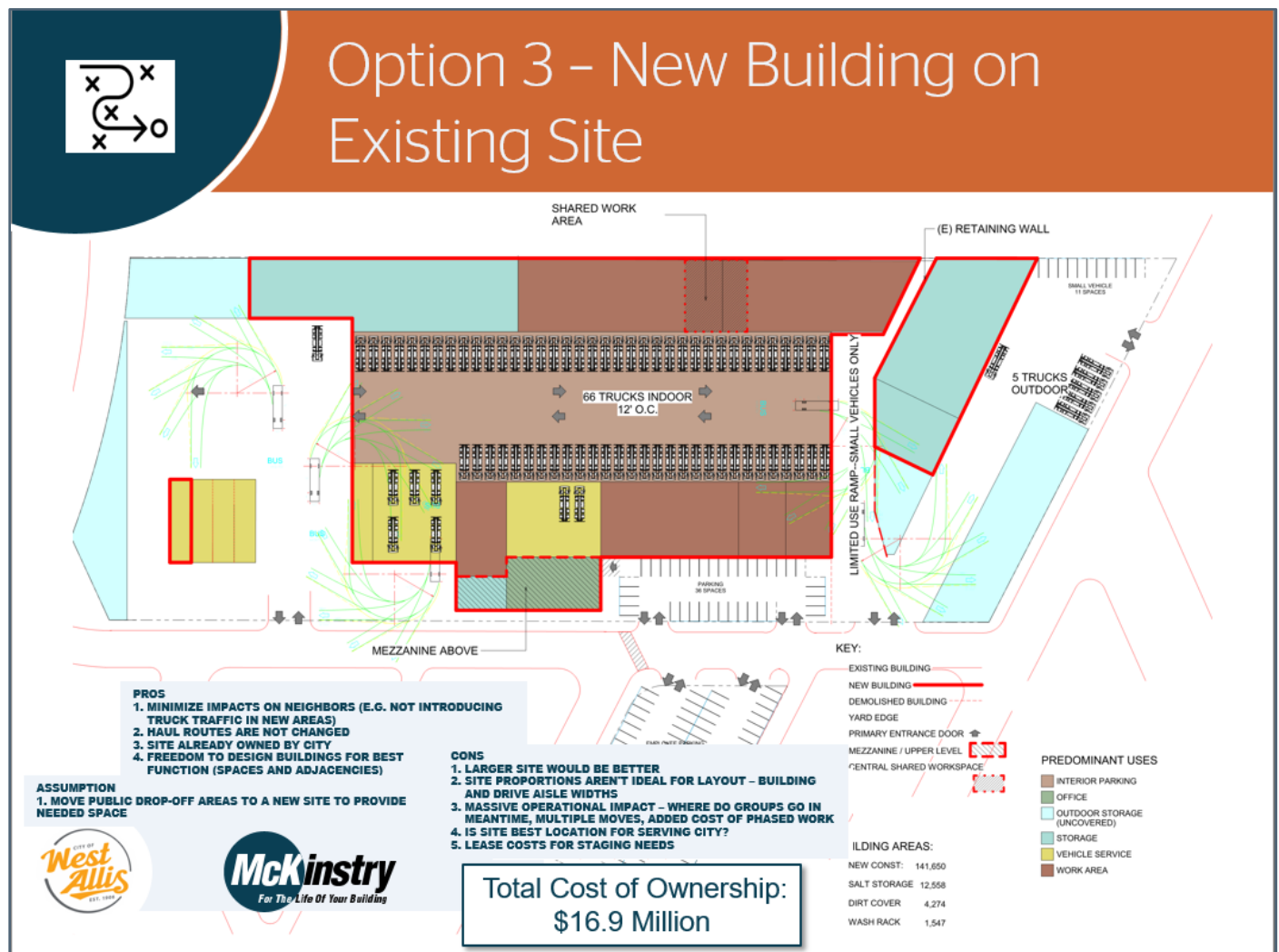
## Option 3: Build new on existing site

Total costs: \$44.5 million

Total benefits: \$27.6 million

Total Cost of Ownership: \$16.9 million

Notes: This option assumes the need for larger scope, phased-term, leased space to accommodate for operational displacement during construction activities.





# Executive Summary – Business Case Analysis

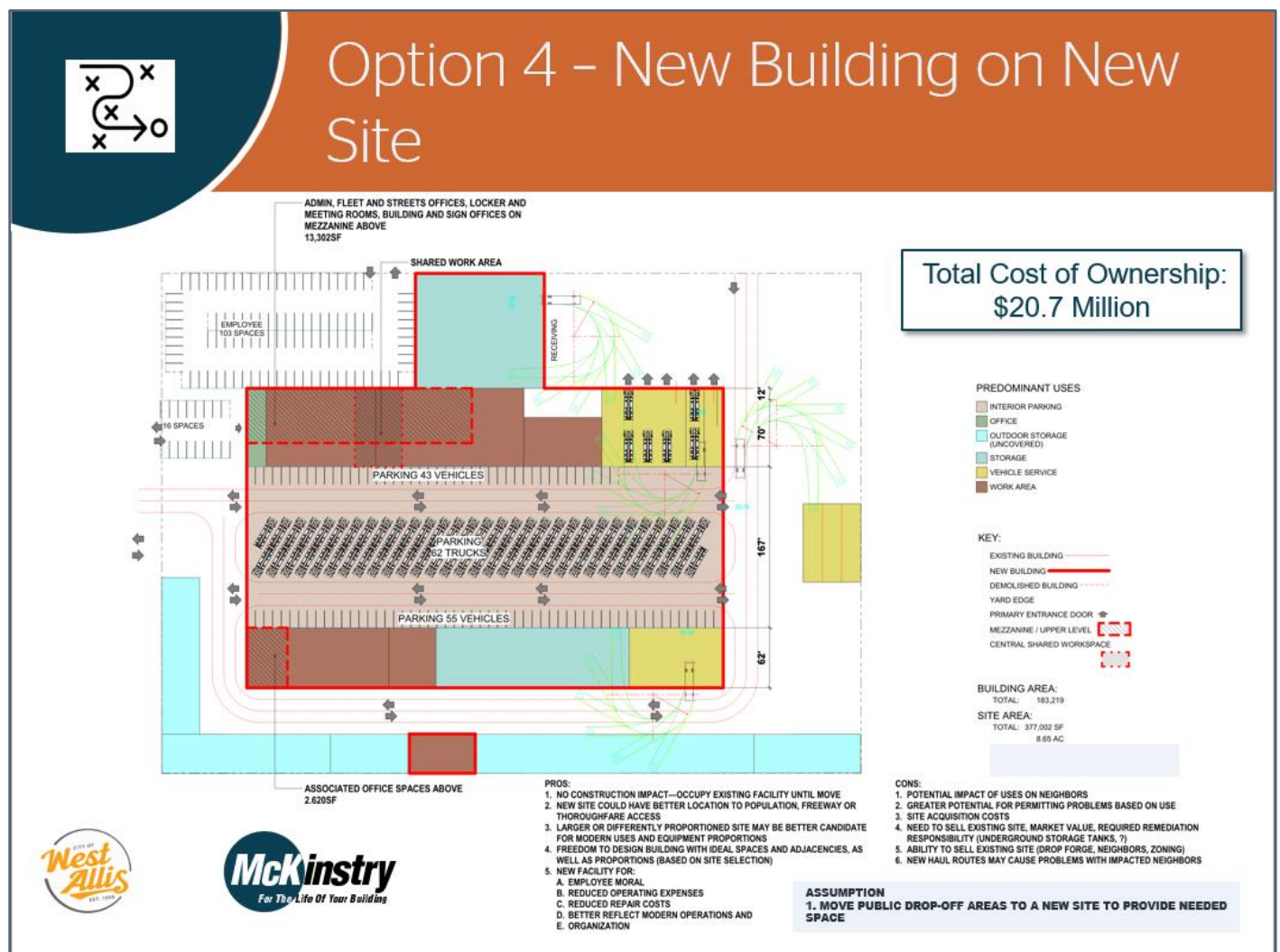
## Option 4: Build new on new site

Total costs: \$50.2 million

Total benefits: \$29.5 million

Total Cost of Ownership: \$20.7 million

Notes: This option assumes the City is able to find and/or purchase a plot of land suitable to meet the needs of the Department of Public Works discussed in this BCA.



# Executive Summary – Business Case Analysis

## 7. Significant Assumptions

Although the term of the financial projections in this analysis is 30 years, the project team assumes modern building life span to be 50 years for the purpose of calculating residual building value. Similarly, to avoid overly speculative comparison between options, this report only uses the first ten years of deferred capital expenditure costs as a point of comparison, since it's impossible to forecast what type or quantity of equipment would be installed in Options 2-4.

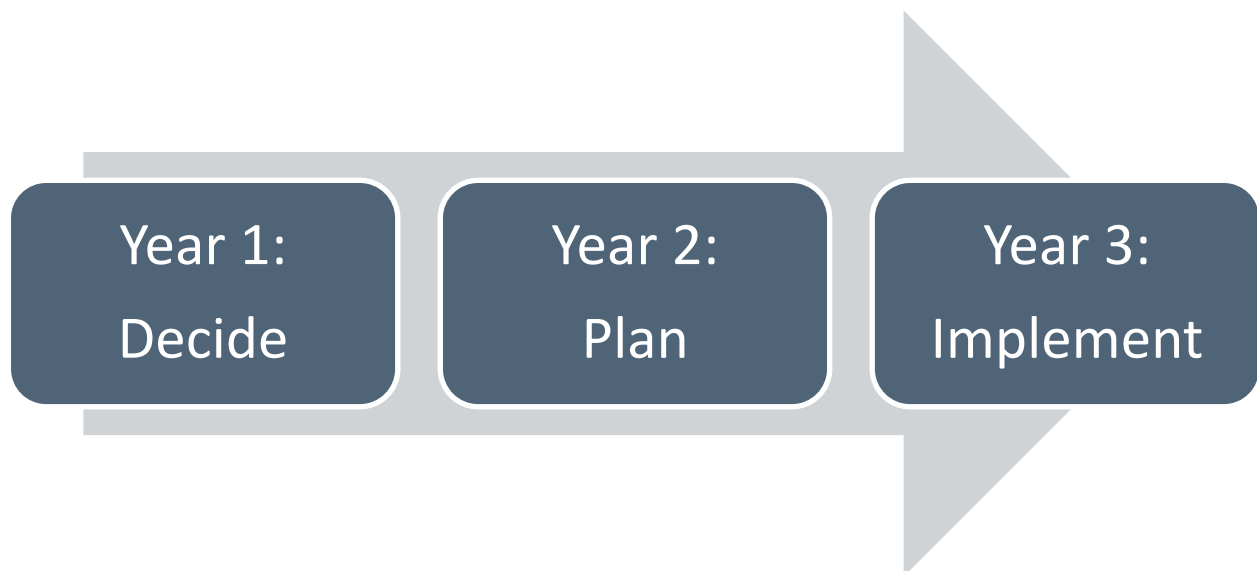
Another important point of discussion is that Options 2-4 assume the relocation of public solid waste and yard waste drop-off to alternate locations and/or alternate dates and times of service. Some of the current inefficiencies experienced at the Municipal Yard facilities are exacerbated by limited, one-way entries used by both public employees and citizens for drop-off, which needs to be addressed in order to take full advantage of this report's recommendations.

Lastly, the project team assumes a three-year timeline for implementing Options 2-4 (Option 1 requires no planning or construction), which is broken down below. This three-year timeline is dependent on many factors, including design review, securing funding sources, weather, procurement lead-times, and contractor selection.

**Year 1:** Finalize option selection, refine scope of work, establish procurement method and plan project budget

**Year 2:** Complete project design and planning

**Year 3:** Project implementation



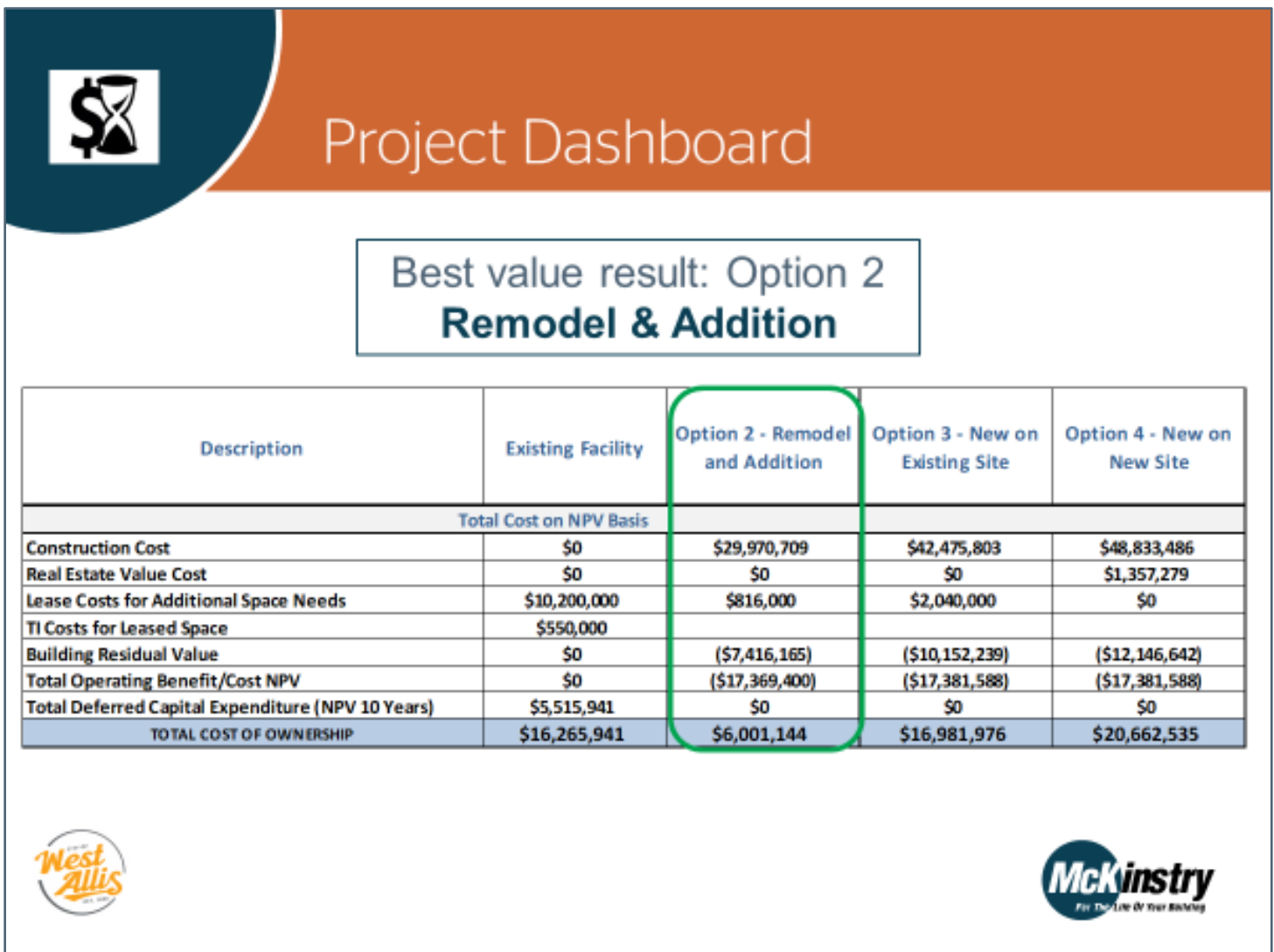


# Executive Summary – Business Case Analysis

## 8. Conclusions

### Recommendation:

Based on the financial analysis presented above in Paragraph 6 (Overview of Options), **the McKinstry project team recommends that the City of West Allis initiate planning to implement Option 2 (Remodel and addition on existing site).**



# Executive Summary – Business Case Analysis

## Explanatory Notes:

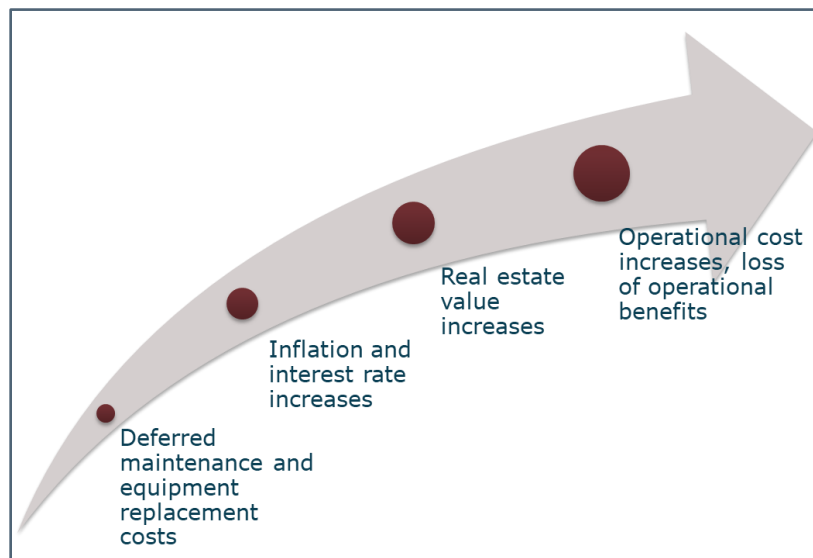
a) While Option 3 (Build new on existing site) provides an operational benefit that exceeds the Option 2 benefits by \$2.8 million, the 30-year costs associated with Option 3 are \$13.7 million greater, which more than quadruples the benefits gained by Option 3.

b) While Option 1 (Keep existing facilities) presents zero up-front construction costs, it also affords zero operational benefits, meaning that 30-year costs to continue operating the existing facilities will far exceed those required of Option 2, not to mention the continued age-related degradation of current facilities.

c) While Option 4 (Build new on new site) provides the most opportunity to design a new, purpose-built facility, and carries the greatest potential operational benefit (\$4.8 million more than Option 2), it also presents the greatest up-front costs by far, and 30-year costs that surpass Option 2 by \$14.7 million.

## Additional Considerations:

**The costs of delay.** Given the on-going need for considerably enhanced Public Works infrastructure, as well as the significant costs of delay associated with not acting quickly, McKinstry recommends that the decision-making process be initiated quickly to avoid interest rate increases, land value increases, and mounting deferred maintenance costs. Assuming an annual inflation rate of three per cent – and that the City continues to maintain existing facilities based on the recommendations of the FCA – *waiting five years to act* could cost \$2.7 million more in capital asset replacement, \$3.9 million more in construction costs, and almost \$3 million in operating benefits not realized (\$9.6 million total). In other words, every year the City waits to renovate or replace its Public Works facilities could cost an average of \$1.9 million in inflation and lost savings.



City of West Allis  
Municipal Yard BCA  
December 2018

Cost/Benefit		Sections	Benefit Type	Option 1 \$	Option 1 Notes	Option 2 \$	Option 2 - Remodel and Addition	Option 3 \$	Option 3 - New on Existing Site	Option 4 \$	Option 4 - New on New Site
Benefit to having updated inventory control and management system and eliminating manual paperwork. Currently spend 15-20 mins per day doing paperwork by 2-3 crew.	Inventory/Space	Water	Inventory/Space	\$ -	No benefits	\$ (2,017.25)	Save 5 mins per day, 2.5 crew.	\$ (2,437.50)	Save 6 mins per day, 2.5 crew.	\$ (2,437.50)	Save 6 mins per day, 2.5 crew.
Benefit to having updated inventory control and management system will make meter exchanges more efficient. Typically 10 exchanges per day.	Inventory/Space	Water	Inventory/Space	\$ -	No benefits	\$ (3,217.50)	Save 20 mins per day on meter exchanged for 1 crew.	\$ (3,217.50)	Save 20 mins per day on meter exchanged for 1 crew.	\$ (3,217.50)	Save 20 mins per day on meter exchanged for 1 crew.
Benefit to having increased inventory capacity so tanks don't have to store inventory off site.	Inventory/Space	Water	Inventory/Space	\$ -	No benefits	\$ (7,312.50)	Save 30 mins per round trip, once a day, for 1.5 crew on average.	\$ (7,312.50)	Save 30 mins per round trip, once a day, for 1.5 crew on average.	\$ (7,312.50)	Save 30 mins per round trip, once a day, for 1.5 crew on average.
Benefit to being able to store hydrants at municipal yard.	Inventory/Space	Water	Inventory/Space	\$ -	No benefits	\$ (1,950.00)	Save 30 mins per round trip, twice a week, for 1 crew on average.	\$ (1,950.00)	Save 30 mins per round trip, twice a week, for 1 crew on average.	\$ (1,950.00)	Save 30 mins per round trip, twice a week, for 1 crew on average.
Benefit to having adequate parking at municipal yard. Water won't have to park extra dump trucks at Reserve storage.	Parking	Water	Parking	\$ -	No benefits	\$ (656.25)	Save 30 mins per round trip, twice a week, for 1 crew, 4 months out of the year.	\$ (656.25)	Save 30 mins per round trip, twice a week, for 1 crew, 4 months out of the year.	\$ (656.25)	Save 30 mins per round trip, twice a week, for 1 crew, 4 months out of the year.
Benefit to having adequate parking at municipal yard. Ready trailer is parked in front of the fire rack.	Parking	Water	Parking	\$ -	No benefits	\$ (1,462.50)	Save 30 mins, 1.5 times a week, 1 crew because they won't have to move the trailer.	\$ (1,462.50)	Save 30 mins, 1.5 times a week, 1 crew because they won't have to move the trailer.	\$ (1,462.50)	Save 30 mins, 1.5 times a week, 1 crew because they won't have to move the trailer.
Benefit to having appropriate wash racks and fuel stations.	Fueling/Wash Stations	Water	Fueling/Wash Stations	\$ -	No benefits	\$ (1,218.75)	Save 7.5 mins per day not having to wait in line for fuel or wash.	\$ (1,218.75)	Save 7.5 mins per day not having to wait in line for fuel or wash.	\$ (1,218.75)	Save 7.5 mins per day not having to wait in line for fuel or wash.
Benefit to moving community dump drop off to transfer station.	Parking	Water	Parking	\$ -	No benefits	\$ (4,875.00)	Save 5 mins per day for 6 crew.	\$ (4,875.00)	Save 5 mins per day for 6 crew.	\$ (4,875.00)	Save 5 mins per day for 6 crew.
Benefit to centralized storage of poles.	Inventory/Space	Electrical	Inventory/Space	\$ -	No benefits	\$ (23,400.00)	Save 4 hours per week, 3 crew.	\$ (23,400.00)	Save 4 hours per week, 3 crew.	\$ (23,400.00)	Save 4 hours per week, 3 crew.
Benefit to having updated inventory control and management system and eliminating manual paperwork.	Inventory/Space	Electrical	Inventory/Space	\$ -	No benefits	\$ (29,250.00)	Save 30 mins per day, 6 crew.	\$ (29,250.00)	Save 30 mins per day, 6 crew.	\$ (29,250.00)	Save 30 mins per day, 6 crew.
Benefit to moving community dump drop off to transfer station.	Parking	Electrical	Parking	\$ -	No benefits	\$ (2,437.50)	Save 5 mins per day for 6 crew.	\$ (2,437.50)	Save 5 mins per day for 6 crew.	\$ (2,437.50)	Save 5 mins per day for 6 crew.
Parking vehicles inside would save them from loading and unloading valuable equipment at start and end of each day.	Parking	Electrical	Parking	\$ -	No benefits	\$ (9,750.00)	Save 20 mins per day for 3 crew.	\$ (9,750.00)	Save 20 mins per day for 3 crew.	\$ (9,750.00)	Save 20 mins per day for 3 crew.
Benefit to having updated inventory control and management system and eliminating manual paperwork and recap sheets.	Inventory/Space	Warehouse	Inventory/Space	\$ -	No benefits	\$ (14,625.00)	Save 30 mins per day, 3 crew.	\$ (14,625.00)	Save 30 mins per day, 3 crew.	\$ (14,625.00)	Save 30 mins per day, 3 crew.
Benefit to having updated inventory control and management system and eliminating manual paperwork and recap sheets.	Inventory/Space	Building and Sign	Inventory/Space	\$ -	No benefits	\$ (14,625.00)	Save 30 mins per day, 3 crew.	\$ (14,625.00)	Save 30 mins per day, 3 crew.	\$ (14,625.00)	Save 30 mins per day, 3 crew.
Benefit to doubling bare root tree planting space. Currently have 100 trees.	Inventory/Space	Forestry	Inventory/Space	\$ -	No benefits	\$ (4,200.00)	Save \$42 per year on 100 trees. (Burlap trees are \$100 versus \$58 for bare root).	\$ (4,200.00)	Save \$42 per year on 100 trees. (Burlap trees are \$100 versus \$58 for bare root).	\$ (4,200.00)	Save \$42 per year on 100 trees. (Burlap trees are \$100 versus \$58 for bare root).
Benefit to having appropriate wash racks and fuel stations.	Fueling/Wash Stations	Forestry	Fueling/Wash Stations	\$ -	No benefits	\$ (4,875.00)	Save 30 mins per day across the division.	\$ (4,875.00)	Save 30 mins per day across the division.	\$ (4,875.00)	Save 30 mins per day across the division.
Benefit to being able to store recycling carts, concrete forms, and tools at municipal yard instead of Morgan.	Inventory/Space	Sanitation Streets	Inventory/Space	\$ -	No benefits	\$ (5,118.75)	Save 15 mins, 3.5 crew, 3 times per week.	\$ (5,118.75)	Save 15 mins, 3.5 crew, 3 times per week.	\$ (5,118.75)	Save 15 mins, 3.5 crew, 3 times per week.
Benefits of having enough rooms for plows at municipal yard.	Parking	Sanitation Streets	Parking	\$ -	No benefits	\$ (937.50)	Save 30 mins, 1 crew, 50 times per year.	\$ (937.50)	Save 30 mins, 1 crew, 50 times per year.	\$ (937.50)	Save 30 mins, 1 crew, 50 times per year.
Benefits to new wash rack system that is properly sized (Sanitation)	Fueling/Wash Stations	Sanitation Streets	Fueling/Wash Stations	\$ -	No benefits	\$ (4,875.00)	Save 15 mins, 10 crew, once a week.	\$ (4,875.00)	Save 15 mins, 10 crew, once a week.	\$ (4,875.00)	Save 15 mins, 10 crew, once a week.
Benefits to new wash rack system that is properly sized (Sanitation)	Fueling/Wash Stations	Sanitation Streets	Fueling/Wash Stations	\$ -	No benefits	\$ (11,700.00)	Save 15 mins, 12 crew, twice a week.	\$ (11,700.00)	Save 15 mins, 12 crew, twice a week.	\$ (11,700.00)	Save 15 mins, 12 crew, twice a week.
Benefits to new fueling stations with adequate and reliable pumps.	Fueling/Wash Stations	Sanitation Streets	Fueling/Wash Stations	\$ -	No benefits	\$ (14,300.00)	Save 4 mins, 22 vehicles, every day.	\$ (14,300.00)	Save 4 mins, 22 vehicles, every day.	\$ (14,300.00)	Save 4 mins, 22 vehicles, every day.
Benefit to having updated inventory control and management system and eliminating manual paperwork.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (43,875.00)	Save 30 mins per day, 9 techs.	\$ (43,875.00)	Save 30 mins per day, 9 techs.	\$ (43,875.00)	Save 30 mins per day, 9 techs.
Benefit to having all fleet functions and supplies located next to each other.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (32,906.25)	Save 22.5 mins per day, 9 techs.	\$ (32,906.25)	Save 22.5 mins per day, 9 techs.	\$ (32,906.25)	Save 22.5 mins per day, 9 techs.
Benefits to having proper storage space. Particularly regarding plow operations in the winter.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (3,656.25)	Save 1.5 hours per day, 1 crew, for 3 months of the year.	\$ (3,656.25)	Save 1.5 hours per day, 1 crew, for 3 months of the year.	\$ (3,656.25)	Save 1.5 hours per day, 1 crew, for 3 months of the year.
Benefits to having properly size tube bay and turning radius.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (9,750.00)	Save 1 hour per day, 1 crew.	\$ (9,750.00)	Save 1 hour per day, 1 crew.	\$ (9,750.00)	Save 1 hour per day, 1 crew.
Benefit to new tire repair area. Current area adds about 50% time to each tire change.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (14,625.00)	Save 1.5 hours per day, 1 crew.	\$ (14,625.00)	Save 1.5 hours per day, 1 crew.	\$ (14,625.00)	Save 1.5 hours per day, 1 crew.
Benefit to new work shop layout and location.	Inventory/Space	Fleet	Inventory/Space	\$ -	No benefits	\$ (9,750.00)	Save 1 hour per day, 1 crew.	\$ (9,750.00)	Save 1 hour per day, 1 crew.	\$ (9,750.00)	Save 1 hour per day, 1 crew.
Staff Morale Benefit - Assuming a 2% productivity gain due to increased morale.	Morale	All	Morale	\$ -	No benefits	\$ (171,600.00)	2% of total wages taken as a morale benefit.	\$ (171,600.00)	2% of total wages taken as a morale benefit.	\$ (171,600.00)	2% of total wages taken as a morale benefit.
Benefits to having proper indoor air quality. Based on studies performed at Cal Berkeley and Harvard.	Morale	All	Morale	\$ -	No benefits	\$ (85,800.00)	1% of total wages taken as a performance benefit associated with proper indoor air quality (IAQ).	\$ (85,800.00)	1% of total wages taken as a performance benefit associated with proper indoor air quality (IAQ).	\$ (85,800.00)	1% of total wages taken as a performance benefit associated with proper indoor air quality (IAQ).
Benefit to moving public drop off from municipal yard to Morgan and Transfer Station.	Inventory/Space	Sanitation Streets	Inventory/Space	\$ -	No benefits	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.
Benefit to moving public drop off from municipal yard to Morgan and Transfer Station.	Inventory/Space	Sanitation Streets	Inventory/Space	\$ -	No benefits	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.	\$ (22,100.00)	15 trips per week to transfer station, 12 min per trip and 20 trips per week, 25 mins per trip.
Indoor heated parking benefit on Fleet Life Maintenance Costs, and Warrant Debt (Government Fleet states that the benefit of covered fleet parking is 3 times that of construction over 50 years. Assumes that twice as much fleet will have indoor heated parking).	All	All	All	\$ -	No benefits		Government Fleet states that the benefit of covered fleet parking is 3 times that of construction over 50 years. Assumes that twice as much fleet will have indoor heated parking.		Government Fleet states that the benefit of covered fleet parking is 3 times that of construction over 50 years. Assumes that twice as much fleet will have indoor heated parking.		Government Fleet states that the benefit of covered fleet parking is 3 times that of construction over 50 years. Assumes that twice as much fleet will have indoor heated parking.
Covered parking benefit on Fleet Life and Maintenance Costs.	All	All	All	\$ -	No benefits		Assumes that savings will equal cost of construction over 50 years.		Assumes that savings will equal cost of construction over 50 years.		Assumes that savings will equal cost of construction over 50 years.
Total				\$		\$ (579,980.00)		\$ (579,986.25)		\$ (579,986.25)	