Subject: Niagara EMS Primary Hub – Background and Site Opportunities

Report to: Committee of the Whole

Report date: Wednesday, December 1, 2021

Recommendations

1. That the following report **BE RECEIVED** as a summary of activities and information concerning the proposed construction of a new facility known as the EMS Primary Hub; and
2. That staff **BE DIRECTED** to continue with exploration of site assessment and partnership opportunities as detailed within this report, and provide an update no later than end of Q2 2022.

Key Facts

- While referred to as the “EMS Primary Hub”, this facility is intended to serve all programs of the Emergency Services Division, with EMS being the largest program.
- The purpose of this report is to update Council on the progress in the gathering of information to determine a preferred course of action for the development of the Hub project.
- Staff will report back in Q2 2022 with validated details of options for consideration and approval.
- The recommendation for the development of a hub and spoke facility model was first identified in 2011 following a corporate facilities review that included a long-term EMS facility plan.
- At that time, staff were directed by Council to develop options consistent with a Hub model.

- Between 2012 and 2019 a series of reports, consultant reviews and updated modeling was produced to reaffirm the Hub as the preferred model for long-term delivery of EMS.
- During this time, competing corporate priorities and affordability concerns for the construction of the Primary Hub resulted in the project being deferred beyond these studies.
- In 2017, staff was directed to complete a business assessment of the Primary Hub including architectural functional analysis and process mapping of operational and logistics activities.
- In 2018, the findings of the business assessment and recommendations to proceed with the project was again deferred as new factors specific to the NRPS 911 back-up dispatch centre required additional assessments to be conducted.
- In 2019, an updated feasibility evaluation was completed and a site selection matrix developed.
- In 2020, to help inform the potential for a Primary Hub development an Expression of Interest (EOI) was issued to identify potential locations for Hub placement which met pre-defined criteria, the finding of this process are outlined herein.

Financial Considerations

The total projected budget for the construction of the Primary Hub was preliminarily $32M (2011) and was adjusted in 2016 to $67.5M of which $5M has been approved through previous capital budgets ($1.1M in 2011 and $3.9M in 2016). Of the approved amount, $1.1M has been initiated to date of which a portion has been used in the completion of the feasibility studies. Since this time, construction and real estate costs have increased substantially resulting in a new estimated cost of $90.5M consisting of $77.2M in capital (127,840 square foot facility) and $13.3M in land (minimum 10 acres).

A detailed feasibility study for the evaluation and implementation of a Primary Hub was first completed in 2016 by The CLARICO Group Inc. CLARICO updated this study in 2019 and again in 2021 (Appendix 1) with new cost estimates and in-depth analysis for three possible facility models:

1. Continue with the Current Facility Model (CFM) continuing to re-lease and periodically expand those facilities to meet future demand.
2. Build a new Primary Hub funded internally by Niagara Region as Capital Build Model (CBM).
3. Engage a Third Party Leasing Model (3-PLM) to construct a new Primary Hub assuming a 30-year leasing arrangement.

By means of the various business drivers, CLARICO applied modelling techniques to generate gross costing models and compare the three possible options in the form of 30-year cash flows. As detailed in Appendix 1 and summarized in Figure 1 below, CLARICO identified that with a probability of limited capital funding, the Design Build Third Party Leasing Model (3-PLM) option will most likely suit the Region financially with this model having the lowest Net Present Value (NPV) (Table 1). The CLARICO models incorporate cost savings and cost avoidance however, does not include provincial funding. It also does not include specific capital improvements that may be related to end of life facility components of the CFM. These costs would only serve to further increase the cost of the CFM in relation to the Hub models.

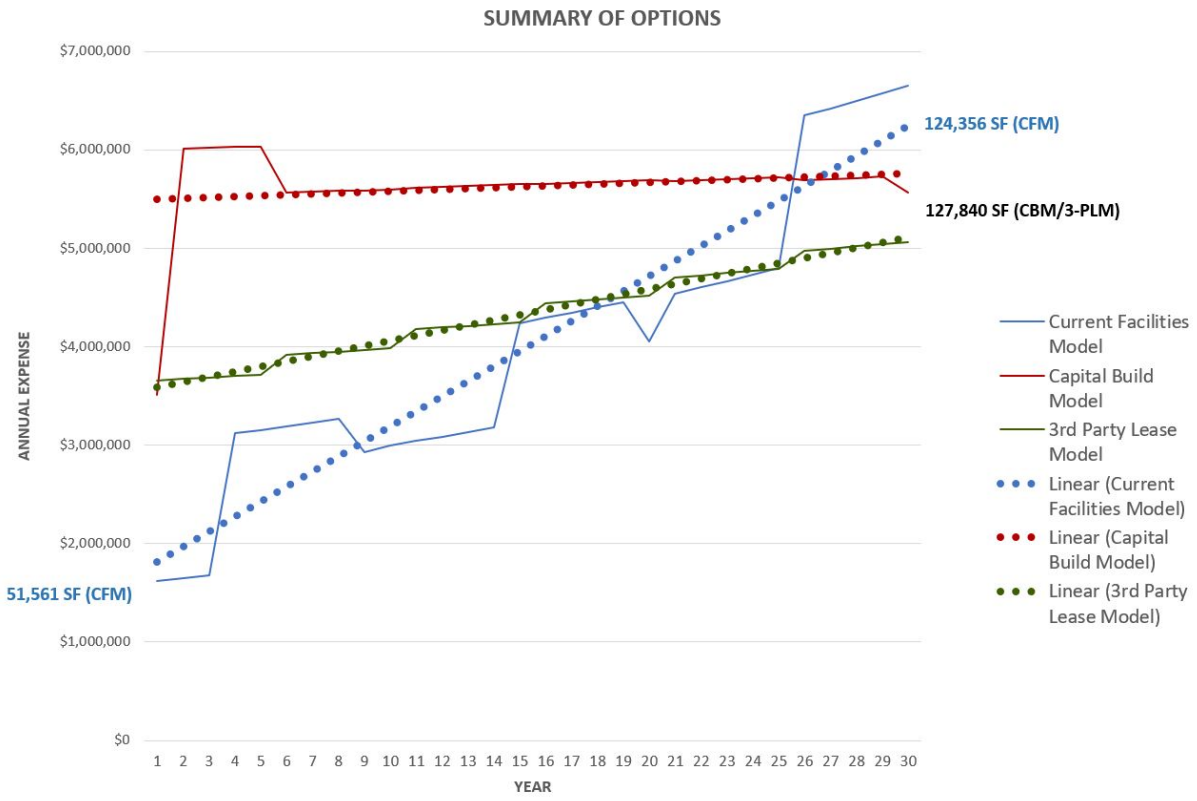


Figure 1: Thirty-year cash flow comparisons for three possible facility models

Layering in the provincial funding, the net present value of the options results in the Third Party Lease model having the lowest NPV of the three options.

Scenario Models with Net Present Values

Scenario	**NPV ($Millions)**
Current Facility Model	$29.18
Hub – Capital Build Model	$53.37
Hub – Third Party Lease Model	$27.11

Table 1: Scenario Models with Net Present Values

The CLARICO report incorporates budget estimates consistent with current regional facility capital and operating costs for a Capital Build Model. The Current Facilities

Model assumes certain growth in both space requirements and the associated lease costs. The Third Party Lease Model assumes aspects of what a partnership opportunity may look like financially, however the assumptions have not been tested, and these costs may fluctuate dependent on a proposed agreement.

The Third Party Lease Model will be deemed a capital lease and therefore would be included in the capital budget with a long-term liability of $66 million. This will have operating budget impacts; however will preserve debt capacity limits and reserves for future Regional capital requirements (Table 2).

Future capital lease payments are included in the Province of Ontario's Annual Repayment Limit (ARL) calculation, however Standard & Poor's does not include capital leases when assessing their credit rating score as these are considered direct debt and not tax supported debt.

Total Funding Costs for the Third Party Lease Model

($Millions)	Year 0	Year 1
Capital Expenditures		
Previously Approved and Funded Capital Projects	$4.82	$0
New Facility		$65.62
Total Capital Expenditures	**$4.82**	**$65.62**
Funding		
Debt	($3.97)	
Development Charges	($0.86)	
Capital Lease Funded With Provincial Funding		($37.44)
Capital Lease Funded With Development Charges		($9.28)
Capital Lease Funded by Levy		($18.90)
Total Funding	**($4.82)**	**($65.62)**

Table 2: Total funding costs for the Third Party Lease Model

The NPV analysis of the Hub Models have incorporated the benefit of cost avoidance of incremental paramedic resources since they can be redeployed through the Hub Model to patient care activities due to the efficiencies in this model. The operating budget requirement however, is that of the full net incremental cost of the hub facility, excluding the benefit of cost avoidance. It is important to note that the incremental cost of the Hub is very much in line with the incremental paramedic resources that are avoided which is equivalent to approximately one 24-hour ambulance or $1.2M (0.29% of the levy).

The preferred Third Party Lease Model while it does have the lowest overall net present value, it does have an incremental net budget impact equivalent to $1.7 million or 0.41% of the levy in the annual operating budget, which will require approval in the year the capital budget is approved (Table 3). The actual expense increase in year one of the model is $3.6M or 0.90%, which is due to the land ambulance funding lag of one year. As in past years, staff recommend funding the one-time funding lag from taxpayer relief

reserve such that the approved operating budget increase is the normalized levy requirement.

Model Costing for Year 1 and Year 2 of the Third Party Lease Model

Model	Year 1	Year 2
Current Model net cost	$0.71	$0.73
Hub – Lease net cost	$4.35	$2.39
Lease increase over Current	$3.64	$1.66
One-time Reserve Transfer	($1.98)	$0
Difference as % of Levy	0.41%	0.41%
Paramedic Resource Cost Avoidance	$1.20	$1.22
% of Levy	0.29%	0.30%

Table 3: Model Costing for Year 1 and Year 2 of the Third Party Lease Model

Background

As part of the downloading of ambulance services in 2000, the Niagara Region inherited ten facilities used by the previous six ambulance services operating within the region. Over the past 21 years, nine of these stations have remained operational, while the Region has replaced one and added eight locations. Today, a total of eighteen ambulance stations exist in a variety of designs and conditions, from stand alone owned facilities, to shared space with other emergency services, to leased units in strip malls.

The legacy facility model requires each site to be self-sustaining where paramedics report to work, clean/stock ambulances, maintain the station and deploy into the system. The current model requires each location to contain all services and amenities including multi-bay garages, inventory and supply rooms, secure medication storage, cleaning equipment, change rooms, lockers, administrative resources and staff break areas. The last stand alone station to be constructed was the Merrittville Station in

2014, located on the grounds of Niagara Region at 1815 Sir Isaac Brock Way. This facility required all of the amenities described above in its design, resulting in the occupation of a large physical footprint.

Continuing to construct new EMS stations under the current facility model will continue to require these stations to incorporate the full spectrum of services and amenities that could otherwise be provided through alternate means in a more efficient facility model. To put it another way, the current facilities model will result in the construction of future stations that are larger than needed, more costly than required, and less operationally efficient.

Current State

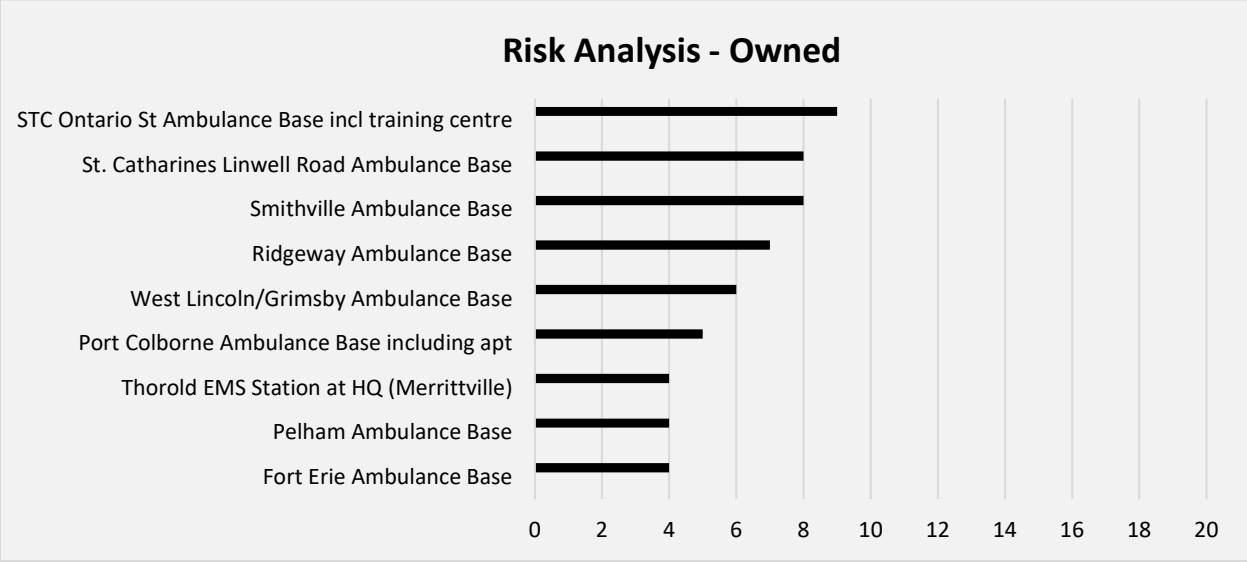
In addition to the eighteen ambulance bases, the Emergency Services Division maintains five separate leases (not including leased ambulance stations) for support and administrative services. Four of these leases are held at the Niagara Corporate Business Centre (NCBC) located at 101 Lampman Court (previously 509 Glendale Ave East) in Niagara-on-the-Lake and the other space at 2 Westwood Court, also in Niagara-on-the-Lake:

1. Niagara Ambulance Communications Services (NACS - dispatch centre) - located at NCBC
2. Dispatch Training - relocated to NCBC due to COVID-19
3. ESD Administration (Space 1) – located at NCBC
4. ESD Administration (Space 2) – located at NCBC
5. Fleet and Logistics/MIH – located at 2 Westwood

In 2019, Niagara College purchased the Niagara Corporate Business Centre (NCBC) and assumed the leases at this facility. While Niagara College has committed to maintain current leases at the NCBC, there is no guarantee for how long this will continue to be the case as the College likely looks to develop this location.

The current leases at 101 Lampman Court expire in August 2024 with a termination notice between ninety days and six months (depending on location within the building). The lease for 2 Westwood Court expires July 2025 with no termination notice required. If these leases were not to be renewed, Niagara EMS would need to find new space within imposed timelines. The preference is to mitigate against this risk, while simultaneously increasing operational efficiency and better positioning Emergency Services for the future, by developing of a Primary Hub facility.

With the assistance of Real Estate and Construction, Energy and Facilities Management, a recent risk assessment was undertaken to determine the existing facility infrastructure for both owned and leased spaces and the level of threat for displacement from that facility due to non-renewal of leases, end of life for the building or significant increased costs to remain in the facility. Figure 2 highlights seven leased spaces that are at greatest risk of needing to relocate.



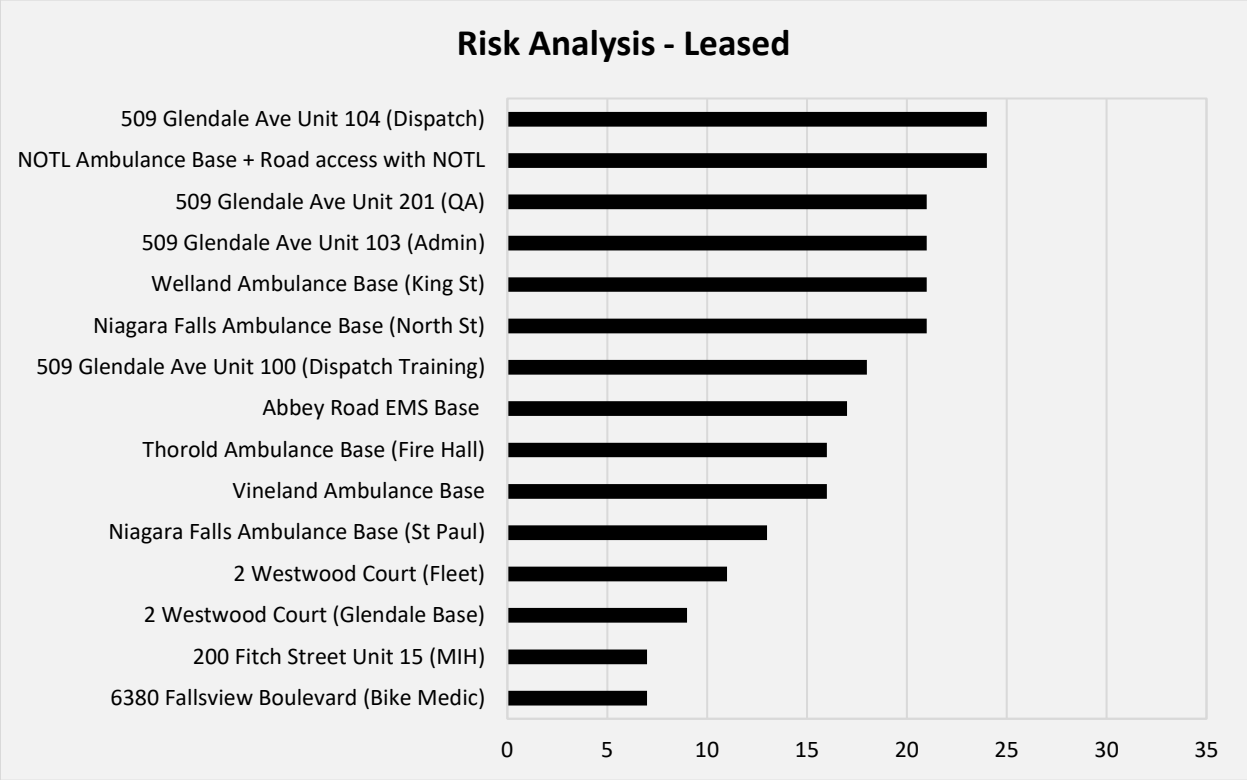


Figure 2: Risk Assessment of current owned and leased EMS facilities

While the construction of a Hub does not alleviate all of the risks associated with current facilities, it would ensure sustainability of critical services at five of the eight locations at greatest risk. Of particular concern is the leased space at the NCBC that hosts the Niagara Ambulance Communications Service. Not only has the available space for the dispatch centre been exhausted with no room for additional workspace to meet future growth, should the lease for this space not be renewed, Niagara's continuation of operating the ambulance communications centre would be significantly compromised. Expansion or relocation of the NACS is a decision of the Province as the Niagara Region operates the service under a Performance Agreement and is funded by the Ministry of Health. Staff have engaged the Province on future ambulance dispatch facility considerations.

Future State

No fewer than five external reports commissioned by the Region and Niagara EMS over the previous 10 years have all supported a Hub Model to be the preferred option for the future of Niagara EMS. This model is defined as the construction of a Primary Hub that will provide centralized operations for the Emergency Services Division including all administration, training, fleet, communications (dispatch) and emergency operations. In the appropriate location, this facility would become the reporting and deployment hub for a majority (60-70%) of Niagara EMS frontline resources. Future analysis would determine the need for the development of two additional Satellite Hubs to accommodate the remaining operations not captured by the Primary Hub.

For clarity, proceeding with this model will not result in a loss of physical presence in the local municipalities. Ambulance deployment locations will still exist for resources to be deployed in the communities when not active on a response (Figure 2).
However, the deployment locations, “Posts”, will not be required to maintain stock and storage of medical supplies and inventory or the need for full amenities, as these services will be provided through the Hub. This will enable paramedics to spend more of their time in a state of readiness for responses and service delivery, rather than performing cleaning and stocking duties. As a result, future new posts or replacement posts will require a smaller (approx. 30%) footprint.

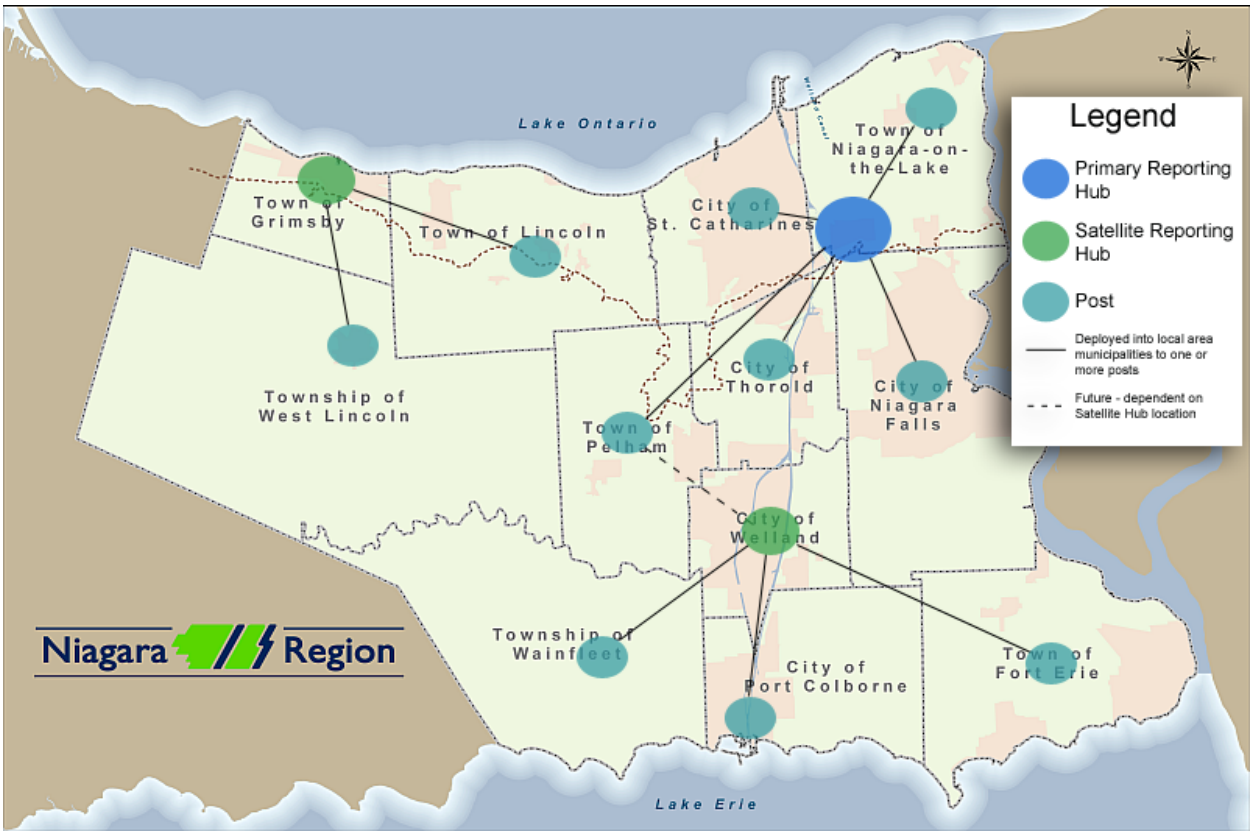


Figure 3: Shows the relationship of Reporting Hub's and the local area municipality post(s) where resources are deployed. The Satellite Hubs will be included in longer-term facility planning with locations to be determined at that time.

Opportunities to sell existing Region-owned EMS stations and replace them with smaller facilities is possible and will be further explored once the location and design of the Primary Hub is determined. Remaining stations will be replaced as required due to building age, location or displacement.

Analysis

The concept of an EMS Hub model was first proposed in PHD 23-2012 following a corporate-commissioned review of Regional facilities, including EMS. This analysis was completed by Kasian Architecture Interior Design and Planning Ltd. (Kasian). The final report provided to Council made the recommendation of a ‘hub and spoke’ model of future facility infrastructure for EMS. Following this report, staff was directed to develop

options consistent with the Hub model and report back to Council for consideration of implementation. Over the course of the following nine years, a number of activities including further consultant reviews specific to the Hub project were undertaken. The following is a timeline of these activities and the resulting outcomes.

2012-2016

Various consultants were engaged to assist with long term planning of Niagara EMS and provided commentary supporting a Hub model of service delivery. However, long-term capital planning pressures and other facility priorities resulted in delays in the Hub model progressing.

February 2016

Reports PHD 5-2016 and CL-C4 2016 directed staff to engage in a consultants review to develop a long-term master plan for Niagara EMS. As a part of the scope of work to be completed, Council requested that the consultant (Pomax Inc.) review the current facilities plan in addition to other industry considerations and practices as related to EMS facility models and provide recommendations regarding potential efficiencies, innovations, and/or design consideration that support EMS service and performance.

At this same time, Niagara EMS was conducting a Feasibility Study (CLARICO) to determine a future state model for costs, footprints, suggested locations, fleet size and new processes required for construction and efficient operation of a Primary Hub.

March 2017

Pomax Inc. provided their Master Plan report including the facility review as outlined in CL-C4 2016. After considering the previous consultants work including the recent Feasibility Study completed by CLARICO, Pomax concluded that Niagara EMS should determine if the facility feasibility studies conducted in 2011 and 2016 are sufficient to move to the next stage of a facility model evaluation.

This led to Council direction for staff to complete a business assessment of a centralized facility model (PHD 05-2017). This was further referenced in PHD 17-2017 regarding the implementation of System Transformation that would deliver a more detailed service delivery design including an alternative model, long term resource plan and implementation strategies to achieve the future model. Expediting the Hub model would allow optimized infrastructure to support the new deployment plan.

June 2018

After procuring consultant Architecture49 Inc. (A49) to complete the work as directed in PHD 05-2017, A49 submitted a Feasibility Study that provided a conceptual design of space requirements and other facility related elements to be considered for a Primary EMS Reporting Hub to provide optimal service levels for the Region.

This information was prepared to report back to Council with recommendations to proceed however, this was deferred by staff as a result of new information, specifically the NRPS 911 Back-up Centre and the need to permit more time to assess other alternatives to locate and construct the Primary Hub that might include the back-up centre.

February 2019

A49 was engaged to review alternatives for the development of the Primary Hub including the option to renovate the current leased location of Emergency Services Division administration located at the Niagara Corporate Business Centre, which was under private ownership at that time. After completing this assessment, it was not recommended to expand using the existing infrastructure however; a new build on the existing site would be feasible.

With the assistance of consultants WSP, staff then undertook the development of a site selection matrix to lead in determining possible locations to host the Primary Hub given the defined parameters.

The Clarico report from 2016 was also updated with new information, including a human resource assessment, to support the Hub as being the preferred facility model.

July 2019

A site selection matrix was completed (Appendix 2) however; no further action was taken as the capital budget earmarked for project advancement in 2020 was reprioritized for other Region projects. Work towards the Primary Hub was to resume in 2020. The subsequent delays in pursuing the Hub resulted in the need to locate the NRPS back-up centre at an alternate location as discussed in report PHD 12-2021 Dispatch Consolidation.

June 2020

Delayed due to COVID-19, work on the Primary Hub was resumed later in the year. Based on the previous activity undertaken to that point, it was determined that the appropriate course of action to further evaluate the ability of locating a Primary Hub within a defined geo-fence, was to identify applicable parcels of land within the established site selection matrix and issue correspondence to land owners of a possible interest in their property for the development of the Hub.

September 2020

Using the criteria noted above (defined geo fence - Appendix 3), vacant land was identified by Region GIS staff as possible sites to locate the Primary Hub. For the properties that met the initial site selection matrix, six Expression of Interest letters were distributed to the property owners to determine interest in making the space available for the Hub. EOI letters were also sent to two facility owners of properties currently leased by Niagara EMS that could be considered for future development. Five responses were received indicating an interest in pursuing this opportunity further. Three of the responses were further assessed against the site selection matrix and all three were not recommended as an eligible location. Two of the responses were from

owners of current facilities leased by Niagara EMS expressing an interest for their site to host the development of the Primary Hub; both performed well against the site selection criteria:

- Ernie Reimer, owner of 2 Westwood Court, Niagara-on-the-Lake, the current location of the Niagara EMS Fleet & Logistics division.
- Niagara College, owner of the Niagara Corporate Business Centre located at 101 Lampman Court (previously 509 Glendale Ave East) Niagara-on-the-Lake, the current location of the Niagara EMS Administration and Dispatch division.

To best understand how the current landlords could provide opportunities for the development of the Primary Hub, meetings were scheduled to receive further information on their interest to engage in this development. On December 15, 2020, separate meetings were held between staff and the property owners.

Discussion

Two opportunities have been identified for the development of the Primary Hub consistent with the 3-PLM model as described by CLARICO. Both of these are in a model that offers mutual benefits to the stakeholders. To better inform the specifics of what advantages each of these might provide, further investigation into each is required. The following summary provides a high-level description of each option.

2 Westwood

- Private ownership
- Current landlord for Niagara EMS Fleet and Logistics, Mobile Integrated Health (MIH) and ambulance station
- Expansion to accommodate a Hub would require use of adjacent parcel of land
- Additional space possible for other Regional services

Niagara College

- Current landlord for Niagara Ambulance Communications Service, Dispatch Training Centre and Emergency Services Division Administration
- Extension of College-Region relationship as a Centre of Excellence for state-of-the-art learning within an operational campus environment

Property Acquisition Strategy

Staff will proceed with the most appropriate strategic approach to property acquisition, which could include undertaking a competitive process, an open, transparent and non-binding process (Expression of Interest or NRFP) or other methods to solicit interest from the market/potential property owners, which would enable Niagara Region to secure property rights for the Niagara EMS Primary Hub.

Alternatives Reviewed

Available Land

A property has been identified by Infrastructure Ontario (IO) that could potentially meet the requirements of the Primary Hub. This space is currently not available for development as IO has only issued a call for interested parties to respond and will be disposing of the land in the future.
While the property may be suitable for the Primary Hub, it may also be contested as applicable property for further residential development bordering the site. This may result in delays in the application process and hold-up decisions necessary for the Hub to move forward.

A Commercial Real Estate agent could be procured to investigate possibilities that staff would not be aware of in the market or of possible property owner's interested in selling. This is similar to the process taken by internal Real Estate staff and therefore unlikely to identify additional properties and not be a prudent use of taxpayer dollars.

A pause could be taken on the land acquisition to evaluate post-pandemic impact on the real estate market as well as an analysis of the effect of other work environment changes (i.e. remote working from home). This option is not recommended as this will continue to elongate critical decisions with increased risk of the issues identified within this report.

Direct to Market Negotiations

Pursuant to the above, staff would commence direct negotiations with landowners for those properties identified as prime locations for the Primary Hub. Should the preferred strategy yield no appropriate properties, then staff would explore other options as a secondary approach to securing suitable property.

Investigation of Surplus Niagara Region Lands

Using property that is currently owned but has been deemed surplus at the Niagara Region was considered as a way of reducing project costs and expediting the acquisition of land. In consultation with Niagara Region Real Estate staff, current surplus properties were investigated for their suitability for the Primary Hub. At this time, there are no properties available that meet the size, approximate location parameters and amenities required for the Primary Hub. Locating the Hub at a site that does not meet the defined prerequisites could negatively impact operational efficiencies, deployment of resources and functional site design. Surplus properties will continue to be considered if a suitable property is declared surplus during the property acquisition process.

Current Facilities Model

The option to continue providing services of the Emergency Services Division through the current facility model is possible through renegotiation of existing leases, continued maintenance on aging facilities and the ad-hoc construction/leasing of additional space as need arises. It should be noted that the current facility spaces are well beyond

capacity and in absence of a long-term facility plan, additional space will be required regardless.

This option poses risk in the possible termination of leased space and the resultant need to relocate in a time-limited period. Additionally, new stations will need to be built or replaced in the near future and in absence of a secure facility plan, these buildings may be built beyond and at greater cost to what may be necessary should the Region choose at a later time to pursue a Hub model.

Relationship to Council Strategic Priorities

Supporting Business and Economic Growth

The development of a Hub, particularly in partnership with the community, provides a forward thinking approach to long term strategic planning and leveraging partnerships in the business community and post-secondary institutions.

Healthy and Vibrant Community

The Hub provides a confident facility model to work from in the strategic deployment of emergency services into Niagara communities as the region continues to grow. With Niagara EMS delivering a new model of service in the context of Mobile Integrated Health, the Hub provides coordination of these resources to maximize time and availability in the community.

Responsible Growth and Infrastructure Planning

In the absence of facility stability, the Emergency Services Division is unable to plan for growth and appropriately ensure the necessary infrastructure exists for the future delivery of services for the region. The Hub offers sound asset management planning to ensure sustainable investments in the infrastructure needed to support existing residents and businesses, as well as future growth in Niagara.

Sustainable and Engaging Government

The Hub offers an opportunity to build an adaptive environment that employs leading business practices, such as asset management, to foster financial stability in delivering critical infrastructure and services. Such a facility provides possible new revenues and generates business engagement of mutual benefit.

Other Pertinent Reports

- PHD 23- 2012 - Niagara EMS Strategic Accommodations Study
- PHD 17- 2014 - EMS System Performance Sustainability
- PHD 17- 2015 - EMS System Performance Sustainability
- PHD 05- 2016 - Niagara EMS Master Plan
- PHD 08- 2016 - Master Plan Award of RFP
- PHD 19- 2016 - Niagara EMS Mobile Integrated Health Community Paramedic Update
- PHD 21- 2016 - 2016 Update to EMS System Performance Sustainability
- PHD 05-2017- Niagara Emergency Medical Services Pomax Master Plan Review
- PHD 19-2017 - Niagara EMS 2018 Resource Requirements
- PHD 17-2017- Niagara EMS System Design Changes

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Appendices

Appendix 1 Niagara EMS Primary Hub Feasibility Study

Appendix 2 Niagara EMS Primary Hub Site Selection Weighed Evaluation Table and Site Selection Manual for Site Proponents

Appendix 3 Site Selection Manual General Boundary Map

NIAGARA EMERGENCY MEDICAL SERVICE PRIMARY HUB FEASIBILITY STUDY 2.0

Abstract

Detailed feasibility study for the evaluation and implementation of a new Primary Hub for Niagara Emergency Medical Services (NEMS).

Draft Report v6

October 8, 2019 – Revised October 28, 2021

The CLARICO Group Inc

Contact david.bajurny@CLARICOgroup.com

Table of Contents

1. Executive Summary

The Regional Municipality of Niagara Emergency Medical Services (NEMS) is committed to delivering quality 24-hour emergency pre-hospital medical care and transportation to individuals experiencing injury or illness. NEMS is comprised of a dedicated team of highly qualified front-line paramedics and staff that work with up-to-date equipment and technology to give Niagara the best service available and continually seek ways to improve the value for money on those services.

As per the recommendations of the Kasian December 12, 2011 "Accommodation Study: Regional Municipality of Niagara Emergency Medical Services" final report known informally as the "Kasian Report"), the NEMS engaged a third-party consultant (see below "CLARICO") to conduct a detailed feasibility study of the "Accommodation Model D -Primary Hub" with a complement of three satellite reporting hubs/spokes and a distributed network of bases. That study was completed and published on February 9, 2016.

This current study focused on revising, using 2019 statistics and 2021 financial data. Areas not addressed in this revision are those sections dedicated to the conceptual design and sizing of the Primary Hub. In our opinion, this requirement was dealt with the third party A49 Report of 2018. That report was conducted by an Architectural consultant.

The 2019 study focused on the operations and processes of the Fleet Logistics organization and revising the Current Facilities Model (CFM) and future state Primary Hub facilities and Fleet Logistics human resources requirements for the next 10 years. For this 2021 Revision, the results were extrapolated for years 11-30.

All the Fleet Logistics processes were mapped for the Current Facility Model. Assumed changes to those processes were developed for a Primary Hub operation. Those Future State processes were also mapped. Subsequently, both the Current Facility Model (CFM) and Future State Primary Hub process maps were linked to a series of Staffing Models to determine correct/optimum CFM staffing and Future State (Primary Hub Model) staffing levels.

The results of the Staffing analysis revealed the following:

- Staffing required under the Current State: 8.88 FTEs (Full Time Equivalents)
- Staffing required under the Primary Hub Model: 16.30 FTEs

All the statistical and financial data used for the 2019 Draft CLARICO Report was revised for this Final Report. (It should be noted that all findings and analysis were completed pre-Covid and does not consider any financial or staffing changes applied due to Covid implications). Relevant information was again updated to 2021 and all assumptions were made current. This data acted as the drivers for a new 30 year Financial Options Analysis and cash flows. Most current operational data were provided by Fleet Logistics. Inflation rates were gleaned from the 2017 Pomax Report, and population projections were obtained from the Government of Ontario. New Primary Hub construction and operating costs were obtained from the "EMS Hub Budget Revised 2021" and "EMS Hub Estimates June 30, 2021" Niagara Region documents.

For the resulting 30-year financial cash flows, 3 options were considered:

1- Continue with the Current Facility Model continuing to re-lease and periodically expand those facilities to meet future demand. With 2022 being the working base year (year 1), expansions were simulated for Fleet and dispatch in year 5, 15, and 25. The resulting square footage was modeled to approximate the provided sizing from the A49 Report.
2- Build a New Primary Hub incorporating HQ (4 leases), Fleet Centre (2 leases) and the Training Centre. (The Glendale Base has been relocated to the Fleet Centre at 2 Westwood Court). This option would be funded internally by Niagara Region.
3- Engage a third party to construct a New Design Build Primary Hub occupancy being approximately by year 5. This option would assume a 30 year leasing arrangement.

The numbers displayed in the 30 year cash flows do not include any consideration of provincial subsidies that may be applied by Niagara Region/EMS.

The Pros and Cons for the 2 options developed for a New Primary Hub are outlined in Section 7 of this Report. Certain benefits accrue to each option; both are positive, But with a probability of limited capital funding in Year-5, the Design Build 3rd Party Leasing (3-PLM) option will most likely suit the Region financially. This is a significant investment in the future to provide the best in Resident Care for the residents of the Niagara Region. (See Section "8. Conclusions")

2. Study Background

The Regional Municipality of Niagara Emergency Medical Services ("NEMS") is committed to delivering quality 24-hour emergency pre-hospital medical care and transportation to individuals experiencing injury or illness. NEMS is comprised of a dedicated team of highly qualified front-line paramedics and staff that work with up-to-date equipment and technology to give Niagara the best service available and continually seek ways to improve the value for money on those services.

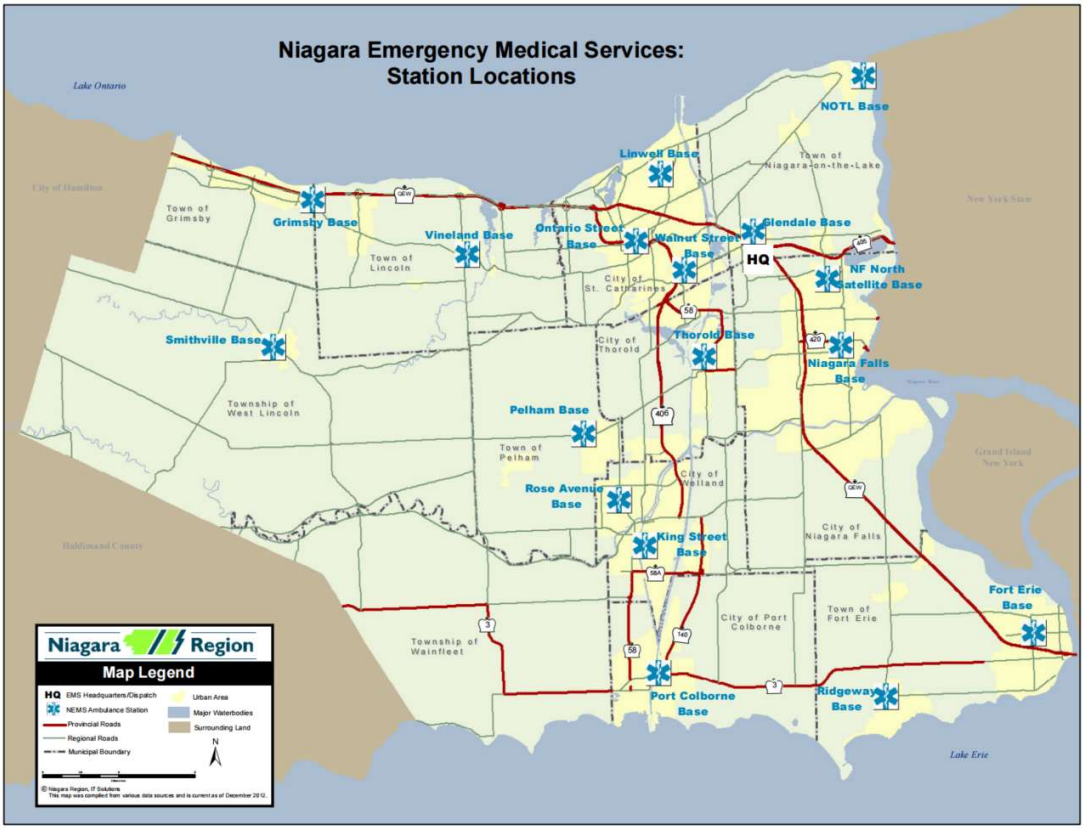
As per the recommendations of the Kasian December 12, 2011 "Accommodation Study: Regional Municipality of Niagara Emergency Medical Services" final report known informally as the "Kasian Report"), the NEMS engaged CLARICO to conduct a detailed feasibility study of the "Accommodation Model D Primary Hub" with a complement of three satellite reporting hubs/spokes and a distributed network of bases. That study was completed and published on February 9, 2016. CLARICO was engaged in 2019 to update the 2016 Report. The 2019 Report, in Draft, was placed in abeyance due to Capital Funding uncertainties. CLARICO was requested to Revise the 2019 Draft to provide for 30 year cash flows for the 3 options outlined previously. This Revision (September 2021) represents the results of that work. The Fleet Logistics FTE analysis is unchanged from the 2019 Draft.

Other 3rd. Party Studies were also completed during 2017-18. The Pomax Report (March 2017) provided an overview of Regional EMS support, culminating in service improvement recommendations. The A49 Report provided an outstanding conceptual design of a Future State

Primary Hub. A subsequent report from A49 provided a roadmap to an RFP solicitation for construction/development of a New Primary Hub including land acquisition. With this CLARICO report and with the previous reports of the past 2 years, NEMS has profiled all the element of decision making in moving forward with the Primary Hub construction Project.

The map below displays the current location (as of 2019) of all the EMS bases in the region, including the location of EMS Headquarters on Glendale Avenue. The Fleet Logistics centre is located at Westwood Court in Niagara-On-The-Lake.

Current NEMS Base Locations



3. Project Goals, Objectives, and Scope

1. To develop High Level Current and Future State Models and Ideal Current and Future State Process Maps for the following processes:

    a. Wash Bay Vehicle Cleaning and Disinfection
    b. Vehicle Servicing Repairs and Scheduled Maintenance
    c. Vehicle Servicing Parts Replenishment
    d. Vehicle Servicing Commissioning and Decommissioning
    e. Supplies and Logistics

f. Quarter Master
g. Pharmaceuticals and Narcotics
h. Monitors Inspection and Repair
i. Equipment Maintenance
j. Deployment
k. Kitting

2. Development of HR Staffing Models for Current State and, under new process assumptions, Future State Staffing Models for all Fleet Logistics staff assigned to the study processes.
3. To create 30-year Financial Models comparing a Current Facilities Model (CFM) to two Primary Hub scenarios.
4. Create 2 Primary Hub Financial Models: 1) Internal Capital Build Model (CBM) and 2) A 3rd Party Build-To-Suit Model (3-PLM) entering into a 30 year lease.
5. Project comparative 30 year cash flows of both Primary Hub scenarios.

In Scope:

- All Fleet Logistics staff, Facilities and Bases directly affected by creation of new Primary Hub including:

a) Glendale HQ
b) Glendale Dispatch
c) Glendale Base
d) Fleet Centre
e) Ontario Street Base
f) Ontario Street Training Centre

Out of Scope:

- Primary Hub location
- Secondary Hub (location, details, size, costs, etc.)
- Evaluation of bases not directly affected by new Primary Hub
- Staffing and Facilities not directly affected by a new Primary Hub
- Relocation of current Bases
- Inventory levels to support current and future states

4. Approach and Methodology

CLARICO employed the following approach and tools to capture and evaluate the Current State:

- Previous Studies and Document Review (Niagara Region, Province of Ontario, Consultant Reports)

- Data mining of financial information, facility and lease contracts, call center data, and other in use systems
- Identification of Processes to be included in the study
- Interviews/workshops with all Fleet Logistics staff
- Development of Current State SIPOC (Supplier, Input, Process, Output, Customer) process maps, documenting issues
- Development of Future State SIPOC process maps (considering future state process change assumptions)
- Development of a Current Facilities and Future State Primary Hub Staffing Models, including the influence of the Primary Hub operational change assumptions
- Develop three 30 year financial Models comparing cash flows for: 1) Current Facility Model, 2) Build New Primary Hub – Internal Capital Build Investment, and 3) 3rd Party Design Build Finance – Long Term (30 year) Lease
- Create a Draft, and subsequent Final Report

5. Current State Functional Reviews

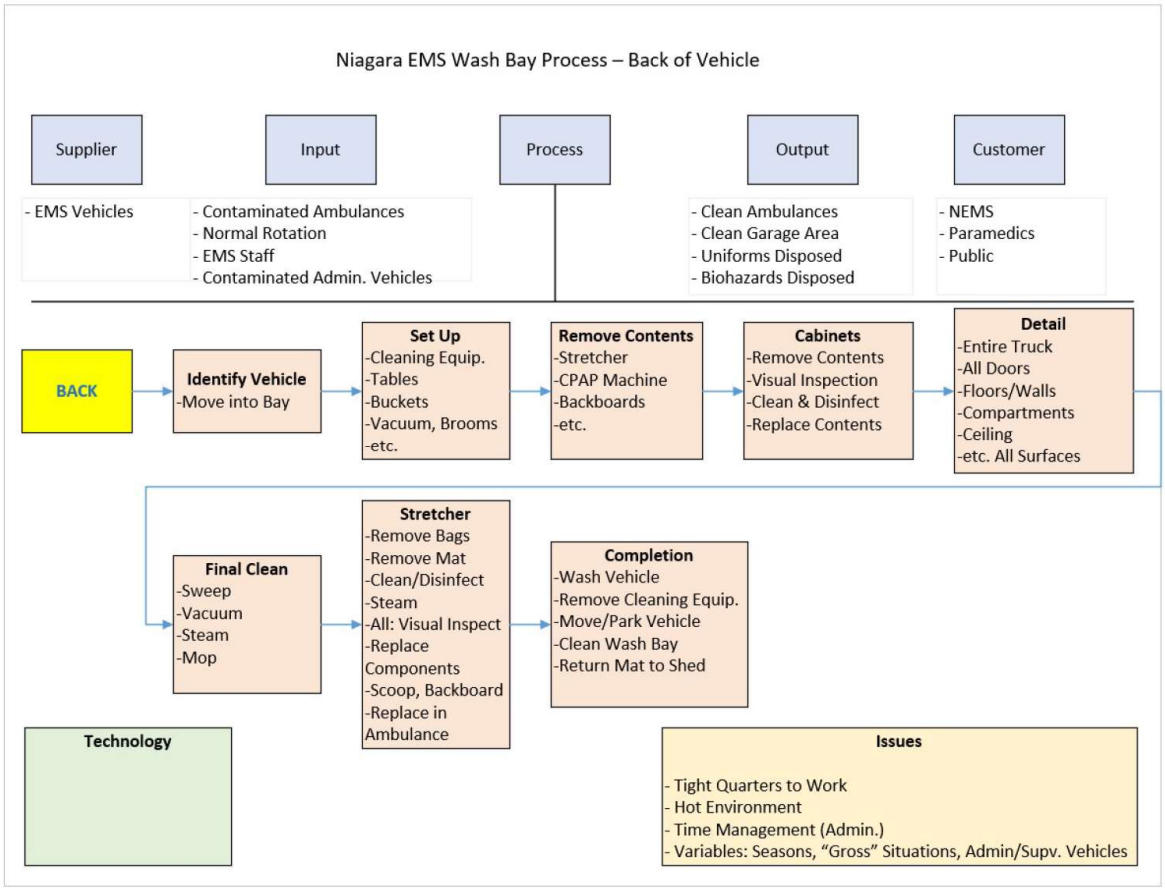
CLARICO conducted interviews and/or working sessions to assess the current Fleet Logistics processes that will be impacted by the new Primary Hub. The results of these sessions helped to create the current detailed SIPOC process maps; identify issues that may improve current functionality and set the framework for the next step: Staffing Models to identify the optimum FTE (Full Time Equivalent) requirement. The results of the Current State Functional Reviews follow:

Wash Bay Process – Rear of Vehicle

Responsibilities:

This team is responsible for disinfection of the entire vehicle. That function entails removal of all equipment, including the stretcher, CPAP Machine, backboards etc. Responsibilities also include removal of all equipment and supplies from the cabinets. The vehicle is completely cleaned and disinfected. Subsequently, all equipment and supplies are retuned to the vehicle.

SIPOC Functions and Activities:



Identified Issues:

1. The operators report very tight quarters in which to work. This seems inherent due to the inside dimensions of the vehicle.
2. While working inside the vehicle the conditions are very warm.

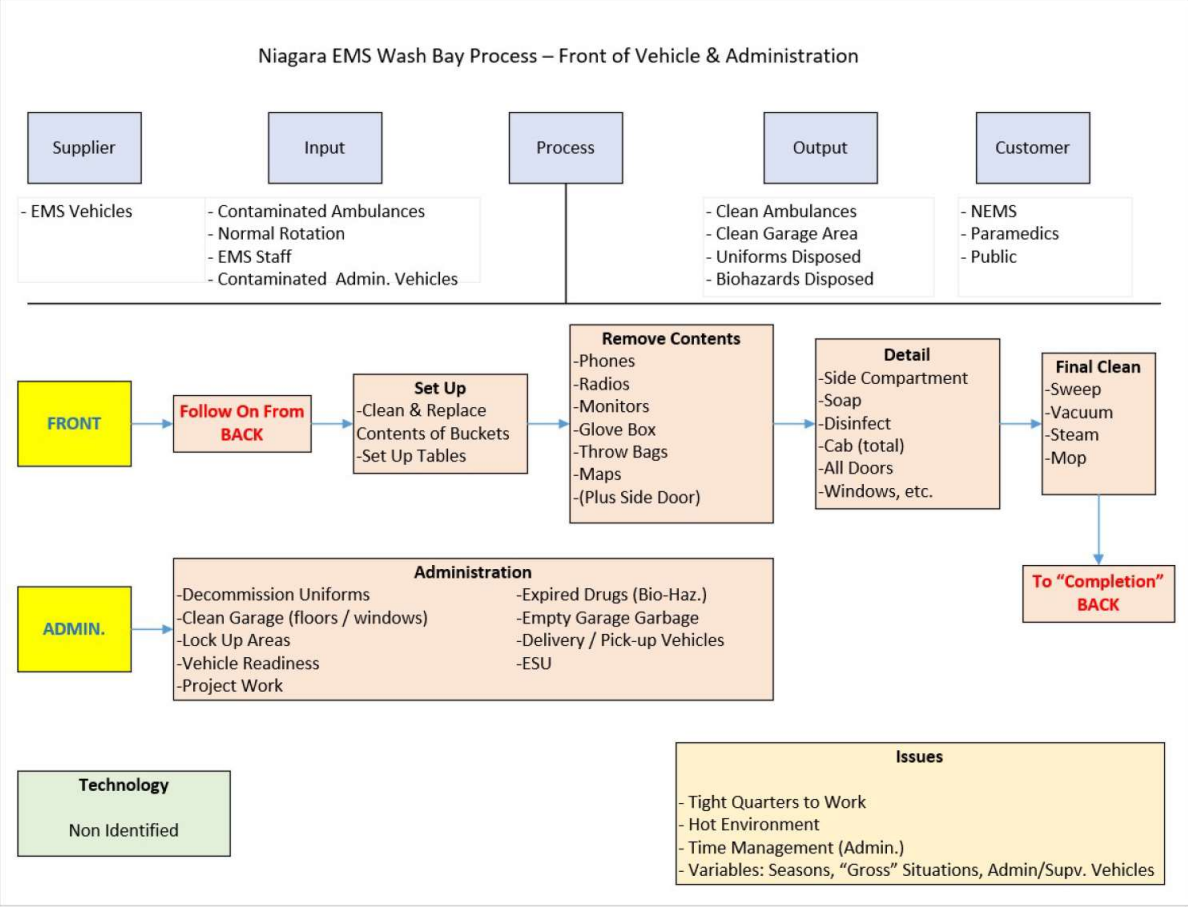
3. Some variables have an affect on the smooth performance of duties, such as: Seasonal (winter conditions), “Gross” situations resulting in lengthy, and precarious, cleaning. Also, the influx of Administration/Supervisory Vehicles.

Wash Bay Process – Front of Vehicle and Administration

Responsibilities:

Responsibilities include removal of all contents including: Phones, radios, monitors, throw bags, maps as well as the contents of the side door. The front of the vehicle is cleaned and disinfected, where subsequently all equipment previously removed is replaced.

SIPOC Functions and Activities:



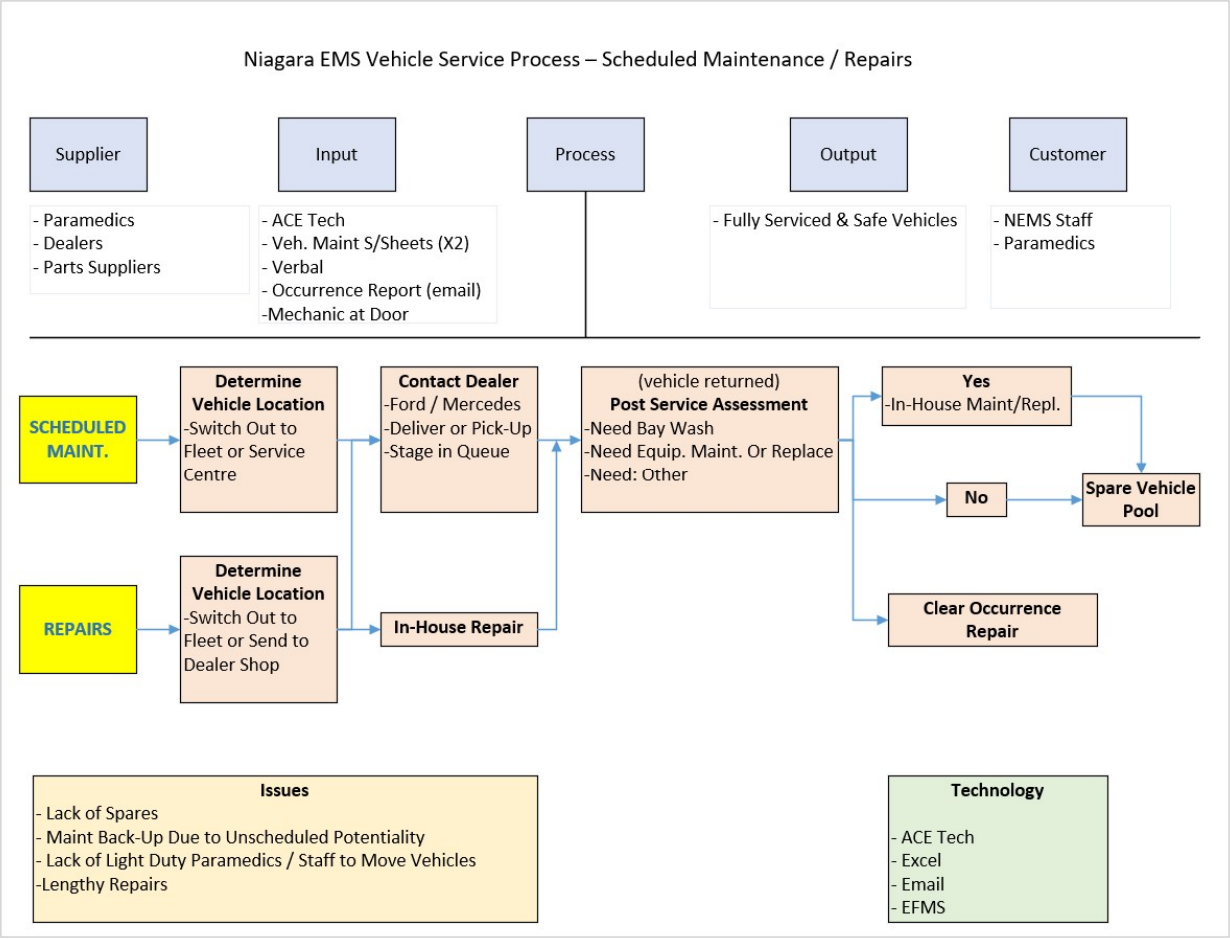
Identified Issues:

1. As reported previously, very tight quarters to conduct the work
2. Again, as in the rear of the vehicle, and inherent, the working conditions are very hot
3. As reported, seasonal conditions play a part in the time required to complete the work as well as periodical “Gross” clean up requirements

Vehicle Service - Repairs and Scheduled Maintenance

Responsibilities:

Responsibilities include: Assessing which vehicles are requiring service; switching out those vehicles with others ready for in-service; assessing where the vehicles should be serviced or repaired; Moving the vehicles to the appropriate 3rd. party service facility; completing those repairs or service requirements that should be completed in-house and conducting a post service assessment re equipment or other needs. **SIPOC Functions and Activities:**



Identified Issues:

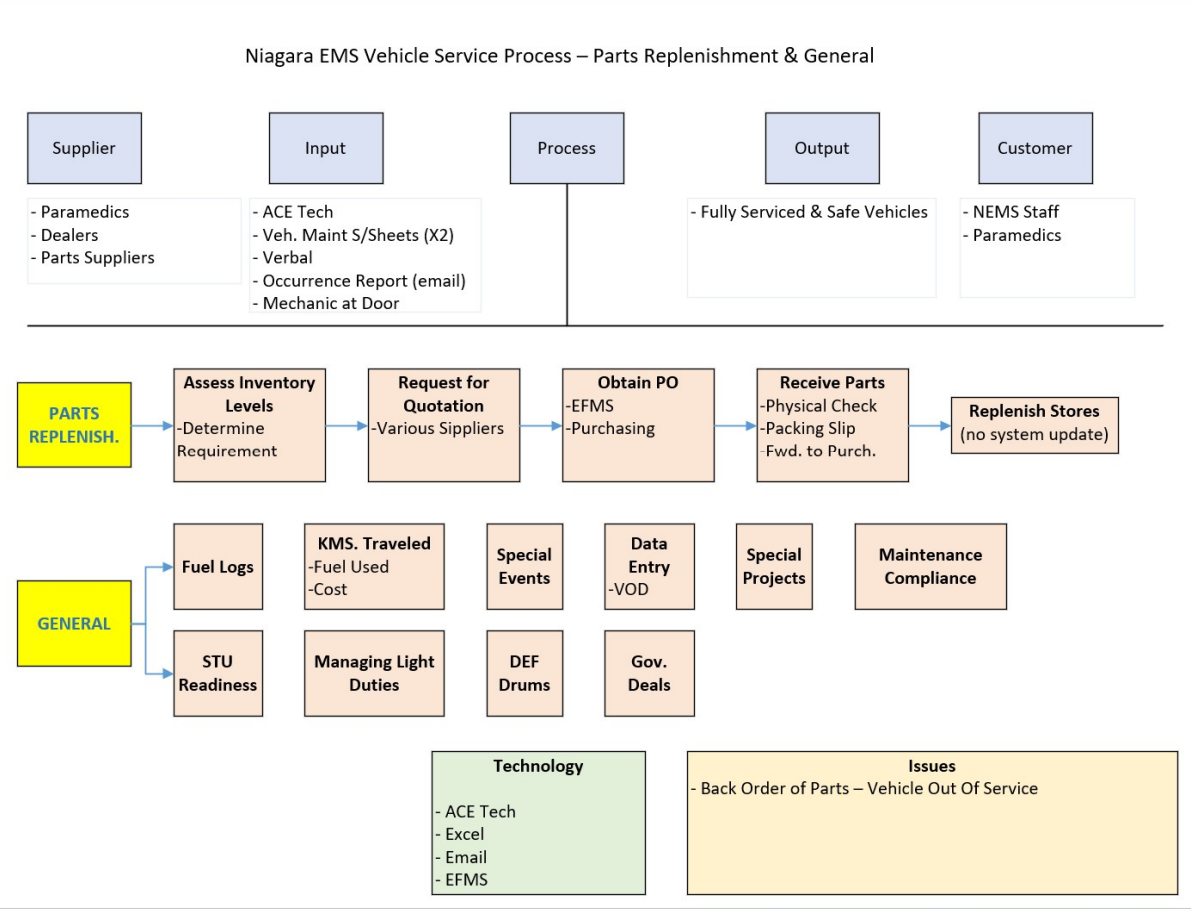
1. Back order of parts leaving the vehicle out of service
2. Lack of Spare Vehicles
3. Lack of Staff to Move Vehicles
4. Occasionally repairs are lengthy creating a shortage of assets

Vehicle Service – Parts Replenishment and General

Responsibilities:

Responsibilities include periodic assessment of inventory levels; placing requests for quotations from various suppliers; arranging the purchasing, receiving, and restocking of parts. Also, this function maintains Fuel Logs, Kilometer Travelled Logs, ensures STU Readiness, responds to Special Events and Special Projects. Other areas of responsibility include dealing with .gov, DEW drums, and overall, ensuring all vehicles are "Maintenance Compliant". ACE Tech is updated along with other various excel spread sheets.

SIPOC Functions and Activities:



Identified Issues:

1. When parts are on backorder, vehicles are out of service for a lengthy period

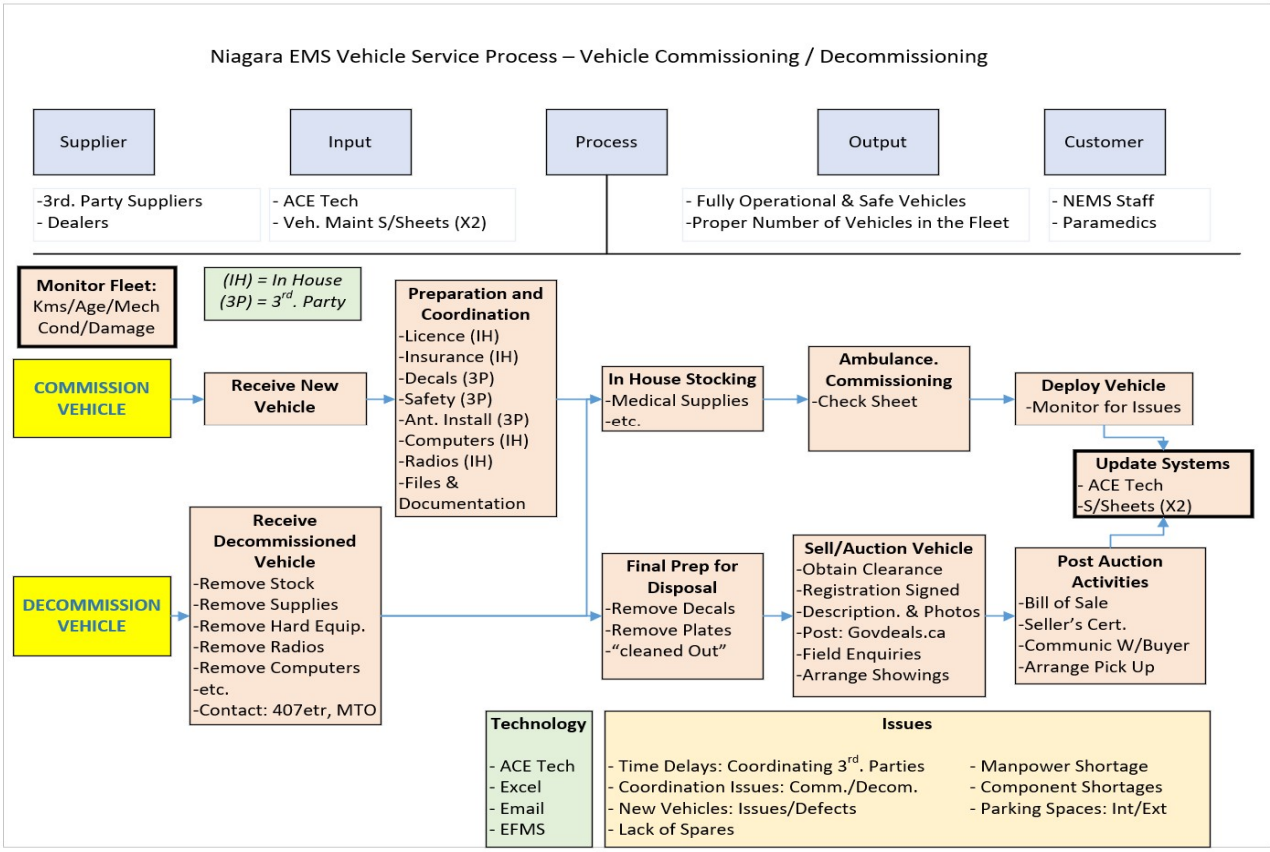
Vehicle Service – Commissioning and Decommissioning

Responsibilities:

In general, this function replaces aging vehicles with new replacements. After receiving the new vehicle, commissioning functions include all required preparation for use such as: Licencing and insurance; decals application; safety equipment; installation of antennas, computers, radio, and required files and documentation. Medical and other supplies and equipment are also installed. Prior to deployment, a "Commissioning Check sheet" is completed to ensure compliance.

Decommissioning is for the most part reversing the process with the removal of all equipment and supplies; removal of the licence plates and decals, and generally preparing the vehicle for sale at auction. Post sale activities are completed including updating ACE Tech and the various related excel spread sheets.

SIPOC Functions and Activities:



Identified Issues

1. Time delays occur when coordinating with 3rd. parties
2. It is reported there is a shortage of staffing
3. Occasionally there are component shortages

4. Parking spaces are limited, both internally and externally
5. Sometimes vehicles are received with issues and/or defect

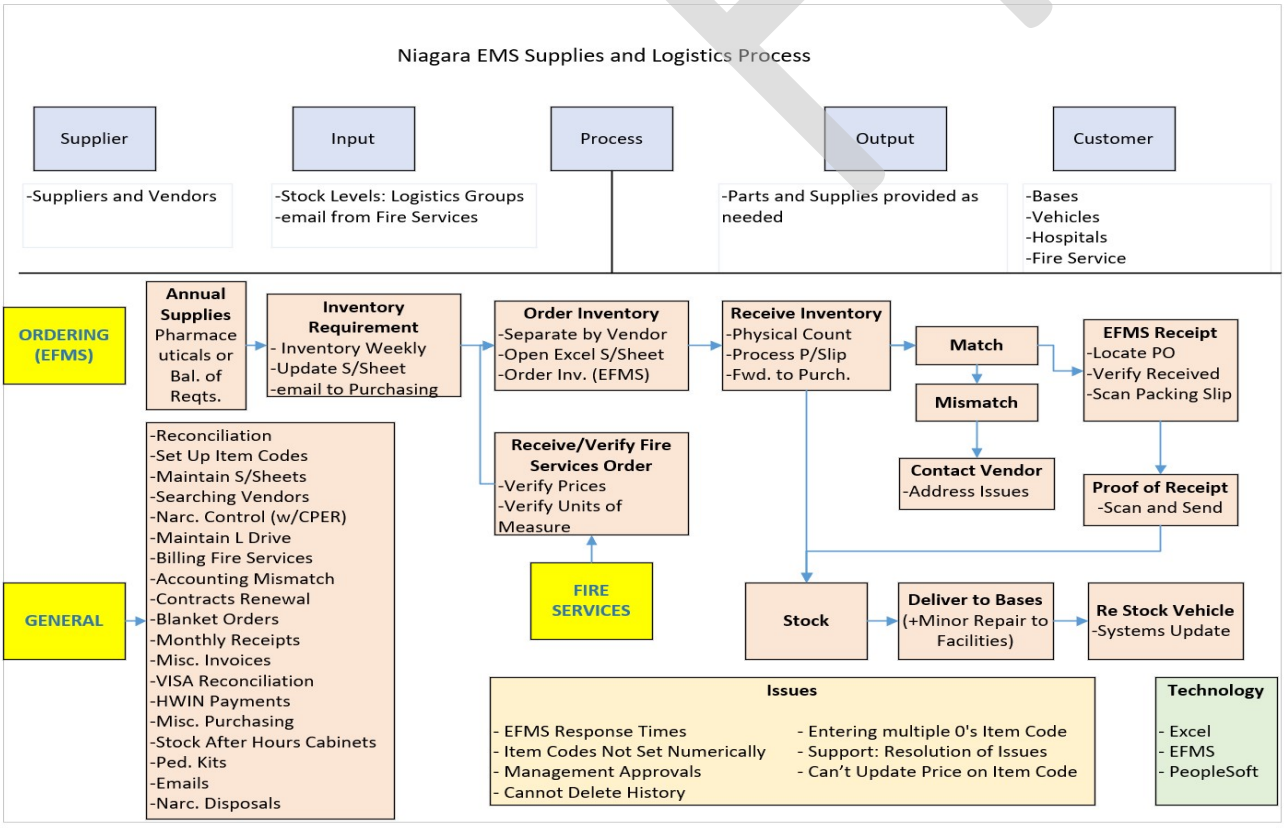
Supplies and Logistics

Responsibilities:

This function is responsible for all purchasing of Supplies and Equipment. Responsibilities include coordinating the annual supplies of pharmaceuticals; conducting weekly inventories and placing required replenishment orders; receiving and restocking of supplies; reconciliation of the orders and updating EFMS. This function is also responsible for all deliveries of supplies to the Bases.

This function also conducts a myriad (see SIPOC below) of other services related to acquisition, contracts, and financial policy requirements. Supplies and Logistics also look after the needs of Niagara Fire Services.

SIPOC Functions and Activities:



Identified Issues:

1. Slow EFMS response times
2. Item Codes are not set numerically
3. Management approvals take time

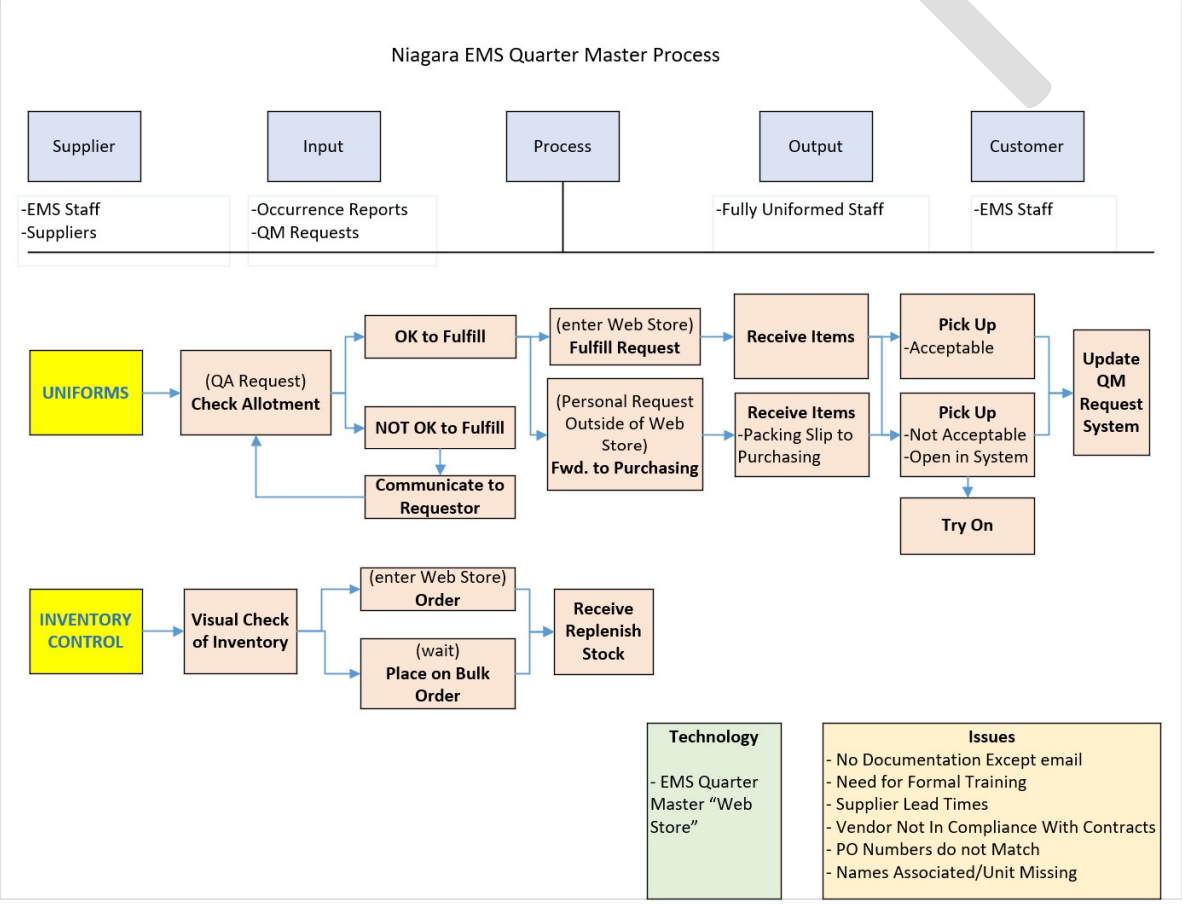
4. Entering multiple “0”s in Item Code is time consuming and prone to errors
5. EFMS support to resolve issues takes time
6. Can’t update the price on the Item Codes
7. Cannot delete history

Quarter Master (QM)

Responsibilities:

This function is responsible for the acquisition, inventory management and issuing of all uniforms and related peripheral clothing (e.g. hats) to NEMS staff. QM is also responsible for maintaining and updating the QM Request System.

SIPOC Functions and Activities:



Identified Issues:

1. Email is the only documentation for requests
2. Supplier lead times are lengthy in some cases. This would cause an increase of stock on hand to compensate

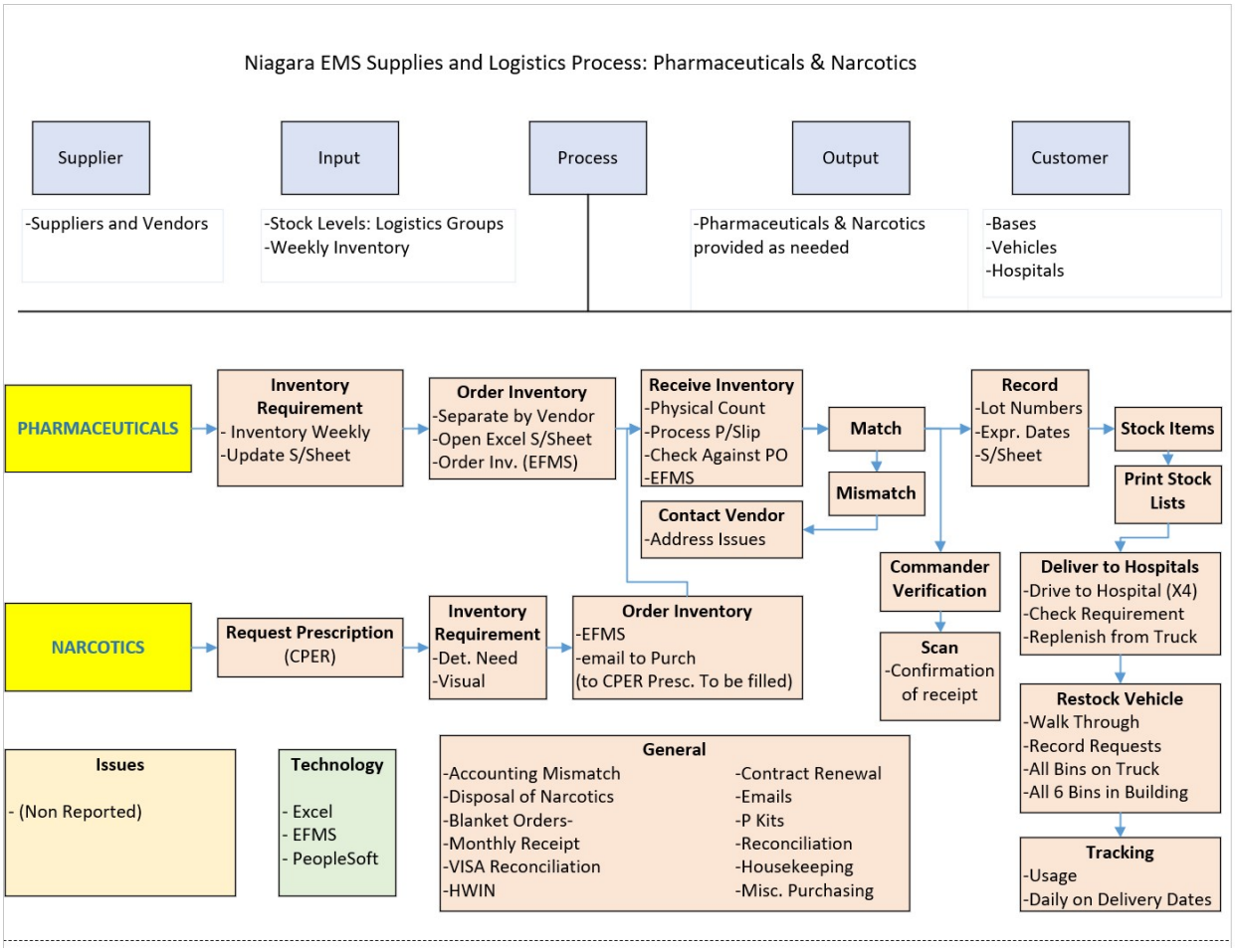
3. Sometimes vendors are not in compliance with the agreement or contracts
4. Occasionally PO numbers do not match
5. Names associated with the Unit are sometimes missing

Pharmaceuticals and Narcotics (P&N)

Responsibilities:

This function is responsible for coordinating the acquisition of all Pharmaceutical and Narcotics. These activities include inventory management, compliance to regulations, and the delivery of P&N to all regional hospitals.

SIPOC Functions and Activities:



Identified Issues:

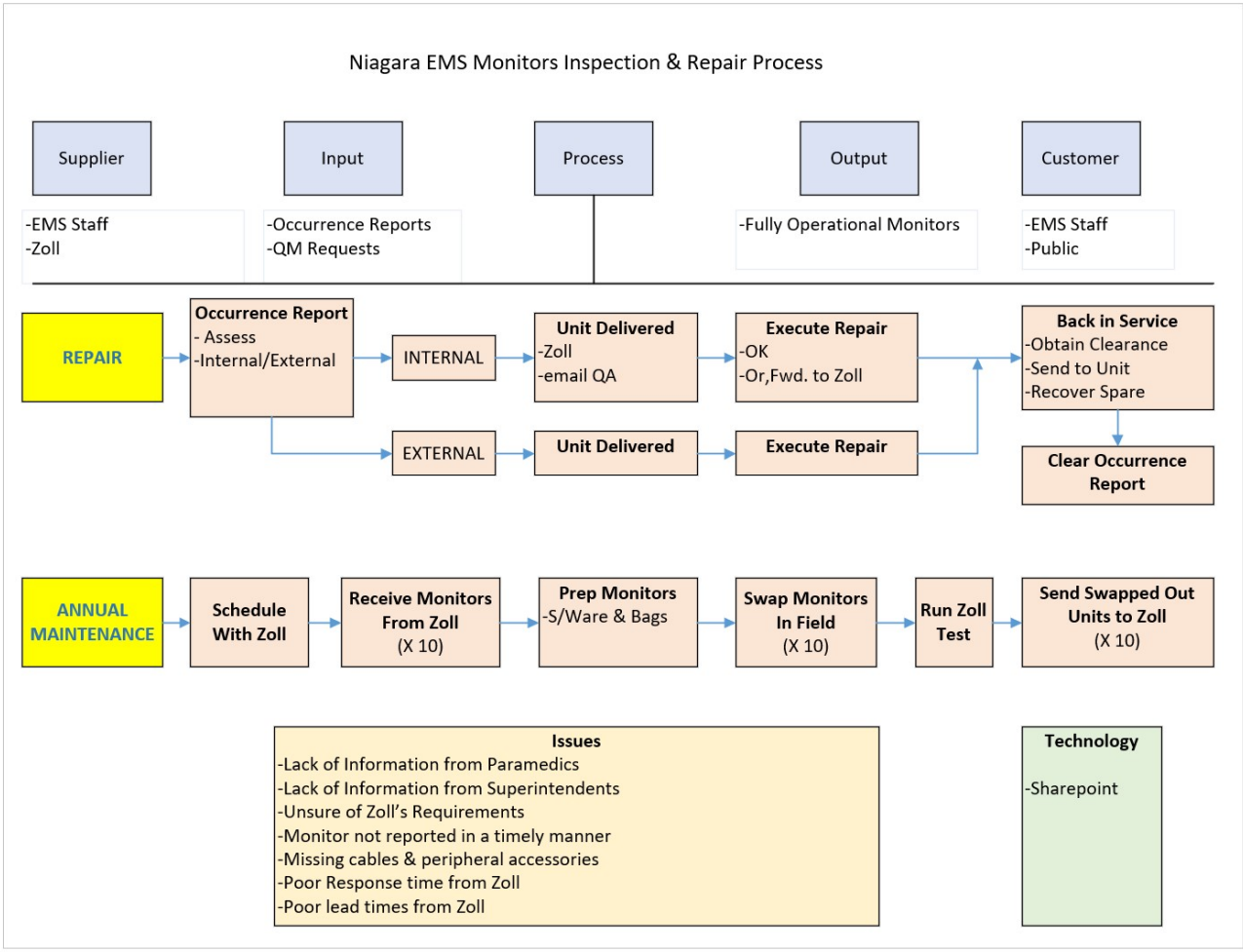
1. No issues where reported.

Monitors Inspection and Repair

Responsibilities:

This function is responsible for the Inspection, Maintenance and Repairs of the on-board Monitors. This includes responding to Occurrence Reports; interfacing with Zoll, the manufacturer; executing either 3rd. party or in-house repairs, and, in response the annual maintenance schedule, swapping the units in the field.

SIPOC Functions and Activities:



Identified Issues:

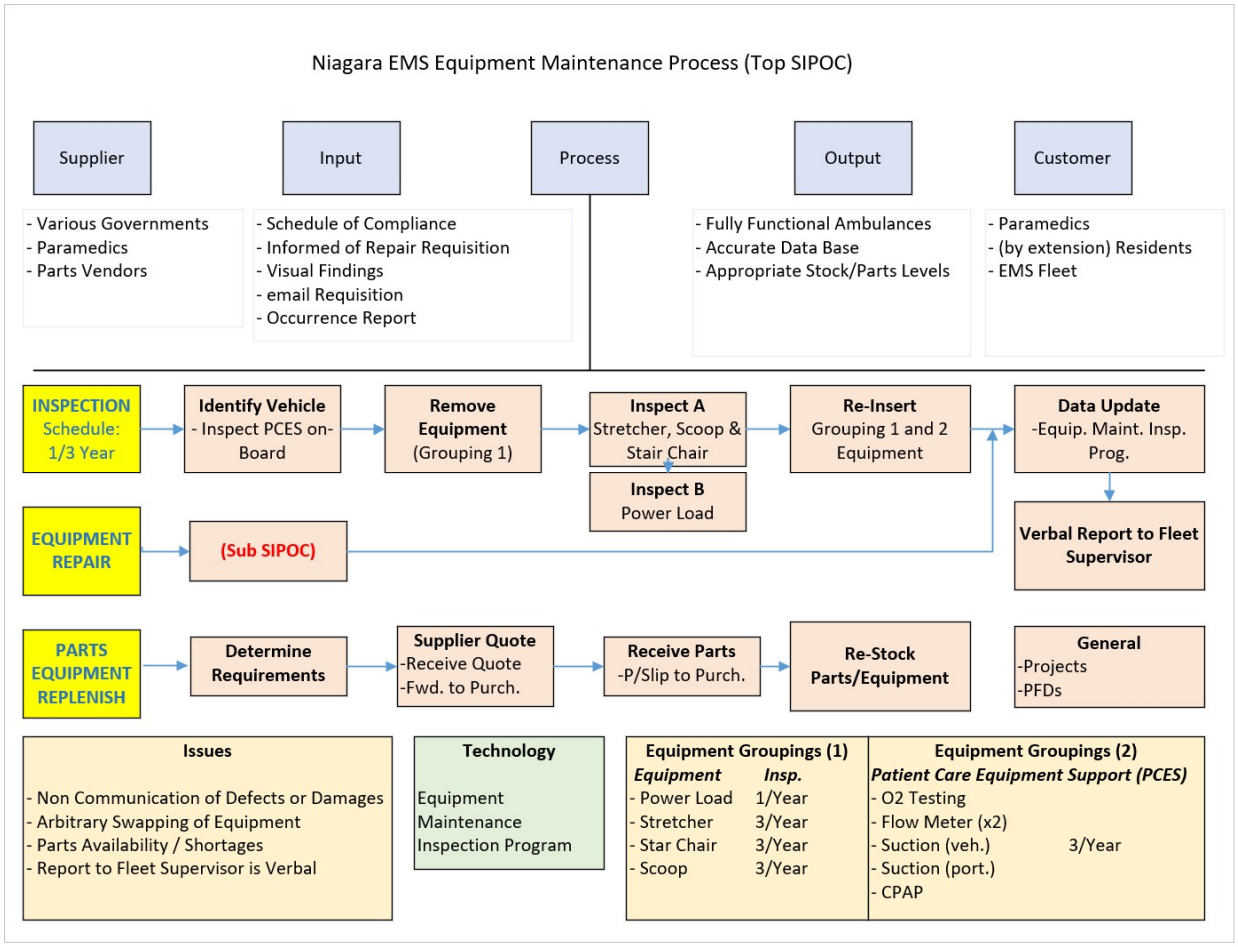
1. Lack of information regarding specific issues is forthcoming for Paramedics and Superintendents
2. Zoll's requirements are unclear; response times are poor, and lead times are lengthy
3. Monitor issues are not reported in a timely manner
4. Sometimes periphery accessories and cables are missing when the unit is retrieved or delivered

Equipment Maintenance

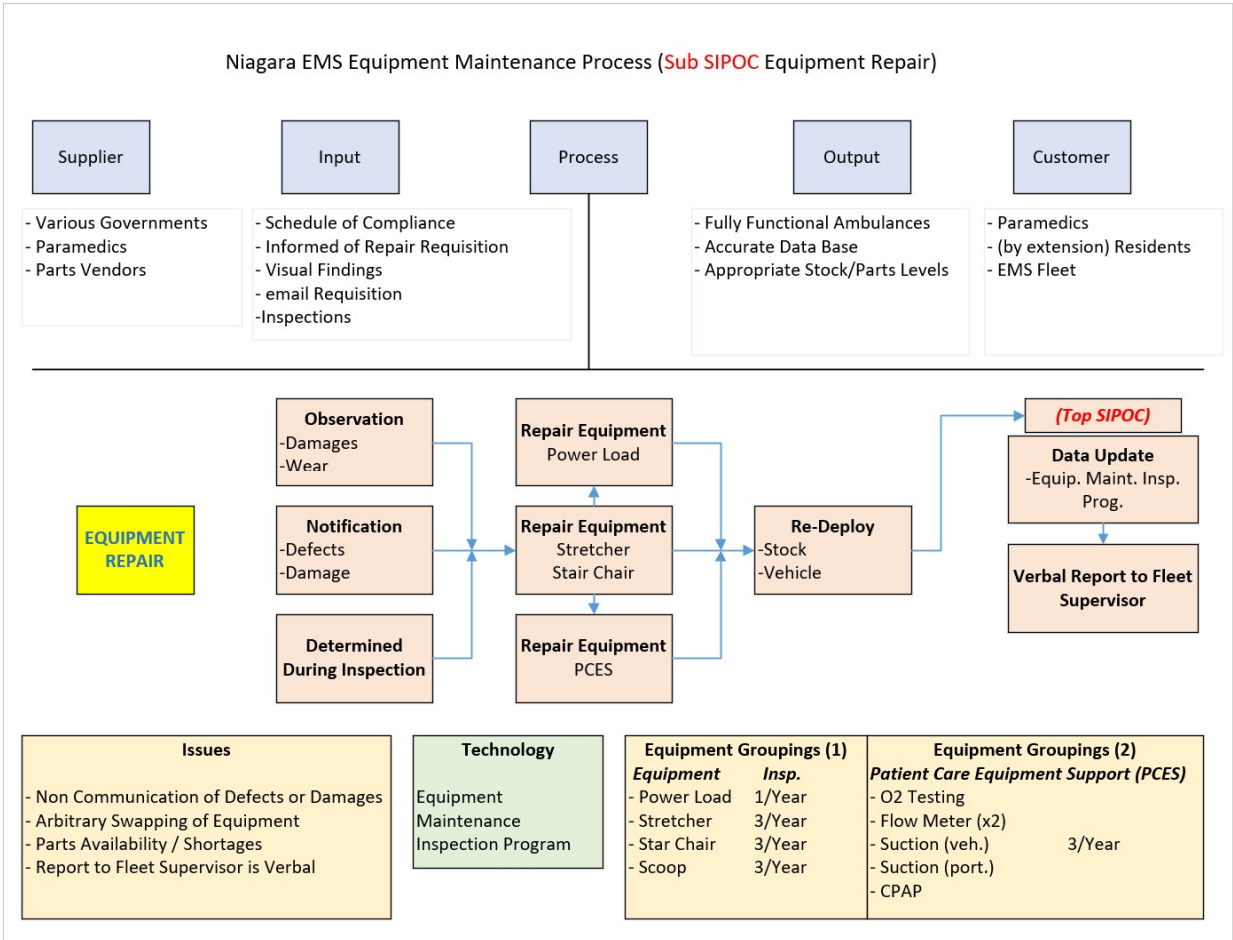
Responsibilities:

This function is responsible for the Inspection and Repair of all ambulance on-board equipment. This equipment includes the Power Load, the stretcher, the Stair Chair, the Scoop, and all patient care equipment support. This additional equipment includes Flow Meters, the two Suction Units, and the CPAP. As part of these activities, the oxygen bottles are tested and replaced, if necessary.

SIPOC Functions and Activities Top Level:



SIPOC Functions and Activities Sub Level - Repair:



Identified Issues:

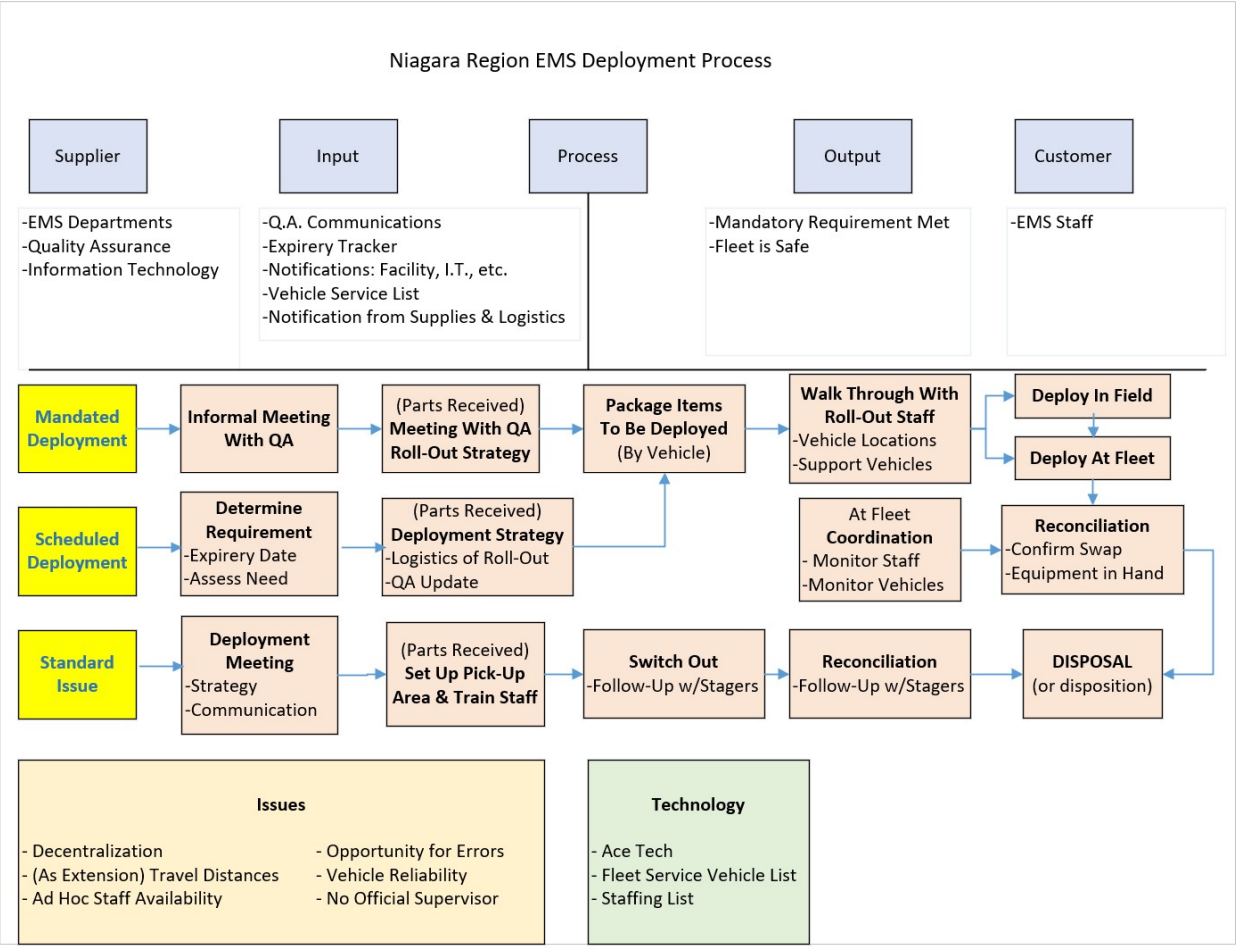
1. Communications are poor regarding the nature of defects or damages to this equipment
2. Control is lost when Paramedics arbitrarily swap equipment
3. Parts availability or shortages keep some equipment out of the field for a lengthy time.
4. No formal reporting method in relaying activities to the Fleet Supervisor

Deployment

Responsibilities:

This function is responsible for the Scheduled and Mandated deployment of new or to-be-replaced equipment or safety items (e.g. new helmets). Activities include interfacing with Quality Assurance; developing roll-out strategies; packaging items to be rolled-out; communications with applicable staff; coordination of swaps / pick-ups; reconciliation of activity completion, and final disposal of replaced items.

SIPOC Functions and Activities:



Identified Issues:

1. Travel distances are extensive
2. Staff (ad hoc) availability hampers effective and timely rollouts
3. The process allows for errors to occur
4. Vehicle reliability can be an issue
5. There is no official Supervisor for this function

6. Process Change Assumptions and Benefits of a Primary Hub Model:

Some Benefits of a Primary Hub Implementation

Several potential efficiencies could be achieved if a Primary Hub Model is successfully implemented:

1. At least 1 hour gained for paramedic to continue taking calls by limiting their time on the following non-direct call related activities:
    a. Vehicle Cleaning.
    b. Restocking (at beginning and during shift).
    c. Decontaminations (depending on severity).
    d. Vehicle refueling at public stations.
    e. Reduction in other logistics activities throughout shift.
2. Bulk Fuel purchase and refueling at Primary Hub (future consideration) at End of Shift. Purchasing bulk fuel typically garners savings from $0.03 to $0.10 per litre. In 2018, NEMS consumed 488,877 litres of fuel that could result in significant annual savings.
3. Increased Span-of-control for inventory management:
    a. Better use of purchasing capital i.e., more just in time inventory purchasing and fulfillment on a near daily basis as opposed to stocking multiple locations (bases)
    b. Dramatic reduction expiration of medications as stocks can be ordered just-in-time (as per above).
    c. More efficient movement of inventory through the supply chain
    d. Consistent kitting across all vehicles and location of kits in vehicles.
4. Increased quality and therefore lower costs in the mid and long term due to vehicle cleaning, use of inventory, decontamination, equipment preventative maintenance, and leverage of training programs suited specifically for logistics staff.
5. Decrease risk to patient care by having vehicles disinfected daily instead of Monthly. Paramedics are free to respond to calls with cleaned and fully supplied vehicles at the beginning of every shift.
6. Reduction in crew out of service time due to events of decontamination, vehicle breakdown, or instances that cause on board inventory to be relieved that approach minimum ministry standards. In a new Primary Hub model, the crew would simply return to the Primary Hub and immediately leave with an already prepped vehicle or quickly received kitted inventory and return to service when required.
7. Overtime and its effect on upcoming shifts (in current Base Model). Also translates into the ability of NEMS to respond to more calls, while maintaining UHA near planned levels.

8. Reduction of logistics staff time, travel, fuel, and effort to stock affected Bases across the region and reduce vehicle swap-outs for maintenance, repair, and deployment requirements.
9. Personal and direct communication up and down the chain of command improved due to daily parade at Primary Hub.

Process Change Assumptions Used in Development of the Future State SIPOCs

Since the location of the new Primary Hub is yet to be determined, some assumptions were required to accommodate the migration of Current State Fleet Logistics processes to a presumed Future State. Some of those assumptions are as follows:

- That the following bases were to be serviced out of the new Primary Hub:
  - Niagara Falls
  - Niagara-On-The-Lake
  - St. Paul Street Base
  - Thorold
  - Walnut
  - Ontario Street
  - Glendale
  - Linwell
  - Vineland
- That the following bases would remain as-is:
  - Grimsby
  - Smithville
  - Pelham
  - Abbey Road
  - King Street
  - Port Colborne
  - Ridgeway
  - Fort Erie
- That approximately 60% of the Fleet would be serviced through the new Primary Hub
- That 50 vehicles per day would be processed through the Hub for cleaning, inspection, and supplies restocking
- Additional fuel (daily rotation) would be offset by a reduction in off-service kilometers consumed

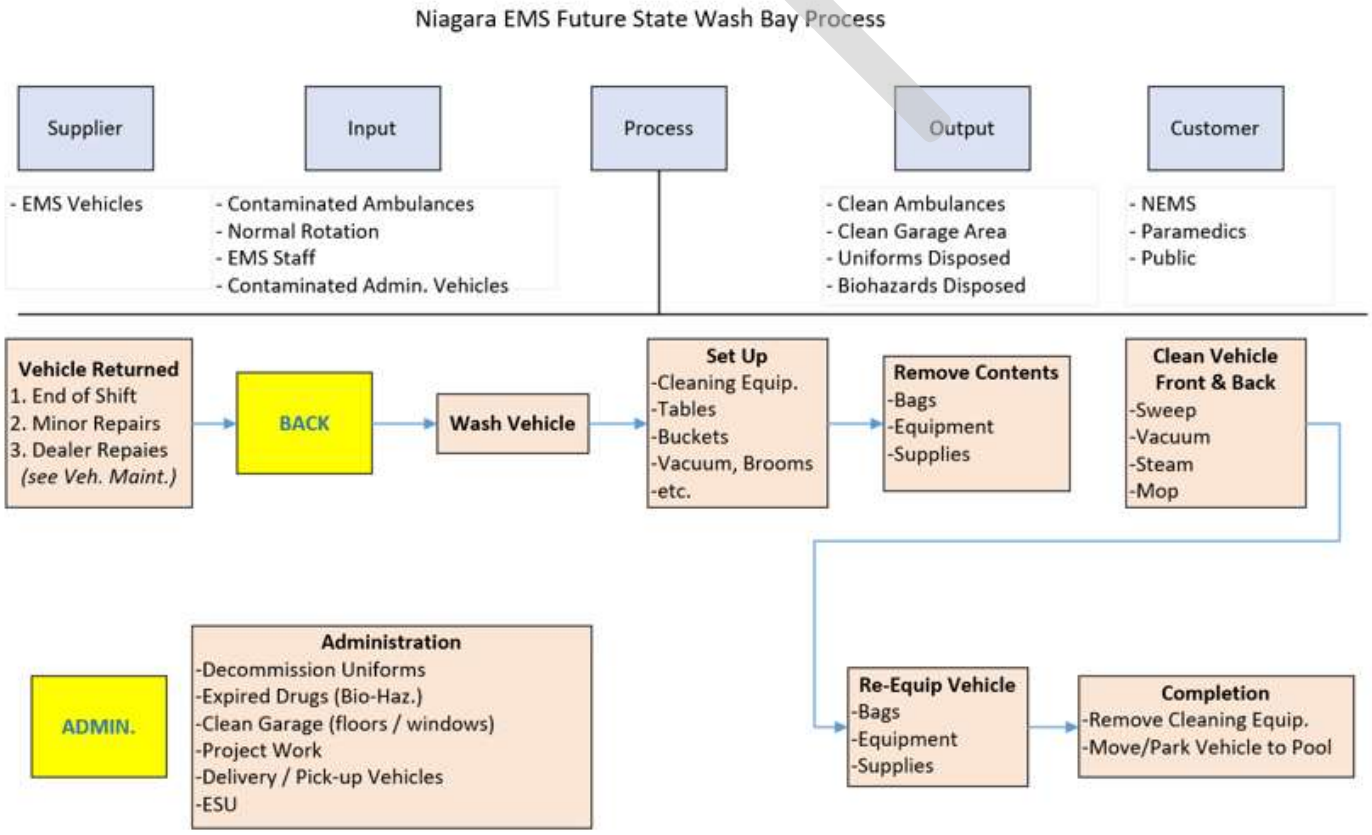
7. Future State Functional Reviews – Primary Hub Model:

Wash Bay Process

Changes from Current State:

1. The number of vehicles cleaned will change from 4 per week to 50 per day
2. All supplies and equipment removed will by placed in kit boxes to be picked up by Kitting staff
3. All supplies and equipment will be delivered in kits by Kitting staff to the wash bay area.
4. Thorough disinfection and detailing will only be performed when required
5. There will less (60%) swapping of vehicles by staff in the field (Bases)
6. Wash Bay staff will not be required to empty garbage, clean floors, or windows and lock-up the building
7. Full Time Equivalent staffing will change from 1 to 5.4 (See section – Staffing Models)

SIPOC Functions and Activities:

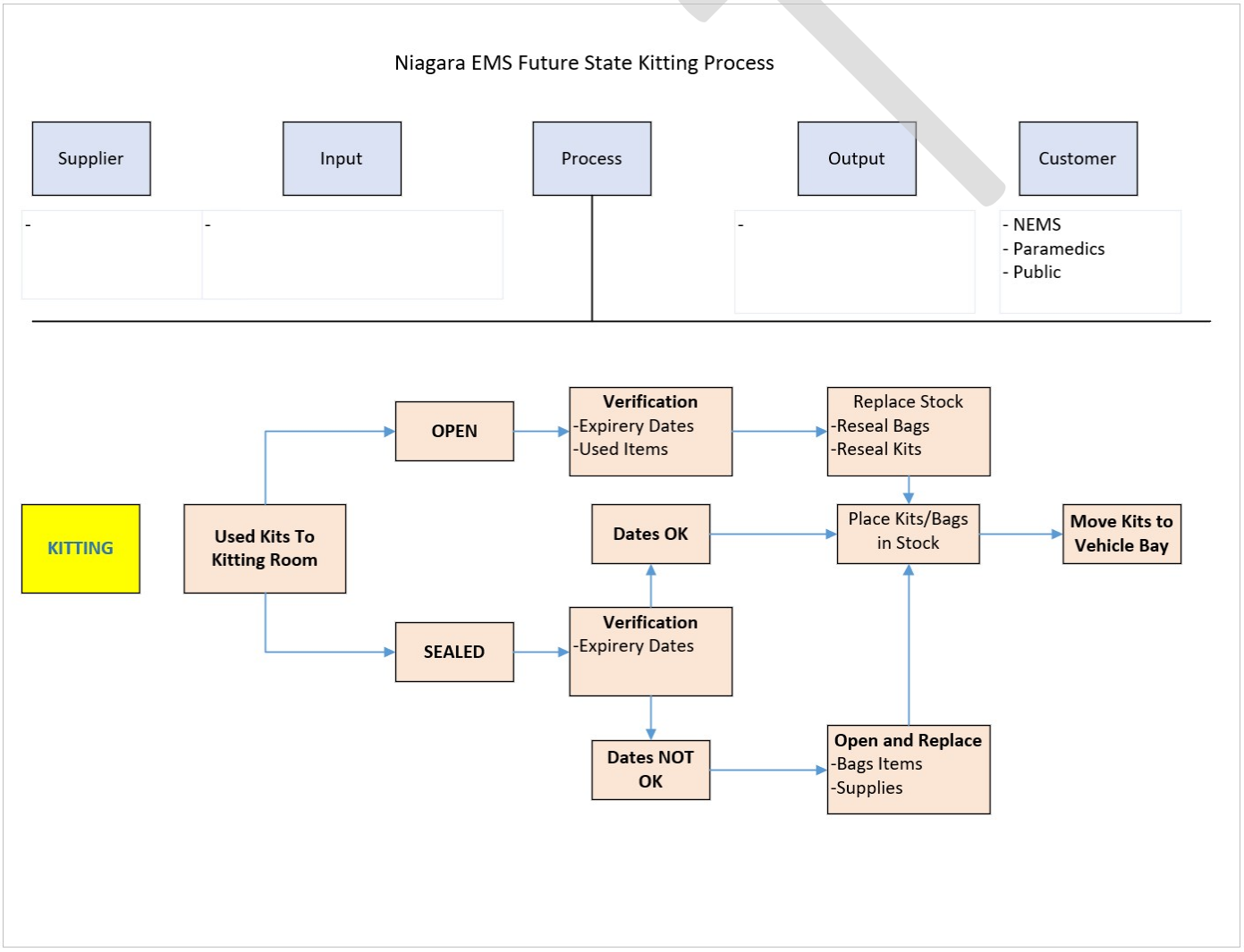


Kitting

Changes from Current State:

1. New function for Primary Hub Model
2. All equipment and supplies will be removed from vehicles by the wash bay staff and placed in empty kit boxes
3. Kitting will be performed off-floor by a new independent staff
4. All verification functions (expiry, used) will be performed by this staff
5. Kitting staff will move ready kits to the wash bay area
6. FTE requirements will be 2.7 (see Staffing Models)

SIPOC Functions and Activities:

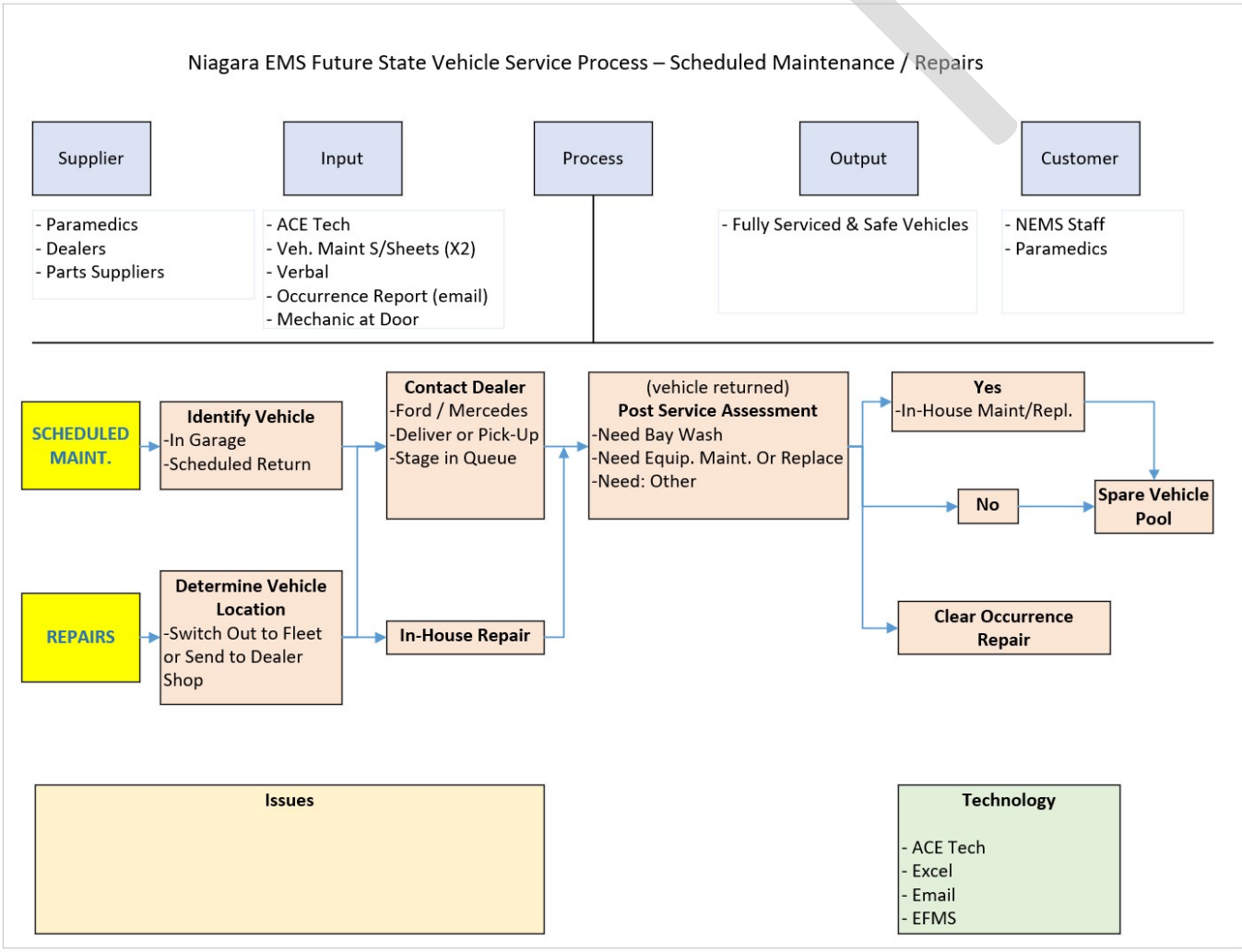


Vehicle Servicing Repairs and Scheduled Maintenance

Changes from Current State:

1. Reduction by 60% of in-field vehicle swaps. Most vehicles can be removed from active duty and replaced in house (Hub) and be back in active duty (returned to pool) immediately following service
2. Reduced Recurrence Reports
3. Centralized Inspection
4. Increased control of scheduled maintenance

SIPOC Functions and Activities:

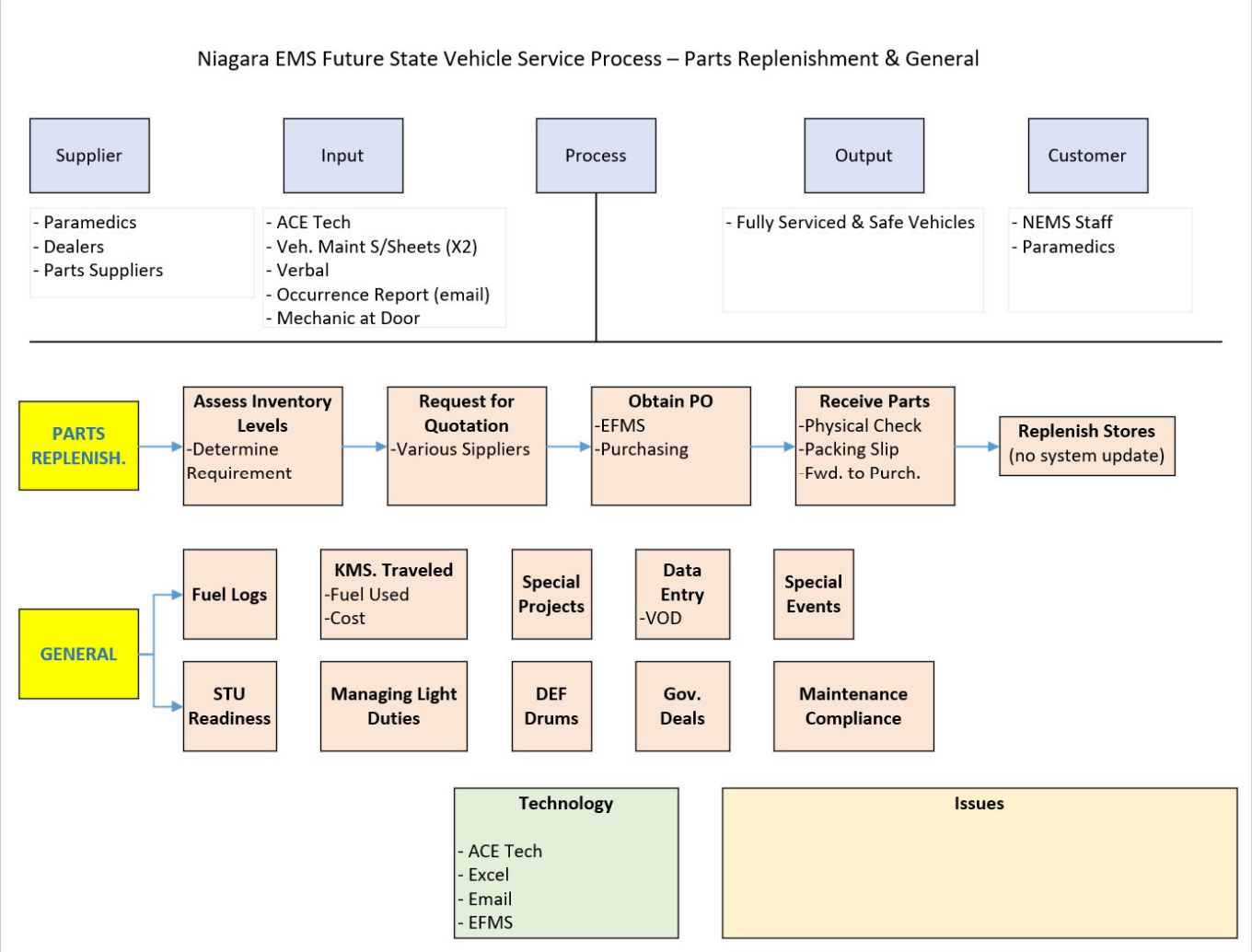


Vehicle Servicing Parts Replenishment

Changes from Current State:

1. Little change from Current State other that improved centralized control
2. Special Events and Projects will have improved deployment with a centralized vehicle selection

SIPOC Functions and Activities:

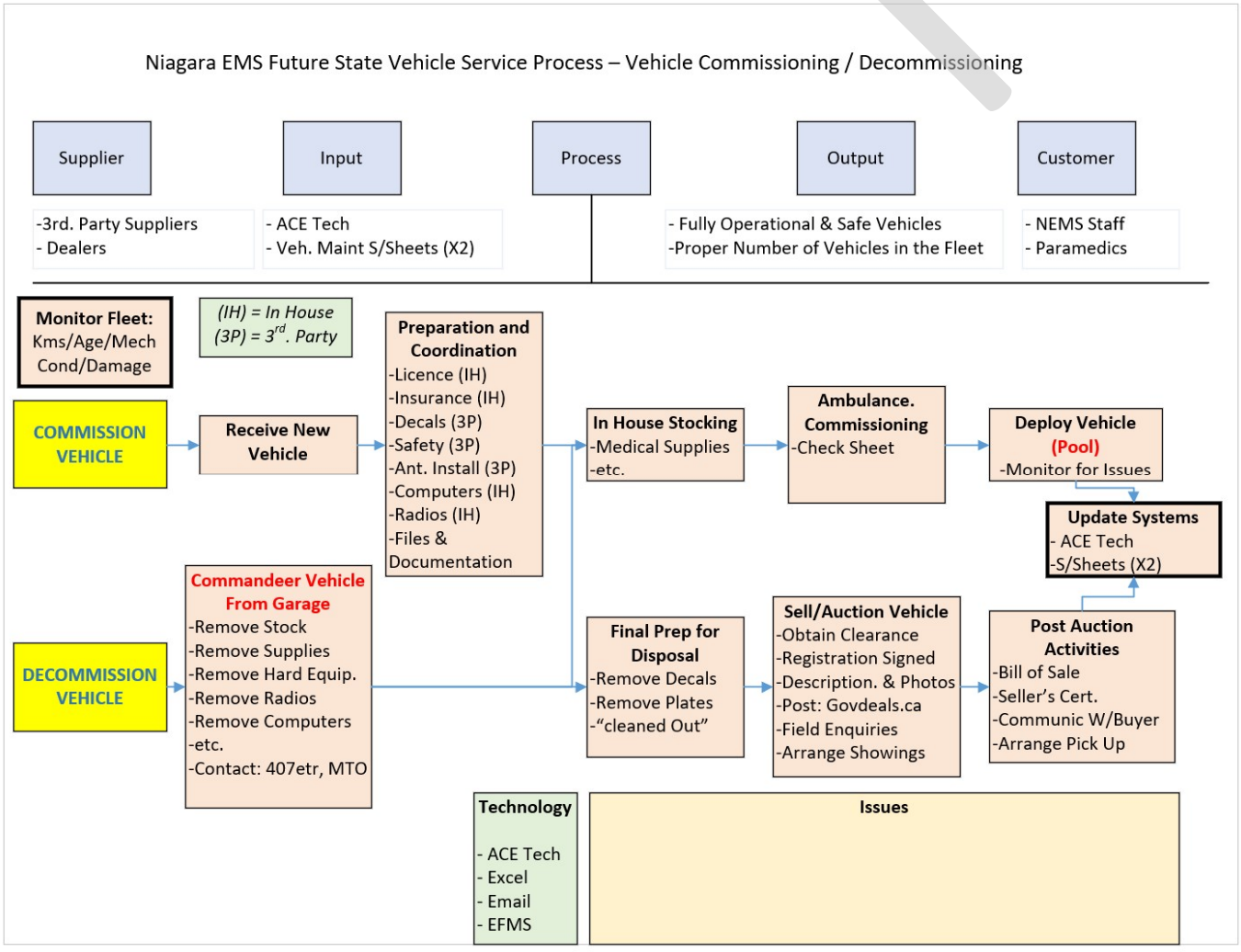


Vehicle Servicing Commissioning and Decommissioning (C&D)

Changes from Current State:

1. Most Commissioning and Decommissioning can be accomplished in-house (Hub) rather than locating vehicles in the field, swapping in the field, and deploying to bases.
2. Expect as 60% reduction in time and fuel used in C&D
3. Possible reduction in repairs and breakdowns on vehicles ready to retire
4. Reduction in time spent in locating vehicles for return and subsequently arranging for transportation to Fleet Logistics
5. Reduction in time spent in deployment as newly commissioned vehicles will be assigned to the Hub pool

SIPOC Functions and Activities:

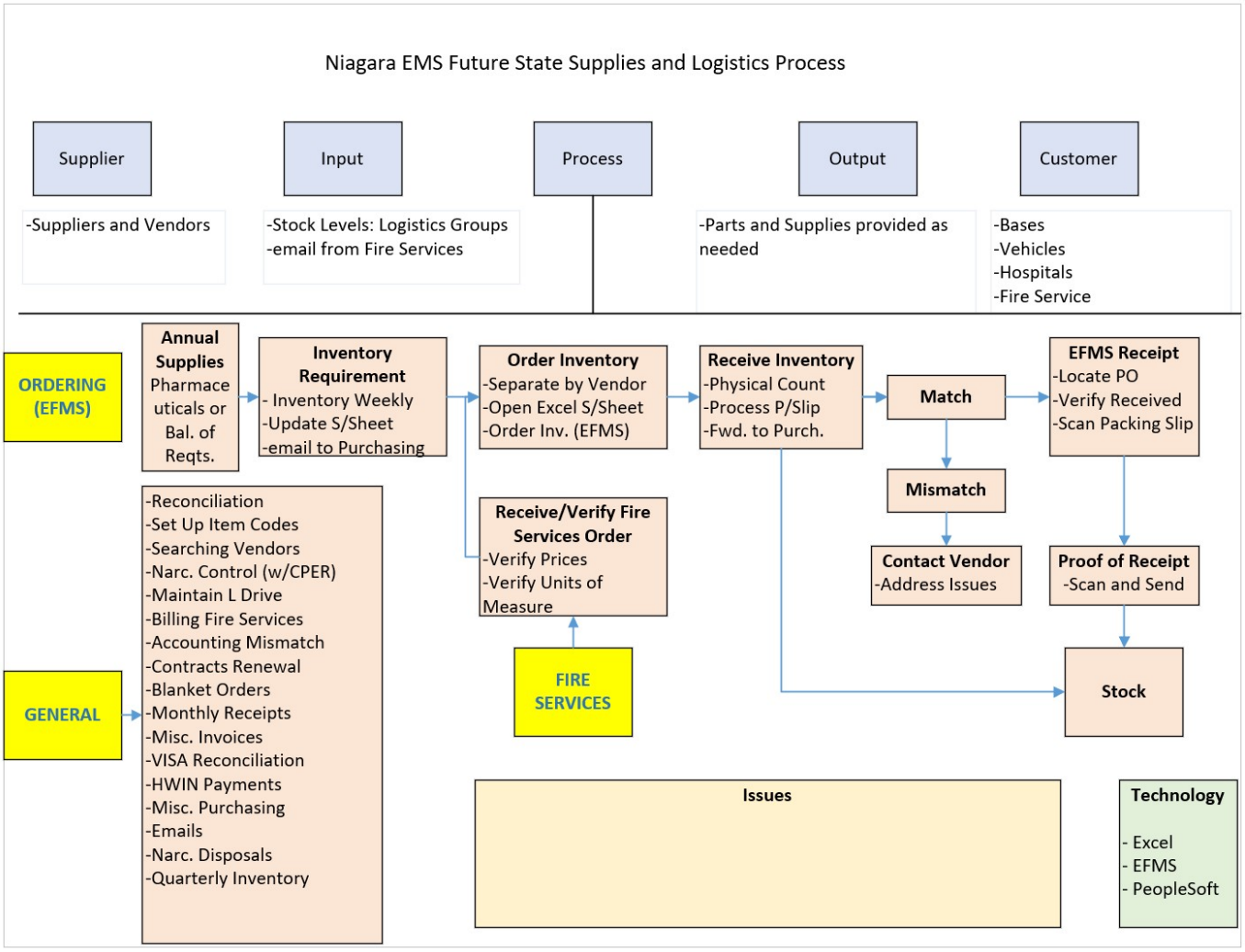


Supplies and Logistics

Changes from Current State:

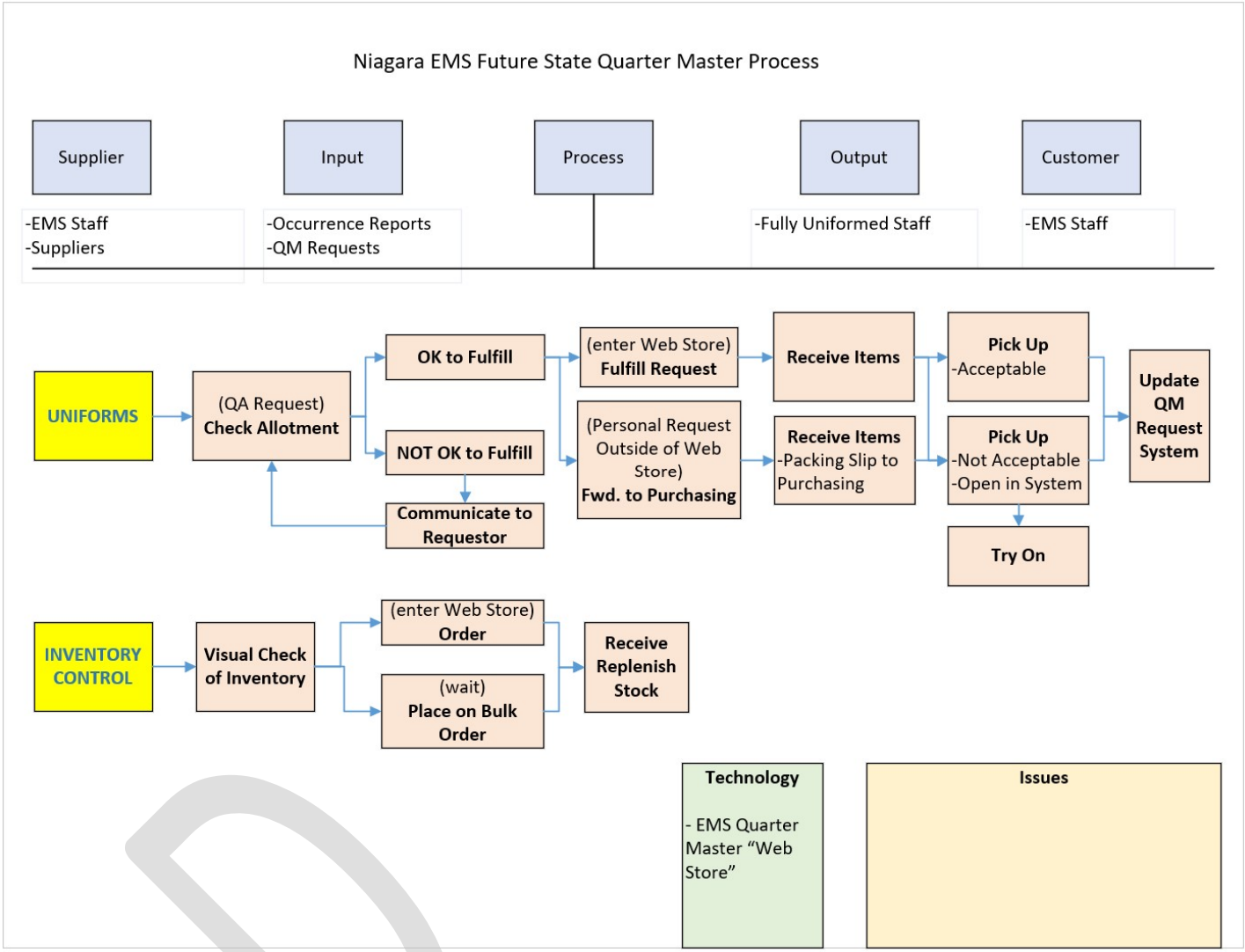
1. No major processes changes would be required for the Primary Hub Model

SIPOC Functions and Activities:



Quarter Master

Changes from Current State:

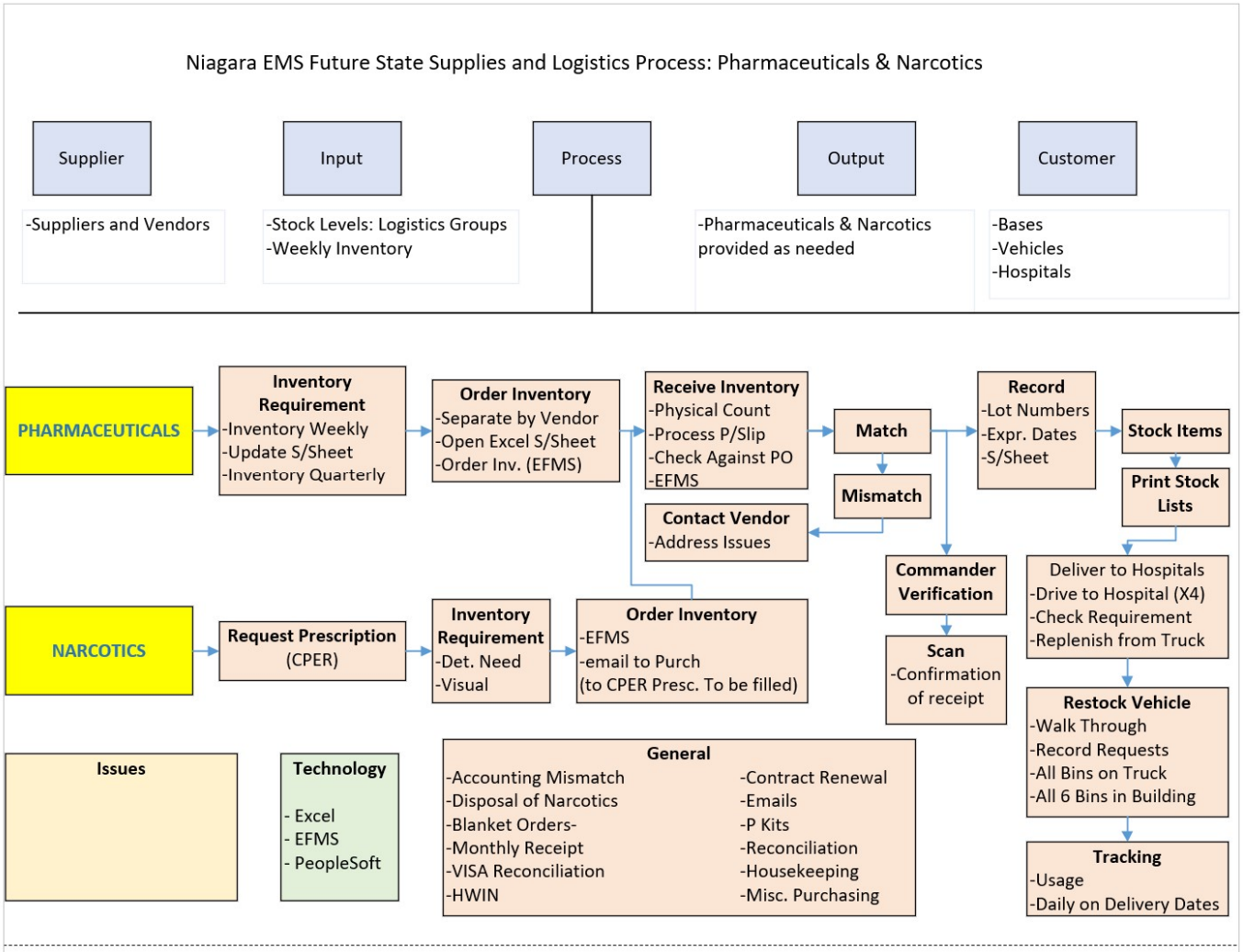


Pharmaceuticals and Narcotics

Changes from Current State:

1. Basically, there will be no process change under a Primary Hub Model. The hospitals will continue to be supplied as in the Current State.

SIPOC Functions and Activities:

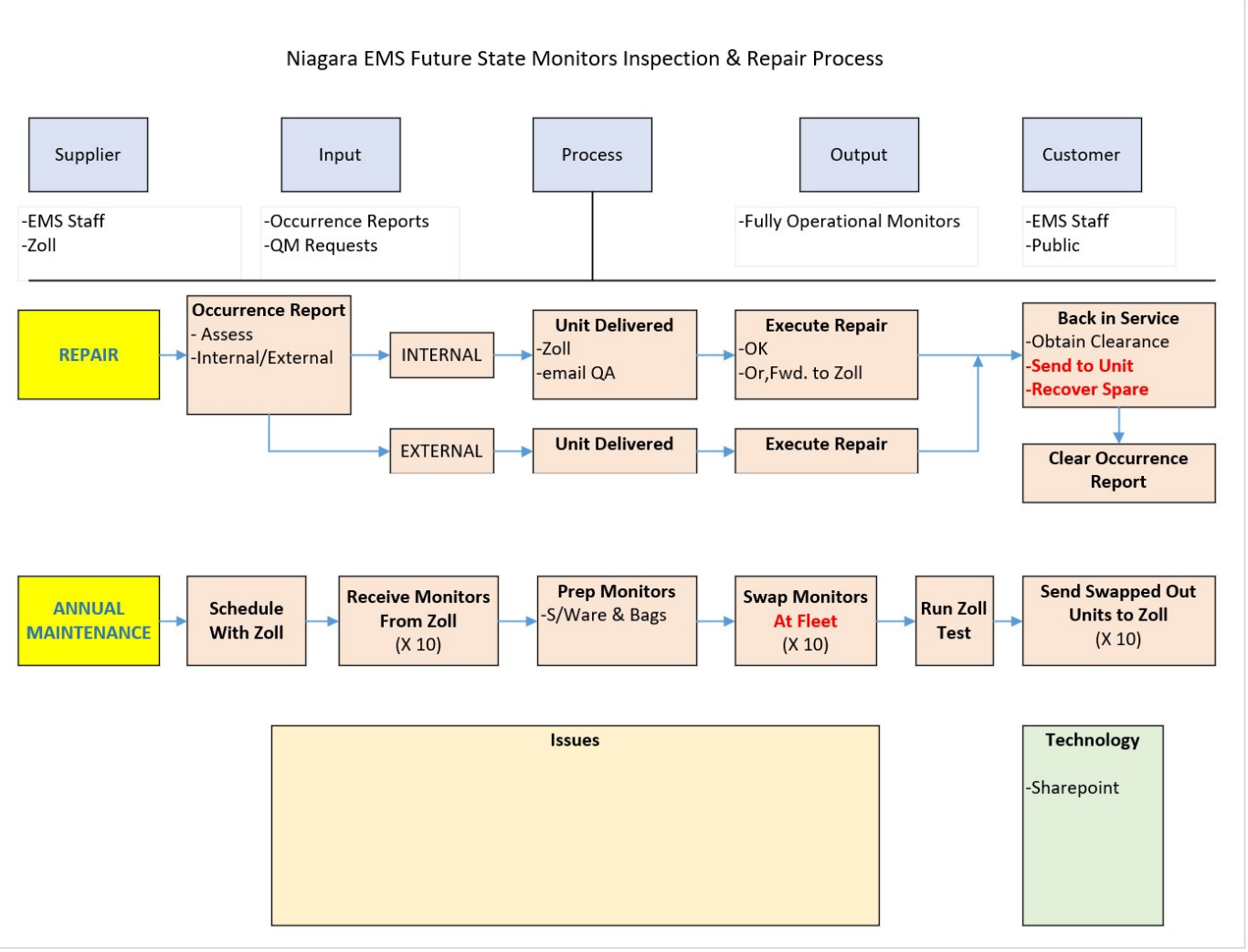


Monitors Inspection and Repair

Changes from Current State:

1. Reduction in time spent swapping Monitors.
2. Units requiring scheduled maintenance and repair can be retrieved and redeployed at Fleet

SIPOC Functions and Activities:

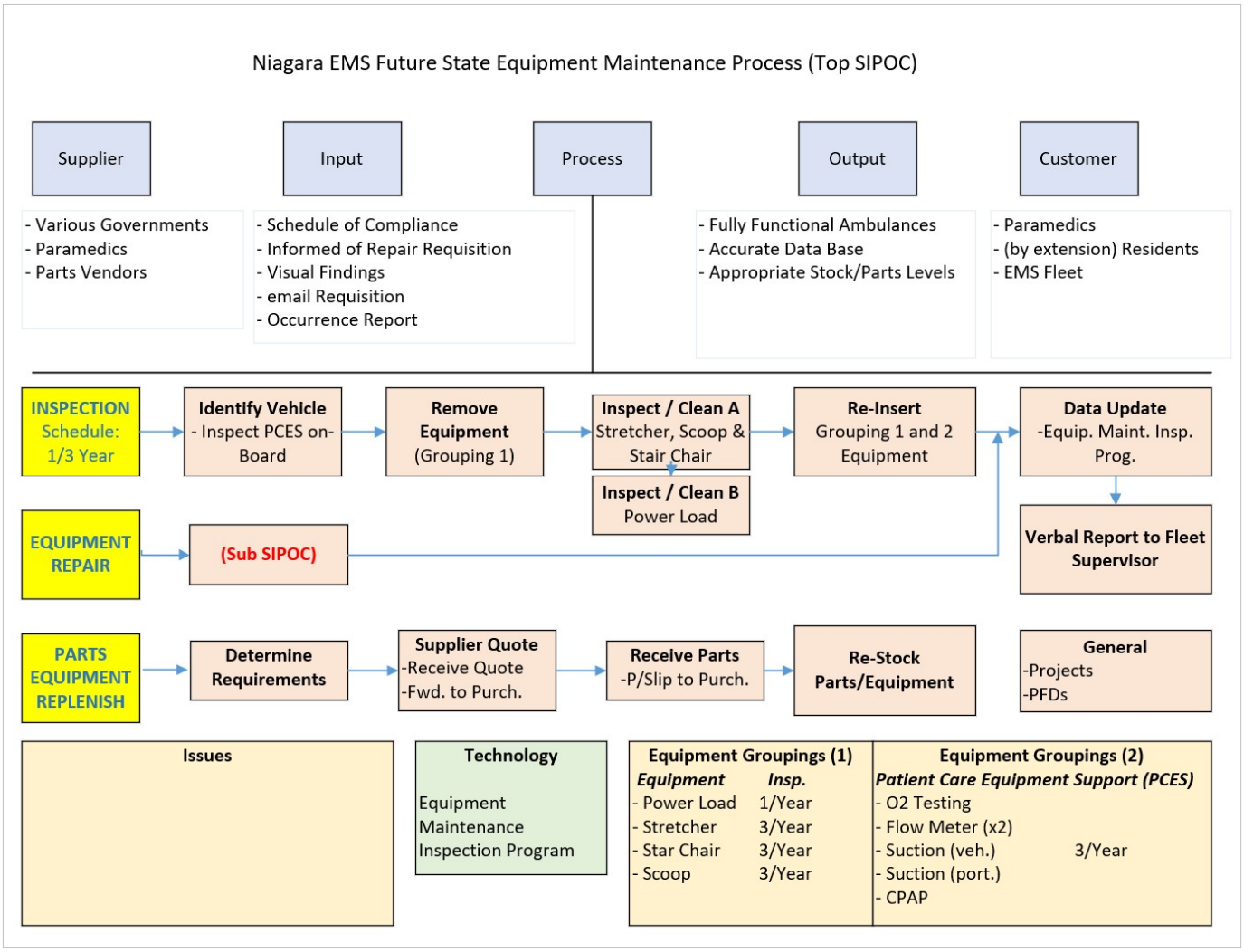


Equipment Maintenance

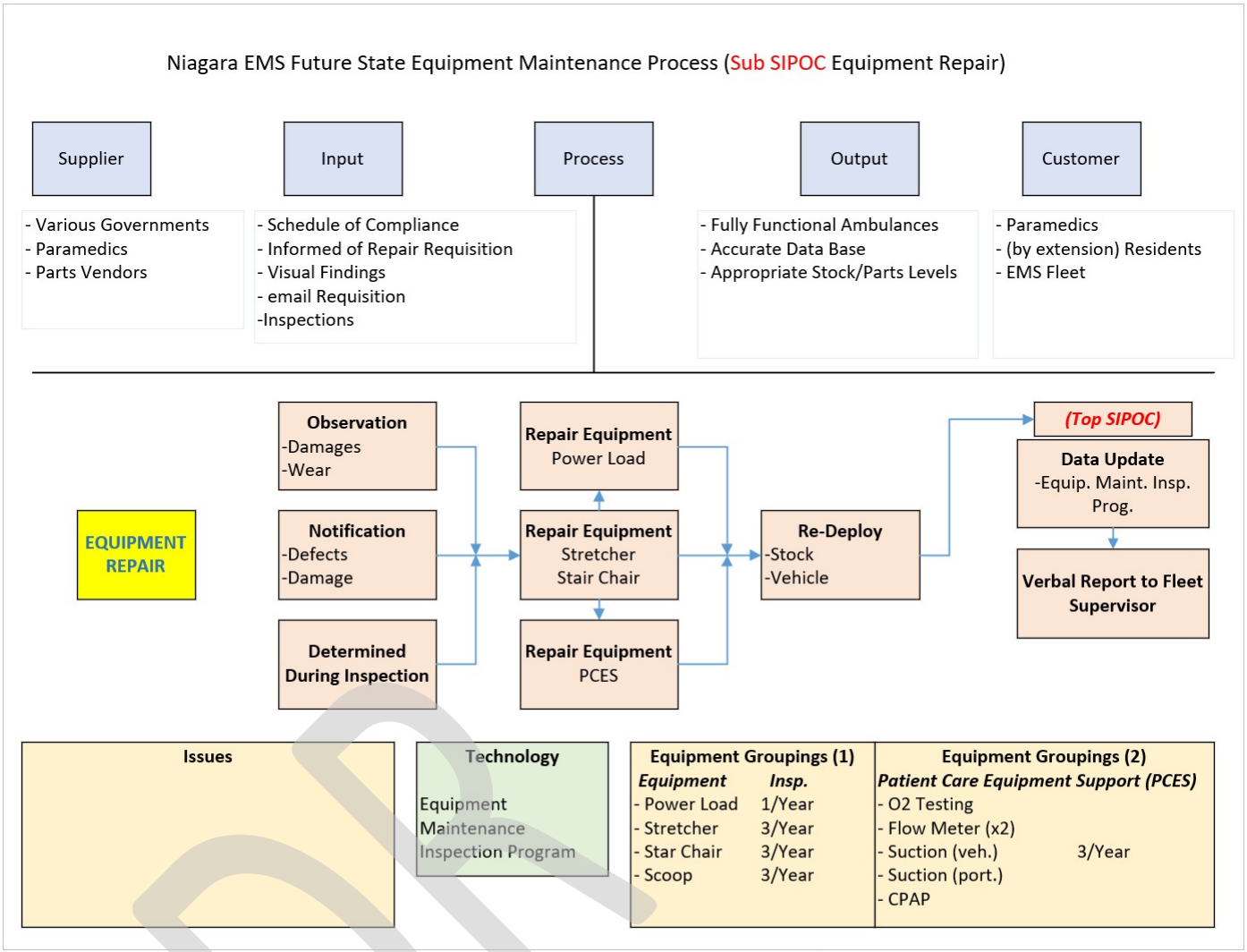
Changes from Current State:

1. There are no substantial changes from the Current State for this function. The SIPOCs have been retained in the Future State to remain integral to the Report.

SIPOC Functions and Activities – Top SIPOC:



Equipment Maintenance – Sub SIPOC:



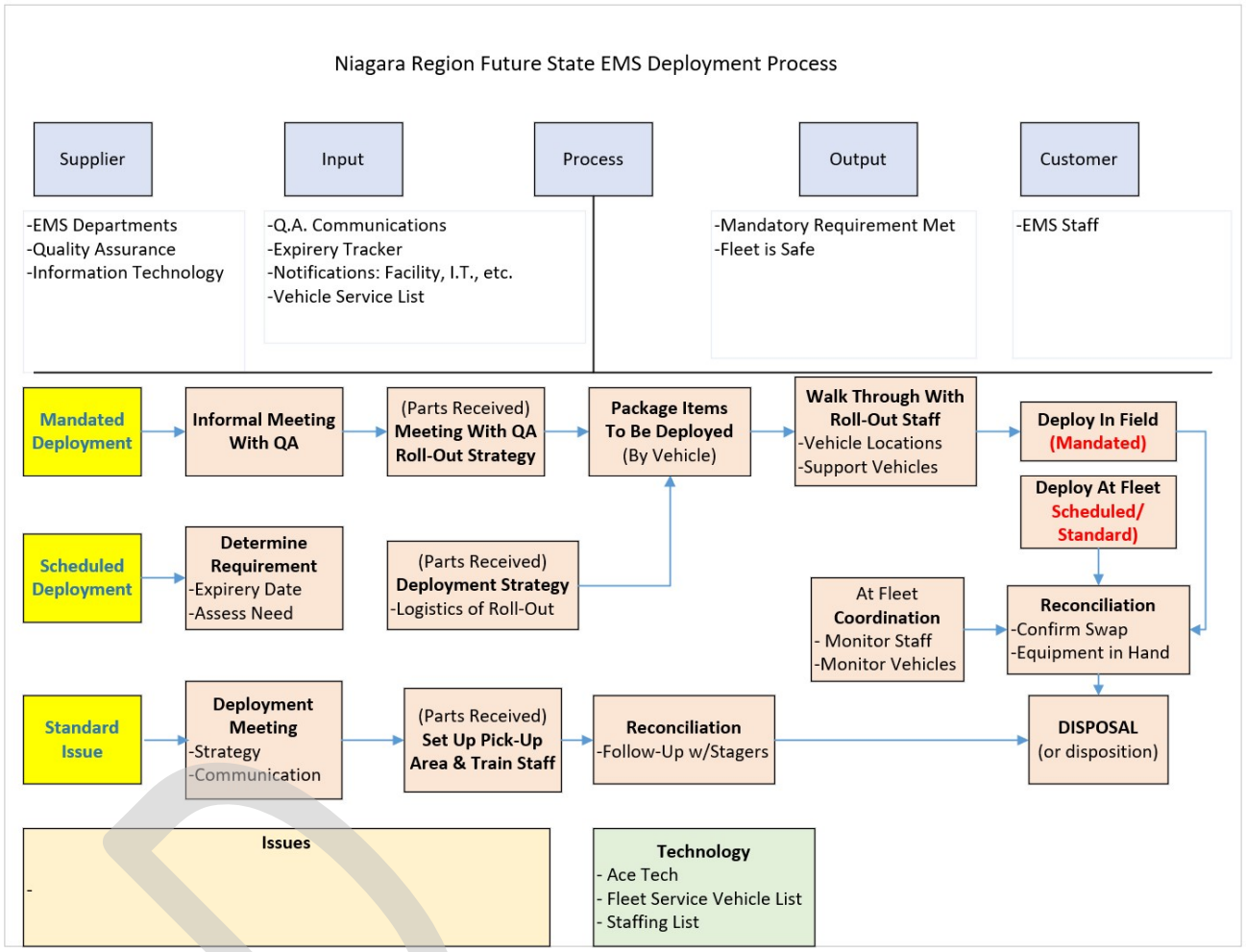
Deployment

Changes from Current State:

1. The new Hub Model will reduce time and effort spent on mandatory deployments by 60%
2. The Future State Model will allow most mandatory deployments to be conducted in-house (Hub) as opposed to seeking out the vehicles / personnel in the field to execute the changes.
3. Coordination and reconciliation time would be reduced.
4. Communications and deployment strategy will be more efficient.
5. Reduced chance of mis-deployments and errors.

6. Improved throughput for non-mandated deployment with more vehicles and Paramedics passing through the facility.

SIPOC Functions and Activities:



6. Logistics Staffing HR Models:

Objective

The objective of the HR Study was to determine the optimum staffing requirements for the Fleet Logistics organization. The Current State study was directly based upon the Current State Process Mapping (SIPOCs). Subsequently, Future State HR Staffing Models were also as a direct result of the Future State SIPOCs. The methodology used is described in the following section. After displaying the results of both series of modelling, the summaries will be discussed at the end of this section.

Methodology

The Methodology used in conducting the Time Study was as follows:

1. A proprietary Model was used that identified Realistic Expectations in Time (RET) by functional activity that basically follows the process activities as displayed in the SIPOCs discussed in Section: “Functional Reviews”. The Model compared Available Hours to Required Hours and calculated the FTE (Full Time Equivalent) requirement based upon the Current State.

2. The first step was determining Available Hours by calculating the net available hours annually, specific to the study individual, based upon removing all days and time not available to perform what is required within the SIPOC details. The following tab, as an example, from the Model displays this data:

Days in Year		365.0
Weekend Days		104.0
Gross Working Days		261.0
Statuary Holidays		12.0
Net Working Days		249.0
Average Vacation Allowance		15.0
Average Sick days		6.3
Training, Temporary & Secondary Duties		2.0
Net Actual Working Days		225.8
Absenteeism (unknown reasons)	2%	4.5
Actual Days Available each PY		221.2
Total Hours / Shift		8.0
Lunch		1.0
Allowance for Breaks		0.5
Net Hours Available per Shift		6.5
Actual Hours at Sensitivity	100%	6.5
Total Hours Available per Person Year (PY)		**1438.0**

	Staff (by name)	PY's
1	Employee	1.0
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
	Total PY's:	**1.0**
	Hours Available per Year:	**1438.0**

3. The second step was applying Time and Volume (transactions) assignments to activities. The Activities reflect the process/activity steps as identified in the applicable SIPOCs. The process is to step the staff members, by process, through each activity and, utilizing the PERT (Program Evaluation and Review Process) timing algorithm, to determine the "Expected Time" (te) required for each activity. This methodology averages, with weighting, 1) Optimistic time, 2) Most Likely Time, and 3) Pessimistic Time, as asked and replied by the staff member. An example follows:

Back of Vehicle										
Activities (SIPOC Process):	Identify & Move	Set Up	Remove Contents	Clean Cabinets	Detail	Final Clean	Clean Stretcher	Completion		
RE's (minutes):	5.3	15.0	7.2	63.3	123.3	19.2	21.7	35.8	0.0	0.0
Observations:										
Optimistic (o)	2	15	5	60	120	15	20	30		
Most Likely (m)	5	15	7	60	120	20	20	35		
Pessimistic (p)	10	15	10	80	140	20	30	45		
Expected Time (te)	5.3	15.0	7.2	63.3	123.3	19.2	21.7	35.8	0.0	0.0
Hours Required/Day:	0.07	0.20	0.10	0.84	1.64	0.26	0.29	0.48	0.00	0.00
Transactions/Day:	0.800	0.800	0.800	0.800	0.800	0.800	0.800	0.800		
Staffing										
Annual Hours Required:	17.6	49.6	23.7	209.4	407.8	63.4	71.6	118.5	0.0	0.0
TOTAL Annual Hours Required:	961.7									
Total Annual Hours Available:	1608.0									
Total Annual Days Available:	229.712									

The Time Study Model will have a separate section (as above) for each SIPOC developed. The Model will calculate, considering all functions/activities, the annual hours required to do the work and compare that data to the net available annual hours for each individual. The results will be displayed on a summary page. The full details (as example) of both the Current State and Future State Time Studies are displayed in Appendix A.

The "Detail" section of the model also lists all duties measured and ranks by % of effort. This is helpful if there is a desire to reduce time spent by focusing on the larger time consumed activities.

Current State Staffing Model

Wash Bay

The Wash Bay function is currently staffed with 1.0 FTE (2 X .5FTEs). The 3 largest time-consuming activities are:

1. Detailing the vehicle both front and back 40.9%
2. Cleaning Cabinets 11.3%
3. Completion (or clean up) 6.4%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	961.7
TOTAL annual Hours Required:	1848.4
TOTAL Hours Available:	1608.0
GAP - Hours:	240.4
FTE's Required:	1.15
Staffing Over (-Under):	**-0.15**

The number of FTEs required to do the work in Wash Bay is: 1.15. Therefor, this function is understaffed by .15 FTE.

Vehicle Servicing Repairs and Scheduled Maintenance

The vehicle Servicing function is currently staffed by 2.0 FTEs. The 3 Largest time-consuming activities are:

1. Determining vehicle location 24.8%
2. In-House Repairs 20.0%
3. Post-Service Assessment 6.4%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	2411.1
TOTAL annual Hours Required:	3892.0
TOTAL Hours Available:	3216.0
GAP - Hours:	676.0
FTE's Required:	2.42
Staffing Over (-Under):	**-0.42**

The number of FTEs to do the work required by Vehicle Maintenance is: 2.42. Therefor this function is understaffed by .42 FTE.

Supplies and Logistics

The Supplies and Logistics function is currently staffed by 3.0 FTEs. The 3 largest time-consuming activities are:

1. Delivering supplies to bases 20.1%
2. Delivering supplies to hospitals 18.5%
3. Projects 9.6%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	2119.7
TOTAL annual Hours Required:	4824.8
TOTAL Hours Available:	4824.0
GAP - Hours:	0.8
FTE's Required:	3.00
Staffing Over (-Under):	**0.00**

The number of FTEs to do the work required by Supplies and Logistics is: 3.0. Therefor this function is optimally staffed.

Quarter Master and Monitors

The Quarter Master function is currently staffed by 1.0 FTEs. And for the purpose of the Current State analysis includes Monitors Inspection and Repair as both functions are performed by the same individual., The 3 largest time-consuming activities are:

1. Receiving and restocking Items 32.8%
2. Coordinating Try-Ons 15.3%
3. Projects 9.2%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	1599.9
TOTAL annual Hours Required:	2159.2
TOTAL Hours Available:	1608.0
GAP - Hours:	551.2
FTE's Required:	1.34
Staffing Over (-Under):	**-0.34**

The number of FTEs to do the work required by Quarter Master and Monitors is: 1.34. Therefor this function is understaffed by .34 FTEs.

Equipment Maintenance

The Equipment Maintenance function is currently staffed by 1.0 FTE. The 3 largest time-consuming activities are:

1. Repair of the Stretcher and Chair 25.5%
2. Repair the Power Load 15.6%
3. Inspection of the Stretcher, Scoop and Chair 10.1%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	529.5
TOTAL annual Hours Required:	1237.7
TOTAL Hours Available:	1608.0
GAP - Hours:	-370.3
FTE's Required:	0.77
Staffing Over (-Under):	**0.23**

The number of FTEs to do the work required by Equipment Maintenance is: .77. Therefor this function is overstaffed by .23 FTEs.

Deployment

The Deployment function is currently staffed by 0 FTEs. This role is currently being filled by a Supervisor. The 3 largest time-consuming activities are:

1. Reconciliation of standard Deployment activities 26.3%
2. Standard Issue Switch-Outs 21.8%
3. Set up pick up area 15.3%

The summary of the FTE requirements as determined by the Model is as follows:

Annual Hours Required:	80.1
TOTAL annual Hours Required:	326.4
TOTAL Hours Available:	0.0
GAP - Hours:	326.4
FTE's Required:	0.20
Staffing Over (-Under):	**-0.20**

The number of FTEs to do the work required by Deployment is: .20. Therefor this function is understaffed by .20 FTEs.

Summary of the Current Facilities Logistics Staffing Models in FTEs:

1. Wash Bay 1.15
2. Vehicle Servicing 2.42
3. Supplies and Logistics 3.00
4. Quarter Master & Monitors 1.34
5. Equipment Maintenance .77
6. Deployment .20

TOTAL **8.88**

The Fleet Centre Logistics actual FTEs at the time of this study were 8 (9 staff, 2 being .5 FTEs). This would indicate the Logistics department are understaffed by .88 FTEs.

Current State Logistics Staffing Projections in FTEs:

The following drivers were used to project Logistics staffing, under the Current State, to 5 and 10 years. The ten year projection was extrapolated to support the 30 Cash Flow models comparing a Current Facility Model to a new Primary Hub. The driver's base numbers (year 0) are 2019 data.

Population Growth Model

Niagara Region Recent Growth Plan Projections estimate the Niagara Region population to grow from 468,461 to 502,909 persons from 2019 to 2029 (a 7.4% increase). Those residents over the age of 65 will grow from 22% in 2019 to 29% of the population by 2029. *(Data: Government of Ontario)*

	Year 0	Year 5	Year 10
Total	468,461	485,909	502,909
>65 %	22%	25%	29%
>65 Pop:	103,061	121,477	145,844
<65 Pop:	365,400	364,432	357,065

Call Volumes

The average annual rate increase of calls over the past 5 years has been 5.7%. The 2018 call volume was 80,926 and is expected to reach 140,876 by 2029. That represents an increase of 74% over the next 10 years. Total calls for those residents over 65 will increase from 28,445 in 2018 to 49,519 by 2029. That represents an increase of 74%.

Average Annual Calls Increase past 5 Years:	5.7%		
	Compounded Future Increase 5 Year Periods		
% >65	Year 0	Projected Y5	Projected Y10
35.2%	80,926	106,773	140,876
Total >65 Calls:	28,445	37,531	49,518
Total <65 Calls:	52,481	69,243	91,358
Calls >65 Population:	0.28		
Calls <65 Population:	0.14		

Active Ambulances

Currently, NEMS has 51 active vehicles available. It is projected, based upon the increase in call volumes and related number of 12-hour shifts required, that by 2029 the number of active vehicles required will increase to 89.

	Year 0	Projected Y5	Projected Y10
Number of 12hr. Shifts/Day:	51	67	89
Number of Calls/Vehicle/Day:	4.3		
Required Active Vehicles on Road/24-7:	19	25	33
Required Active Vehicles on Road for Peak:	32	42	56
Total Active Vehicles:	51	67	89
Ratio-Active Average/Peak:	1.68		
Required Number of Spares:	11	15	19
Ratio:	0.22		
Required Total Units:	62	82	108

Utilizing the above drivers: 1) Population Growth, 2) Call Volumes, and finally to 3) Active Ambulances, the Logistics support staff requirements were projected for 5 and 10 year staffing for the 2019 report. For the purpose of this revision, being 30 year cash flows, the 10 year number was extrapolated to 30 years with the following results:

Projection to year 10 (2019 Report) with Extrapolation to Year 30

	Year 0	Year 5	Year 10	Year 15	Year 20	Year 25	Year 30
Total Logisitics Staff:	9	12	16	20	24	28	32
Active Vehicles:	51	67	89				
Ratio - Logisitcs Staff / Active Vehicle:	6						

This data will be used for the options comparisons.

Future State Primary Hub Logistics Staffing Model

Based upon the Future State process change assumptions as outlined in section “Process Change Assumptions” and the development of the future State SIPOCs the staffing requirements for Fleet and Logistics was Modelled as would be required for a Primary Hub Model.

Wash Bay

The Wash Bay frequency of work will change from 4 units a day to 50 units a day. As outlined in the Future State SIPOCs the mix of work will also change (see Future State SIOC Wash Bay). A major difference will be the creation of a new function: Kitting. A reduction of Detailing and some disinfection routines will also change. The Future State Staffing Model revealed the following:

Annual Hours Required:	8432.0
TOTAL annual Hours Required:	8724.2
TOTAL Hours Available:	0.0
GAP - Hours:	8724.2
FTE's Required:	5.43

Staffing requirement will now be 5.43 FTEs to satisfy the work required under the Primary Hub Model. The major time-consuming activities will be:

1. Clean Vehicle 57.2%
2. Re-Equip Vehicle 17.8%
3. Remove contents 13.9%

Vehicle Servicing including Maint. & Repairs, Parts, Commissioning and Decommissioning

With more than 60% more vehicles accessed in house (Hub), the time required profile changes. The Future Staffing Model reveals the following:

Annual Hours Required:	2411.1
TOTAL annual Hours Required:	4256.0
TOTAL Hours Available:	3216.0
GAP - Hours:	1040.0
FTE's Required:	2.65

Only 2.65 FTEs will be required to accomplish this work under the Primary Hub Model. The 3 major time-consuming activities will be:

1. Determining Vehicle location 22.7% (as compared to 25% under the Current State)
2. In-House Repairs 18.0%
3. Post Service assessment 5.8%

Supplies and Logistics including Pharmaceuticals and Narcotics

With consolidation of access to vehicles and less deliveries required for Bases, there is a significant drop in the required FTEs under the Primary Hub Model as compared to the Current State (3.0). Summary of the Future State Staffing Model is as follows:

Annual Hours Required:	1217.3
TOTAL annual Hours Required:	3648.4
TOTAL Hours Available:	0.0
GAP - Hours:	3648.4
FTE's Required:	2.27

There will be a requirement of 2.27 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

1. Deliveries to hospitals 24.5%
2. Restocking of Kitting Room 14.2%
3. Projects 12.7%

Quarter Master

The QM function will basically remain the same with efficiencies coming from improved access to Paramedics, more efficient physical warehousing, and improved throughput. The summary of the Future State Staffing Model is as follows:

Annual Hours Required:	1599.9
TOTAL annual Hours Required:	1890.7
TOTAL Hours Available:	0.0
GAP - Hours:	1890.7
FTE's Required:	1.18

There will be a requirement of 1.18 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

1. Requests (Web plus Personal) 32.8%
2. Try-Ons 17.5%
3. Projects 10.5%

Monitor Inspection and Repair

The Monitors Inspection and Repair function will basically remain the same with efficiencies coming from improved access to Paramedics, more efficient physical warehousing, and improved throughput. The summary of the Future State Staffing Model is as follows:

Annual Hours Required:	0.0
TOTAL annual Hours Required:	268.5
TOTAL Hours Available:	0.0
GAP - Hours:	268.5
FTE's Required:	0.17

There will be a requirement of .17 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

1. Internal / External Deliveries 29.2%
2. Send to Unit 24.6%
3. Execute Repairs 18.5%

Equipment Maintenance

The Equipment Maintenance and Repair function will basically remain the same under the Primary Hub Model. However, under the Primary Hub Model, the equipment cleaning activity will now be required on all 50 vehicles daily. This will add approximately 1 FTE to this function. The control of the quarterly and yearly mandatory requirements may be improved as 60% of the fleet will be available daily to ensure the mandatory requirements are timelier. The summary of the Future Staffing Model is as follows:

Annual Hours Required:	2079.5
TOTAL annual Hours Required:	2787.7
TOTAL Hours Available:	0.0
GAP - Hours:	2787.7
FTE's Required:	1.73

There will be a requirement of 1.73 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

1. Cleaning of Equipment 55.6%
2. Repairing Stretcher and Chair 11.3%
3. Repairing the Power Load 6.9%

Deployment

There will be a significant amount of reduced time in dealing with mandatory deployments as access to the vehicles will be greater under the Primary Hub Model. Further time will be saved in

reconciliation, communication, coordination and possibly reduced mis-deployments and other errors. The summary of the Future Staffing Model is as follows:

Annual Hours Required:	80.1
TOTAL annual Hours Required:	310.7
TOTAL Hours Available:	0.0
GAP - Hours:	310.7
FTE's Required:	0.19

There will be a requirement of .19 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

1. Reconciliation 27.6%
2. Switch Out 23.0%
3. Set-Up Pick-Up area 16.1%

Kitting

Kitting will be a new function under the Primary Hub Model. The staff within this function will remove equipment and supplies removed from the vehicle by the Wash Bay staff and replace this with a vehicle ready kit. All equipment and supplies will be verified (expiry date, etc.) by the Kitting staff during this process. The summary of the Future Staffing Model is as follows:

Annual Hours Required:	4305.6
TOTAL annual Hours Required:	4305.6
TOTAL Hours Available:	0.0
GAP - Hours:	4305.6
FTE's Required:	2.68

There will be a requirement of 2.68 FTEs to accomplish this work under the Primary Hub Model. The 3 major time-consumers will be:

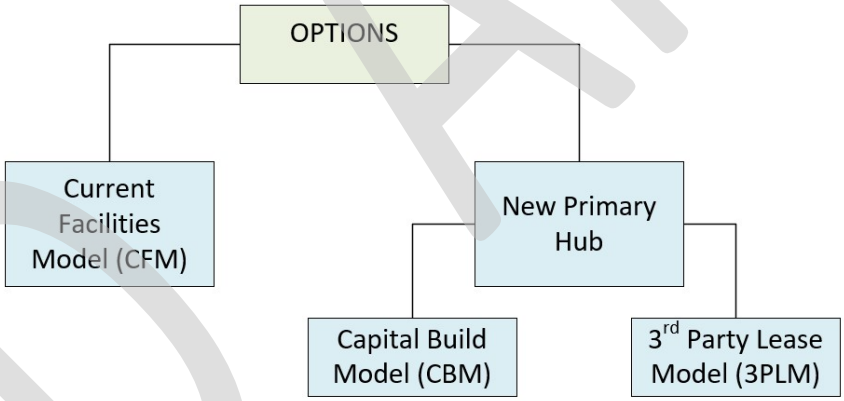
1. Replacing Stock 58.4%
2. Swapping out carts 25.6%
3. Verifications 16.0%

Summary of the Primary Hub Logistics Staffing Models in FTEs:

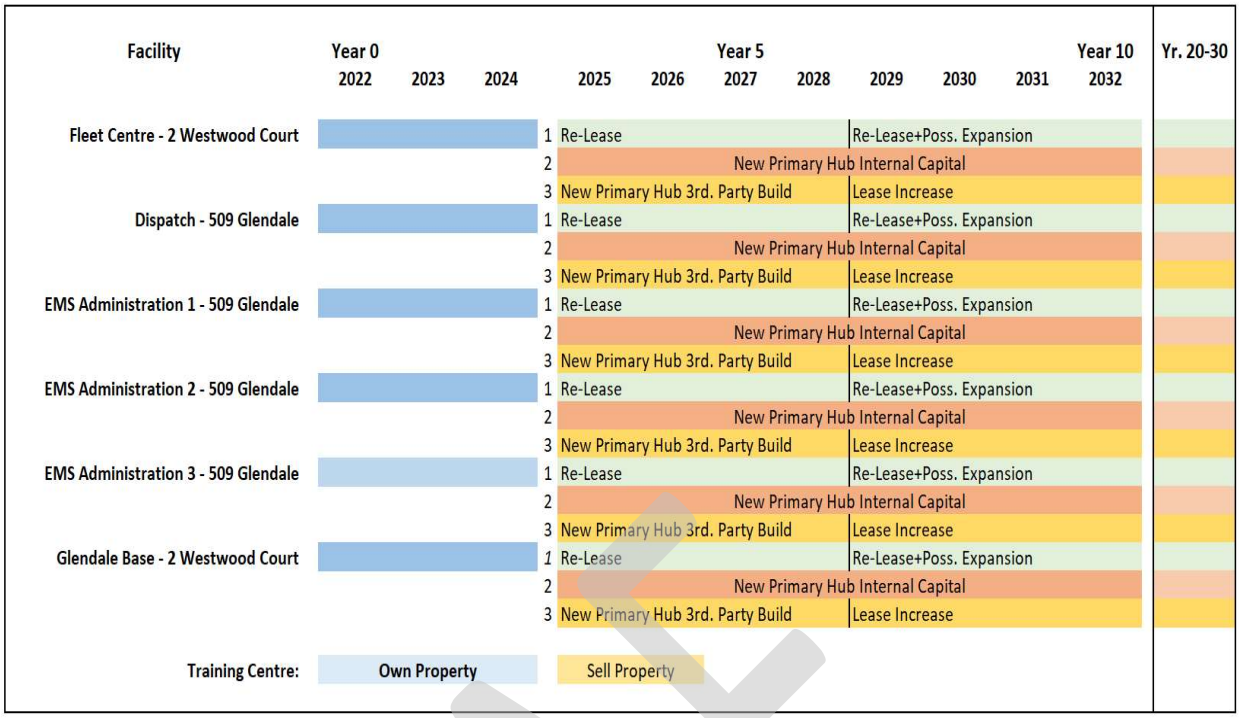
4.	Wash Bay	5.43
5.	Vehicle Servicing	2.65
6.	Supplies and Logistics	2.27
7.	Quarter Master	1.18
8.	Monitors Inspection and Repair	.17
9.	Equipment Maintenance	1.73
10.	Deployment	.19
11.	Kitting	2.68
	TOTAL	**16.30**

7. Future Facilities Financial Model – Options

Using the above and other business drivers, CLARICO applied modelling techniques to compare an a) Current Facilities Model (CFM) and b) Two Primary Hub construction scenarios. One Scenario investigated a Capital Build Model (CBM) and the second a 3rd Party Lease Model (3PLM).



NEMS currently leases facilities for Headquarters, Dispatch, and Fleet and owns the property where training currently takes place. In general, most NEMS leases for the previous locations listed will expire within the next 4 years and thus become a driver to expand, replace and consolidate the facilities in those locations outlined in the following chart:



Future Facilities Financial Model – Methodology and Analysis

CLARICO created costing models in the form of 30 year cash flows comparing the following 3 scenarios:

1- Continue with the Current Facility Modal continuing to re-lease and periodically expand those facilities to meet future demand. With 2022 being the base year (year 1), expansions were simulated for Fleet and dispatch in year 5, 15, and 25.
2- Build a New Primary Hub incorporating HQ (4 leases), Fleet Centre (2 leases) and the Training Centre. (The Ontario Street Base has been relocated to the Fleet Centre at 2 Westwood Court). This option would be funded internally by Niagara Region.
3- Engage a third party to construct a New Design Build Primary Hub occupancy being approximately by year 5. This option would assume a 30 year leasing arrangement.

The methodology used to develop and model (which can be referenced in its entirety in Appendix B) the three 30 year cash flow scenarios are as follows:

1. The Current Facilities data was assembled, including lease terms and options, and entered into the DATA tab of the Model:

	HQ 103 (admin.)	HQ 100 (admin.)	HQ 104 (disp.)	HQ 201	Westwood 1 (Fleet Centre)	Westwood 2 (Glen. Base)	Ont. Base	Ont. Training
Current Sq.Ft:	4,673	2,285	7,333	4,000	25,459	3,000	1,200	3,611
**Annual Base Rent:	$85,282	$41,694	$157,476	$73,000	$202,018	$23,809	$0	$0
Operating Expenses:	$8,000	$4,300	$17,600	$6,000			$6,569	$22,724
Additional Rent:					$76,945	$9,120	$0	$0
Utility Costs (if separate):					$176,365	$7,358	$5,234	$17,372
Termination / Renewal Date 1:	**31-08-2024**	**31-08-2021**	**31-08-2024**	**28-02-2024**	**28-02-2025**	**31-07-2025**		
Termination / Renewal Date 2:		**31-08-2024**	31-08-2029		28-02-2030			
End of Term Reparations:								
Number of Additional Renewals:	2	0	0	2	0	0		
Term (years) of Renewals:	1	5	5	1	0	0		

2. Researched data formed the assumptions required for the New Primary Hub were determined and entered into the DATA tab of the Model. Sources included: “EMS Hub Budget Revisited”, the “A49 Report”, and “Copy of EMS Hub Estimates June 30, 2021”.

Leased Premises sq.ft. New Hub:	127,870
Base Rent/sq.ft. New Hub (Lease):	$25.00
Operating Expenses/sq.ft. New Hub:	$15.00
Utility Costs/sq.ft. New Hub:	$0.00
Tax Cost/sq.ft New Hub (Lease):	$3.00
MI Cost/sq.ft New Hub (Capital):	$0.00
5 year Lease Rate Increases at Renewals New Hub:	5%
Facilities Management cost/sq.ft New Hub Year 1:	$0.55
Fac. Mgmt. Total Salaries/Benefits/year:	$150,000

3. Operating Assumptions were developed and entered into the DATA tab of the Model:

Expansion Space at Renewal Year 5 - HQ 104:	200%
Expansion Space at Renewal Year 5 - Westwood:	150%
Expansion Space at Renewal Year 15 and 25 - HQ 104:	135%
Expansion Space at Renewal Year 15 and 25 - Westwood:	140%
Lease Rate Increases at Renewals - HQ 100:	4.2%
Lease Rate Increases at Renewals - HQ 103/201/100:	5.0%
Lease Rate Increases at Renewals - HQ 104:	5.0%
Lease Rate Increases at Renewals - Westwood/New Training:	1.0%
Replacement Training Centre sq.ft:	5,000
Replacement Ont. St. Base sq.ft:	4,000
Operating Costs/sq.ft.- Current Facilities Model (CFM):	$12.00
Leasehold Improvement Expenses/sq.ft. at Renewals:	$50.00
Moving Costs/sq.ft. at Renewals:	$1.00
FF&E Cost/sq.ft. Medium:	$25.00
Base Rent - New Ontario St. Base & Training:	$10.00
Utility Cost/sq.ft. - New Ontario St. Base & Training:	$4.00
Annual inflation Rate (Add. Rent, Utilities, Op. Costs, Salaries):	2%

4. Financial Assumptions were developed and entered into the DATA tab of the Model:

Building Capital Funds Required New Hub:	$77,168,000
Land Capital Cost Including Fees:	$13,332,000
Start-Up Costs New Hub 3rd Party Lease:	$4,823,903
Interest Rate for Borrowing Funds:	3.50%
Reserve Transfer Rate:	1.0%
Term in Years:	30
DC Recovery Year 1 - Capital Build Model:	-$2,500,000
DC Recovery Years 6-30 - Capital Build Model:	-$500,000
DC Recovery years 1 - 30 - 3rd Party Lease Model:	-$500,000

The DATA tab of the Model (items 1 – 4 above) will drive the 30 year cash flows in all 3 scenarios.

5. A 30 year Current Facilities Model (CFM) was calculated. An example of year 4 of 30, including expansions, is as follows:

	Infl. Rate	Year 4 - 2025											
	2%	Base Rent	New	New	New	New	Facilities	Logistics	Leasehold	Moving	FF&E		
	Sq. Ft.	Increase %	Base Rent	Add. Rent	Utility Costs	Op. Expense	Management.	Staff	Finish Out	Costs	Start Up	Tot. Cost	Cost/Sq.Ft.
HQ 103:	4,673	5.0%	$103,661	$0	$0	$8,659	$2,769					$115,089	$24.04
HQ 100:	2,285	5.0%	$47,533	$0	$0	$4,654	$1,354					$53,542	$22.84
HQ 104:	14,666	5.0%	$330,700	$0	$0	$6,495	$4,345		$73,330	$2,933	$73,330	$491,132	$33.19
HQ 201:	4,000	5.0%	$88,732	$0	$0	$6,495	$2,370					$97,597	$23.81
Westwood 1	38,189	1.0%	$315,331	$124,932	$286,355	$0	$15,085	$925,226	$127,295	$7,638	$190,943	$1,992,803	$27.56
Westwood 2	3,000	1.0%	$24,776	$9,872	$7,965	$0	$1,778					$44,390	$14.20
Ontario Street Base:	4,000	n/a	$40,000	$0	$16,000	$48,000	$711		$28,000	$800	$20,000	$153,511	$38.20
Ontario Street Training:	5,000	n/a	$50,000	$0	$20,000	$60,000	$2,140		$13,890	$1,000	$25,000	$172,030	$33.98
Total:	75,813		$1,000,733	$134,803	$330,319	$134,303	$30,551	$925,226	$242,515	$12,371	$309,273	$3,120,094	$41.16

6. In preparation for the New Primary Hub options analysis, “Operational Changes” were calculated. In a previous section of this report “Process Change Assumptions and Benefits of a Primary Hub”, a series of benefits was described. Four were examined for cost avoidance or savings and applied against the cash flows as a benefit. In summary, a savings of $2.7M was identified for year 1 of the Hub and projected, with inflation, to year 30. A section of the model is shown below:

	1
Hours/Day Saved/Paramedic:	1.0
Cost/hr:	$59.02
Paramedics Scheduled/day:	111
Days/year:	365
Savings Year 1:	-$2,391,195
Inflation Rate/year:	2.0%

Year	1 Paramedics Efficiencies	2 Inventory Management	3 Out of Service Time	4 Overtime	Total
1	-$2,391,195	-$120,000	-$80,665	-$147,376	-$2,739,236
2	-$2,439,019	-$122,400	-$82,279	-$150,323	-$2,794,021
3	-$2,487,800	-$124,848	-$83,924	-$153,330	-$2,849,902
4	-$2,537,556	-$127,345	-$85,603	-$156,396	-$2,906,900
5	-$2,588,307	-$129,892	-$87,315	-$159,524	-$2,965,038
6	-$2,640,073	-$132,490	-$89,061	-$162,715	-$3,024,338

Summary:

i) Paramedic Efficiencies — $2.4M estimated savings – year 1
ii) Reduction in inventory waste — $120k estimated savings – year 1
iii) Vehicle out-of-service time — $80.1k estimated savings – year 1
iv) Overtime reduction — $147.4k estimated savings – year 1

The net estimated cost avoidance and operational savings for year 1 is $2.7M and was projected, with inflation, for the full 30 years. Please refer to Addendum B for the full 30 year cash flows.

7. The first financing option considered was Internal Capital financing, or Capital Build Model (CBM). It is assumed for this option that funds could be obtained from Reserves. In this case a 1% (of total capital, less land) Reserve Transfer is applied linearly for each year of the 30 year cash flow. Also applied was a Development Charge Offset of $2.5M in year 1 and $500k commencing in year 6, and the impact (calculated at $.55 SF) on Logistics staff to manage the property. The following displays some basic assumptions and the first 10 years of 30. The full 30 year cash flow can be viewed in Addendum B.

Building Capital:	$77,168,000
Interest Rate:	3.50%
Res. Trans. Rate (Building):	1.00%
Res. Trans. Cost/Year:	$771,680
Land Capital:	$13,332,000
Interest Rate for Borrowing Funds:	3.50%
Building sq.ft:	127,870
Inflation Rate:	2%
Utilities/sq.ft:	$0.00
Operating Expenses/sq.ft:	$15.00
MI/sq.ft:	$0.00
Term in Years:	30

Year	Logistics Staffing	Operational Improvements	Operating Expenses	Principal Building	Interest Building	Reserve Transfer Cost	Development Charge Offset	Principal Land	Interest Land	TOTAL
0										$0
1	$1,138,739	-$2,739,236	$1,918,050	$1,494,847	$2,700,880	$771,680	-$2,500,000	$258,259	$466,620	$3,509,838
2	$1,161,514	-$2,794,021	$1,956,411	$1,547,167	$2,648,560	$771,680	$0	$267,298	$457,581	$6,016,189
3	$1,184,744	-$2,849,902	$1,995,539	$1,601,317	$2,594,410	$771,680	$0	$276,653	$448,226	$6,022,667
4	$1,208,439	-$2,906,900	$2,035,450	$1,657,363	$2,538,363	$771,680	$0	$286,336	$438,543	$6,029,275
5	$1,232,608	-$2,965,038	$2,076,159	$1,715,371	$2,480,356	$771,680	$0	$296,358	$428,521	$6,036,015
6	$1,281,082	-$3,024,338	$2,117,682	$1,775,409	$2,420,318	$771,680	-$500,000	$306,730	$418,148	$5,566,711
7	$1,306,703	-$3,084,825	$2,160,036	$1,837,549	$2,358,178	$771,680	-$500,000	$317,466	$407,413	$5,574,199
8	$1,332,837	-$3,146,522	$2,203,237	$1,901,863	$2,293,864	$771,680	-$500,000	$328,577	$396,302	$5,581,838
9	$1,359,494	-$3,209,452	$2,247,301	$1,968,428	$2,227,299	$771,680	-$500,000	$340,077	$384,801	$5,589,629
10	$1,386,684	-$3,273,641	$2,292,247	$2,037,323	$2,158,404	$771,680	-$500,000	$351,980	$372,899	$5,597,576

In summary, the year net 1 cost, including allowing for Operational Changes and Development Charge Offset benefits, would be $3.5M.

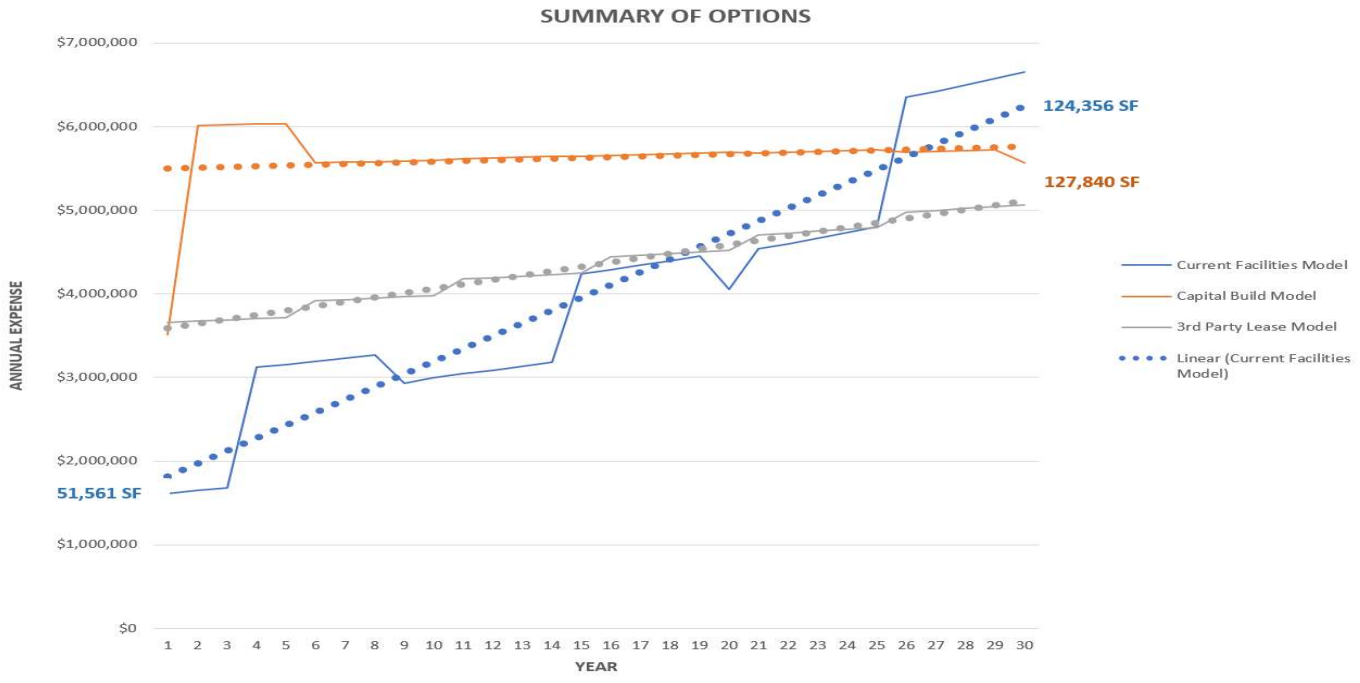
8. The second financing option considered for the New Primary Hub option was to engage a 3rd party developer to build-to-suite the 127,870 SF facility. NEMS would enter into negotiation to secure a 30 lease. The Model assumes a 5% increase in basic rent every 5 years. Also, the "EMS Hub Budget Revisited" document indicates from the original $97M project coast, a balance of $4.8M will still be required as "Start Up" funding. This model allowed for debt servicing of these funds. Finally, Operating expenses at $15.00 SF includes Maintenance, Insurance, and utilities. Taxes (at $3.00 SF) are calculated separately. The following displays some basic assumptions for this option and the first 10 years of 30.

Sq. Ft:	127,870
Base Rent Incr. at Renewals:	5%
Base Rent/sq.ft. New Hub:	$25.00
Utilities Expense/sq.ft:	$0.00
Operating Expenses/sq.ft:	$15.00
TMI/sq.ft:	$3.00
Interest Rate for Borrowing Funds:	3.50%
Inflation Rate:	2%
Start Up Capital Costs:	$4,823,903
Term in Years:	30
DC Recovery years 1 - 30:	-$500,000
Fac. Mgmt. Total Salaries/Benefits/year:	$150,000

Year	Logistics Staffing	Operational Improvements	Base Rent	Taxes	Start-Up Principal	Start-Up Interest	Development Charges Rec.	Operating Expenses	TOTAL
0									$0
1	$1,138,739	-$2,739,236	$3,196,750	$383,610	$93,445.42	$168,836.61	-$500,000	$1,918,050	$3,660,195
2	$1,161,514	-$2,794,021	$3,196,750	$391,282	$96,716.01	$165,566.02	-$500,000	$1,956,411	$3,674,218
3	$1,184,744	-$2,849,902	$3,196,750	$399,108	$100,101.08	$162,180.95	-$500,000	$1,995,539	$3,688,522
4	$1,208,439	-$2,906,900	$3,196,750	$407,090	$103,604.61	$158,677.42	-$500,000	$2,035,450	$3,703,112
5	$1,232,608	-$2,965,038	$3,196,750	$415,232	$107,230.77	$155,051.26	-$500,000	$2,076,159	$3,717,993
6	$1,281,082	-$3,024,338	$3,356,588	$423,536	$110,983.85	$151,298.18	-$500,000	$2,117,682	$3,916,831
7	$1,306,703	-$3,084,825	$3,356,588	$432,007	$114,868.29	$147,413.74	-$500,000	$2,160,036	$3,932,791
8	$1,332,837	-$3,146,522	$3,356,588	$440,647	$118,888.68	$143,393.35	-$500,000	$2,203,237	$3,949,069
9	$1,359,494	-$3,209,452	$3,356,588	$449,460	$123,049.78	$139,232.25	-$500,000	$2,247,301	$3,965,673
10	$1,386,684	-$3,273,641	$3,356,588	$458,449	$127,356.52	$134,925.51	-$500,000	$2,292,247	$3,982,609

In summary, the year 1 cost, including Operational Changes benefits, would be $3.7M.

9. The 30 year cash flow comparisons of the 3 options were summarized in the following Graph:



The SF for the New Primary Hub option is as indicated in the A49 Report at 127,480 SF. The Current Facilities Model has a starting SF of 51,561. Over the 30 year period expansions for HQ 104 and the Fleet Centre have been assumed at year 5, 15 and year 25.

Obviously, commencing at year 1, the Current Facility Model (CFM) will be the lower cost of all options, however, will increase with: 1) Rent increases, and 2) Expansions and related capital, moving and expense (Furniture, Fixtures and finish-out) costs. The total CFM expenditures will most likely surpass the 3rd Party Lease (3-PL) Model around year 18 and surpass the CBM around year 26.

Pros and Cons of the 2 New Primary Hub options

Capital investiture by the Region:

Pros:

- Niagara Region would retain ownership of the building and an appreciating land asset. Assuming the building could be considered useful (for EMS or others), the property would have residual value at year 30.
- This option would provide flexibility in the future re growth and expansion. Land costs would be assumed day 0, therefor new capital costs would be at a minimalized, and for future building and associated infrastructure (e.g., future gas bar).
- Lower expected annual operating costs (however, will be offset be annual amortization or debt financing expense)
- Possible more flexibility of design

Cons:

- Large capital sums required and related debt financing. This project in today's numbers would be $97M.
- Would be responsible for all Building and Land maintenance (including structural).

Design Build Finance by 3rd. Party:

Pros:

- Minimal capital outlay required. Capital Start-up costs are estimated at $4.7M. The balance of the $97M estimate would be assumed by the Developer/Investor.
- Liabilities (e.g., catastrophic loss, Infrastructure), for the most part, will be assumed by the Developer/Investor (now Landlord).
- Could possibly negotiate part of the Start-Up ($4.M) costs with lessor as leasehold improvements.
- More flexibility, and minimal liabilities at end of lease.

Cons:

- Monthly/yearly expense costs will inflate over time; however, the annual cost will still be lower than the Capital Build Model.
- Will not own the building and land assets.
- Reduced flexibility re future and in-term growth.

8. Conclusions

The objective of this section of the Report was to assess options and impact for considering the development of a new Primary Hub for Niagara Region EMS. Options related to cost and financing; Impact related to Fleet Logistics staffing. It is assumed NEMS desires to develop the Hub Model as it will, as in other jurisdictions, provide first rate emergency services to the residents of The Region of Niagara.

We have determined that, in a new Primary Hub Model, that Fleet Logistics staffing will increase from 9 FTEs to 16 FTEs. This would increase staffing costs by $500k/year. However, we have also identified $2.7M/year operational savings attributed to the new Hub processes.

Reviewing the results of the Financial Options Analysis the early years of comparison of cost favours the Current Facilities Model (CFM). However, over time, the cost of the CFM exceeds the 3rd Party Lease Model (3-PLM) at approximately year 18 and subsequently exceeds the Capital Build Model (CBM) in year 26. At year 18 the 3-PLM remains and will continue as the lowest cost option. At year 30, under the 3-PLM, and if the Location is still highly desirable, NEMS could enter into re-leasing and expansion arrangements, or have the flexibility to relocate to new premises and location.

We believe the next step for NEMS is to Solicit 2-3 interested parties who may want to provide a build-to-suit building on a 10+ acre of land and provide acceptable lease terms for a 30 year period. Also, it would be beneficial for prospective developers to already own parcels of land of this size in a suitable location (NEMS operation, Zoning, etc.) for the New Primary Hub.

We recommend NEMS proceed with a RFI to support this strategy.

9. Appendix A – Staffing Model Example (e.g., Current State Vehicle Servicing)

Appendix A, B, C and D are located in the NEMS Drop Box. Link below:

https://claricogroup.sharepoint.com/sites/NEMSHUB/Shared%20Documents/Forms/AllItems.aspx?viewid=8ea66bfe%2D2bfa%2D4936%2D9141%2D5e35b5d7bfb7&id=%2Fsites%2FNEMSHUB%2FShared%20Documents%2FRoot%2FNEMS%20External

Available time

	Department: NEMS Fleet Logistics - Process: FS Vehicle Service		
	Calculation of total Hours Available per Person Year (PY)		
	Days in Year		365.0
	Weekend Days		104.0
	Gross Working Days		261.0
	Statuary Holidays		13.0
	Net Working Days		248.0
	Average Vacation Allowance		3.6
	Average Sick days		5.0
	Training, Temporary & Secondary Duties		5.0
	Net Actual Working Days		234.4
	Absenteeism (unknown reasons)	2%	4.7
	Actual Days Available each PY		229.7
	Total Hours / Shift		8.5
	Lunch		1.0
	Allowance for Breaks		0.5
	Net Hours Available per Shift		7.0
	Actual Hours at Sensitivity	100%	7.0
	Total Hours Available per Person Year (PY)		**1608.0**
	Staff (by name)		**PY's**
1	Staff 1		1.0
2	Staff 2		1.0
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	Total PY's:		**2.0**
	Hours Available per Year:		**3216.0**

Scheduled Maintenance and Repairs

Scheduled Maint. & Repairs							
Activities (SIPOC Process):	Det. Vehicle Location	Contact Dealer	In-House Repair	Post Service Assess. (Veh. Returned)	Clear Occurrence Rep.	Spare Veh. To Pool	Update S/Sheets
RE's (minutes):	58.3	50.0	47.0	15.0	5.0	5.0	20.0
Observations:							
Optimistic (o)	10	40	2	15	5	5	20
Most Likely (m)	60	50	25	15	5	5	20
Pessimistic (p)	100	60	180	15	5	5	20
Expected Time (te)	58.3	50.0	47.0	15.0	5.0	5.0	20.0
Hours Required/Day:	3.89	0.83	3.13	1.00	0.33	0.33	0.20
Transactions/Day:	4.000	1.000	4.000	4.000	4.000	4.000	0.6
Staffing							
Annual Hours Required:	964.4	206.7	777.1	248.0	82.7	82.7	49.6
TOTAL Annual Hours Required:	2411.1						
Total Annual Hours Available:	1608.0						
Total Annual Days Available:	229.712						

Parts Replenishment

Parts Replenishment					
Activities (SIPOC Process):	Assess Inv. Levels (Det. Requirement)	Request for Quotation (Various Suppliers)	Obtain PO (EMS, Purchasing)	Receive Parts Check, P/Slip, Purch.	Replenish Stores
RE's (minutes):	15.0	15.0	17.5	10.0	7.2
Observations:					
Optimistic (o)	15	15	15	10	5
Most Likely (m)	15	15	15	10	7
Pessimistic (p)	15	15	30	10	10
Expected Time (te)	15.0	15.0	17.5	10.0	7.2
Hours Required/Day:	0.25	0.10	0.12	0.13	0.10
Transactions/Day:	1.000	0.400	0.400	0.800	0.800
Staffing					
Annual Hours Required:	62.0	24.8	28.9	33.1	23.7
TOTAL Annual Hours Required:	172.5				
Total Annual Hours Available:	1608.0				
Total Annual Days Available:	229.712				

Commission Vehicles

Commission Vehicle							
Activities (SIPOC Process):	Monitor Fleet (Kms, Age)	Receive New Vehicle	Preparation (Lic., Ins., Decals, etc)	In House Stocking (Meds, etc.)	Amb. Commissioning (Check Sheet)	Deploy Vehicle (Monitor)	Update Systems
RE's (minutes):	45.0	0.0	820.0	0.0	15.0	15.0	70.0
Observations:							
Optimistic (o)	45		820		15	15	60
Most Likely (m)	45		820		15	15	60
Pessimistic (p)	45		820		15	15	120
Expected Time (te)	45.0	0.0	820.0	0.0	15.0	15.0	70.0
Hours Required/Day:	0.75	0.00	0.72	0.00	0.01	0.01	0.06
Transactions/Day:	1.0		0.05	0.05	0.05	0.05	0.05
Staffing							
Annual Hours Required:	186.0	0.0	177.7	0.0	3.3	3.3	15.2
TOTAL Annual Hours Required:	385.3						
Total Annual Hours Available:	1608.0						
Total Annual Days Available:	229.712						

Decommissioning

Decommissioning							
Activities (SIPOC Process):	Receive Vehicle (to Decommission)	Remove (Stock, Supplies, etc.)	Restock Supplies	Final Prep (Decals, Plates, etc.)	Sell Vehicle (Clearance, Registration)	Post Auction (B of S, Certificate, etc.)	Update Systems
RE's (minutes):	90.0	0.0	0.0	90.0	130.0	130.0	60.0
Observations:							
Optimistic (o)	90			90	120	120	60
Most Likely (m)	90			90	120	120	60
Pessimistic (p)	90			90	180	180	60
Expected Time (te)	90.0	0.0	0.0	90.0	130.0	130.0	60.0
Hours Required/Day:	0.08	0.00	0.00	0.08	0.11	0.11	0.05
Transactions/Day:	0.05			0.05	0.05	0.05	0.05
Staffing							
Annual Hours Required:	19.5	0.0	0.0	19.5	28.2	28.2	13.0
TOTAL Annual Hours Required:	108.3						
Total Annual Hours Available:	1608.0						
Total Annual Days Available:	229.712						

General Administrative

General										
Activities (SIPOC Process):	Fuel Logs	Kms Travelled	Special Events	Data Entry VOD	Maint. Compliance MOH	Managing Light Duties	Special Projects	STU Readiness	DEF Drums	Gov. Deals (misc. equipmebt)
RE's (minutes):	10.8	30.0	25.8	180.0	40.0	44.2	240.0	60.0	30.0	420.0
Observations:										
Optimistic (o)	5	20	15	180	40	35	240	60	30	420
Most Likely (m)	10	30	20	180	40	45	240	60	30	420
Pessimistic (p)	20	40	60	180	40	50	240	60	30	420
Expected Time (te)	10.8	30.0	25.8	180.0	40.0	44.2	240.0	60.0	30.0	420.0
Hours Required/Day:	0.01	0.02	0.17	0.60	0.13	0.74	0.80	0.20	0.50	0.11
Transactions/Day:	0.05	0.05	0.40	0.20	0.20	1.00	0.20	0.20	1.0	0.0
Staffing										
Annual Hours Required:	2.1	5.9	42.7	148.8	33.1	182.6	198.4	49.6	124.0	27.6
TOTAL Annual Hours Required:	814.7									
Total Annual Hours Available:	1608.0									
Total Annual Days Available:	229.712									

Details

Vehicle Service Process					
Function	Activity	Rate (min/activity)	Frequency (per day)	Total Minutes	% of total
Scheduled Maint. & R	Det. Vehicle Location	58.3	4.0	233.3	24.8%
	Contact Dealer	50.0	1.0	50.0	5.3%
	In-House Repair	47.0	4.0	188.0	20.0%
	Post Service Assess.	15.0	4.0	60.0	6.4%
	Clear Occurreace Rep.	5.0	4.0	20.0	2.1%
	Spare Veh. To Pool	5.0	4.0	20.0	2.1%
	Update S/Sheets	20.0	0.6	12.0	1.3%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
Parts Replenishment	Assess Inv. Levels	15.0	1.0	15.0	1.6%
	Request for Quotation	15.0	0.4	6.0	0.6%
	Obtain PO	17.5	0.4	7.0	0.7%
	Receive Parts	10.0	0.8	8.0	0.8%
	Replenish Stores	7.2	0.8	5.7	0.6%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
General	Fuel Logs	10.8	0.0	0.5	0.1%
	Kms Travelled	30.0	0.0	1.4	0.2%
	Special Events	25.8	0.4	10.3	1.1%
	Data Entry	180.0	0.2	36.0	3.8%
	Maint. Compliance	40.0	0.2	8.0	0.8%
	Managing Light Duties	44.2	1.0	44.2	4.7%
	Special Projects	240.0	0.2	48.0	5.1%
	STU Readiness	60.0	0.2	12.0	1.3%
	DEF Drums	30.0	1.0	30.0	3.2%
	Gov. Deals	420.0	0.0	6.7	0.7%
Commission Vehicle	Monitor Fleet	45.0	1.0	45.0	4.8%
	Receive New Vehicle	0.0	0.0	0.0	0.0%
	Preparation	820.0	0.1	43.0	4.6%
	In House Stocking	0.0	0.1	0.0	0.0%
	Amb. Commissioning	15.0	0.1	0.8	0.1%
	Deploy Vehicle	15.0	0.1	0.8	0.1%
	Update Systems	70.0	0.1	3.7	0.4%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
Decommissioning	Receive Vehicle	30.0	0.1	4.7	0.5%
	Remove	0.0	0.0	0.0	0.0%
	Restock Supplies	0.0	0.0	0.0	0.0%
	Final Prep	30.0	0.1	4.7	0.5%
	Sell Vehicle	130.0	0.1	6.8	0.7%
	Post Auction	130.0	0.1	6.8	0.7%
	Update Systems	60.0	0.1	3.1	0.3%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	0	0.0	0.0	0.0	0.0%
	Total Minutes/day:			341.6	
	Current FTE's(PYs):		2.0		
		FTE Equiv.			
	Total Annual Hours Required:	3892			
	Total Annual Hours Available:	3216			
	Total FTE's Required:	2.42			
	Gap(+over/-under):	-0.42			

Available Time Assumptions	
Annual Days Available:	229.7
Actual Hours/day Available:	7.0

Working Time Assumptions	
Days per week:	5
Days Per Month:	21
Days Per Year:	248

Summary

	Scheduled Maint. & Repairs	Parts Replenishment	General	Commission Vehicle	Decommissioning
	1	2	3	4	5
Annual Hours Required:	2411.1	172.5	814.7	385.3	108.3
TOTAL annual Hours Required:	3892.0				
TOTAL Hours Available:	3216.0				
GAP - Hours:	676.0				
FTE's Required:	2.42				
Staffing Over (-Under):	**-0.42**				

10. Appendix B – Logistics Staffing Analysis – Current State
11. Appendix C – Logistics Staffing Analysis – Future State
12. Appendix D – Financial Options Analysis – 30 Year Cash Flows

MEMO

TO: Niagara Region

FROM: Robert Eland, Architect, Architecture49

Shawn Chow, Senior Project Manager, WSP

SUBJECT: NEMS Primary Hub Site Selection Weighed Evaluation Table and Site Selection Manual for Site Proponents

DATE: July 24, 2019

1.0 Introduction

WSP Canada Group Limited ("WSP") and Architecture49 ("A49") were retained by the Region of Niagara ("the Region") to prepare a site suitability analysis and evaluation framework to guide the Region in assessing locations to accommodate its proposed Niagara Emergency Medical Services (NEMS) Primary Hub. The application of the Framework work is outside the scope of this assignment as the Region is still considering how it will compile candidate locations for consideration. The NEMS Primary Hub Site Selection Framework will include:

- A Site Selection Manual for Site Proponents;
- Appendix A – General Boundary Map;
- Appendix B – Areas within 10, 12 and 14 Minute Travel Time of Regional City Centres; and,
- A Site Selection Criteria Weighed Table (Appendix C).

WSP has reviewed the relevant background reports, engaged with key staff at the Region of Niagara, including representatives from NEMS, Real Estate Services, Planning and Development, and Geographic Information Systems (GIS), to understand the key issues that should be considered in site selection for a future EMS hub. WSP Planners and A49 Architects have prepared draft site selection criteria based on best planning principles and consultation with the project team and WSP colleagues in other relevant disciplines regarding topics such as site servicing and environmental features.

We have developed a two-stage Site Selection Criteria Weighed Table (Appendix C). The Stage 1 evaluation includes mandatory site selection criteria, which will be evaluated on a pass / fail basis. The Stage 1 criteria are considered essential requirements i.e. any "fail" will generally result in disqualification from further consideration. However, if less than 3 sites within the Urban Boundary pass the Stage 2 evaluation, then the Stage 2 evaluation will be opened to sites outside the Urban Boundary. The Stage 2 evaluation includes optional criteria, which will be considered based on the relative importance of individual factors within this group of factors.

This Site Selection Manual for Proponents will provide information regarding the recommended site selection criteria; justification for why such criteria is identified as being part of the Stage 1 Evaluation (pass / fail) or Stage 2 Evaluation (weighed criteria); and how the criteria in Stage 2 can be ranked and assist with narrowing down site options for the NEMS Primary Hub.

2.0 Stage 1 Evaluation Overview

The criteria included in the Stage 1 evaluation are all considered mandatory and of equal importance in selecting a site. A general boundary map is provided in Appendix A. This is provided as an "information only" tool to potential applicants illustrating the general boundary area the Region is interested in locating the NEMS Primary Hub. An overview of the evaluation criteria is listed below, organized under four (4) factor areas:

Physical Factors

1. Site has a minimum area of 9.8 acres, which is contiguous developable land.
2. Site is located over 30 metres away from any active rail line.

Transportation and Site Access

3. Site has vehicular access to at least two roads / road allowances and unobstructed access from both roads / road allowances to other roads.

Site Servicing and Utilities

4. Site has access to hydro services.
5. Site has access to gas services.
6. Site has access to water services (minimum 8 to 10-inch watermain).
7. Site has access to adjoining right-of-way with fibre optic infrastructure.

Land Use and Planning

8. Site is located within Urban Area Boundary under the Niagara Region Official Plan.

3.0 Stage 2 Evaluation Overview

The “optional” criteria included in the Stage 2 evaluation are considered desirable characteristics that would strengthen the suitability of this site. The weighting of these criteria reflect their relative importance in selecting a site.

3.1 Grouping by Factor Area

The Stage 2 Evaluation optional criteria was initially organized by factor areas as shown below:

Physical Factors

1. Size of the contiguous developable lands on the site (i.e. site area that is not already known to be constrained by Specialty Crop Areas, hazard lands or natural heritage features). Many of these mapped constraints are identified in the Regional Official Plan (ROP) or the Province of Ontario’s Natural Heritage Area mapping.
2. Location of site in relation to NEMS Areas within 10, 12 and 14 Minute Travel Time of Regional City Centres (Appendix B).
3. Separation distance of at least 100 m from residential areas.
4. Proximity to hiking and walking trails.
5. Sufficient separation distance from any Industrial uses that pose a risk to NEMS operations and a minimum separation distance of at least 300 m from Class III Industrial Facilities.
6. Availability of diesel engine fuelling stations within 3 km.
7. Site is vacant, available for purchase and construction immediately and free of any registered encumbrances.
8. Site is not significantly encumbered by vegetation and trees.
9. Environmental condition of site.
10. Site is not located under any known flight paths.

Site Servicing and Utilities

11. Site has access to municipal sanitary sewers from adjacent rights-of-way.
12. Site has access to municipal storm sewers from adjacent rights-of-way.

Transportation and Site Access

13. Number of vehicular access points.
14. Site has access to transit.
15. Site has 5-minute travel time (on average) to 400 series highways.
16. Site has 10-minute travel time (on average) to Regional City Centres (St. Catharines, Niagara Falls, Thorold and Niagara-on-the-Lake).

Environmental Constraints and Considerations

17. Site is not within a Conservation Authority Regulated Area.

Land Use and Planning

18. Site is located within the Urban Area Boundary under the Niagara Region Official Plan.
19. Site's Official Plan designation permits an EMS Hub.
20. Site's Zoning permits an EMS Hub.

Available Site Information

21. Existing Phase 1 Environmental Site Assessment (ESA) available for the site.
22. Existing Phase 2 ESA available for the site.
23. Existing Legal Survey available for the site.
24. Existing Topographic Survey available for the site.
25. Existing Stage 1 and / or Stage 2 Archaeological Assessment Report available for the site, confirming that no further archaeological assessment is required, and a copy of a Ministry of Tourism, Culture and Sport acknowledgment letter.
26. Existing Environmental Impact Study (EIS) or environmental due diligence available for the site.

3.2 Grouping by Priority

Having introduced the Stage 2 Evaluation factors by factor area, it is recommended that the Stage 2 Evaluation proceed based on the following priority groups, listed from most important to least important, as shown below:

Priority Group #1 – High Importance Criteria

1. Size of the contiguous developable lands on the site (i.e. site area that is not already known to be constrained by Specialty Crop Areas, hazard lands or natural heritage features. Many of these mapped constraints are identified in the Regional Official Plan (ROP) or the Province of Ontario's Natural Heritage Area mapping).
2. Location of site in relation to NEMS Areas within 10, 12 and 14 Minute Travel Time of Regional City Centres (Appendix B).
3. Sufficient separation distance from any Industrial uses that pose a risk to NEMS operations and a minimum separation distance of at least 300 m from Class III Industrial Facilities.
4. Site has access to municipal sanitary sewers from adjacent rights-of-way.
5. Site has access to municipal storm sewers from adjacent rights-of-way.
6. Site has 5-minute travel time (on average) to 400 series highways.
7. Site has 10-minute travel time (on average) to Regional City Centres (St. Catharines, Niagara Falls, Thorold and Niagara-on-the-Lake).
8. Site is located within the Urban Area Boundary under the Niagara Region Official Plan.

Priority Group #2 – Medium Importance Criteria

9. Separation distance of at least 100 m from residential areas.
10. Environmental condition of site.
11. Site's Official Plan designation permits an EMS hub.
12. Site's zoning permits an EMS Hub.
13. Site is within 500 m of at least one transit stop.
14. Existing Phase 1 ESA available for the site.
15. Existing Phase 2 ESA available for the site.
16. Number of vehicular access points.

Priority Group #3 – Least Important Criteria

17. Existing Legal Survey available for the site.
18. Existing Topographic Survey available for site.
19. Existing Stage 1 and / or Stage 2 Archaeological Assessment Report available for site, confirming that no further archaeological assessment is required, and a copy of a Ministry of Tourism, Culture and Sport acknowledgment letter.
20. Existing Environmental Impact Study (EIS) or environmental due diligence available for site.
21. Proximity to hiking and walking trails (within a 4-minute walk)
22. Site is vacant, available for purchase and construction immediately and free of registered encumbrances.
23. Site is not significantly encumbered by vegetation / trees.
24. Site is not within a Conservation Authority Regulated Area.
25. Availability of diesel engine fueling stations within 3 km.
26. Site is not located under any known flight paths.

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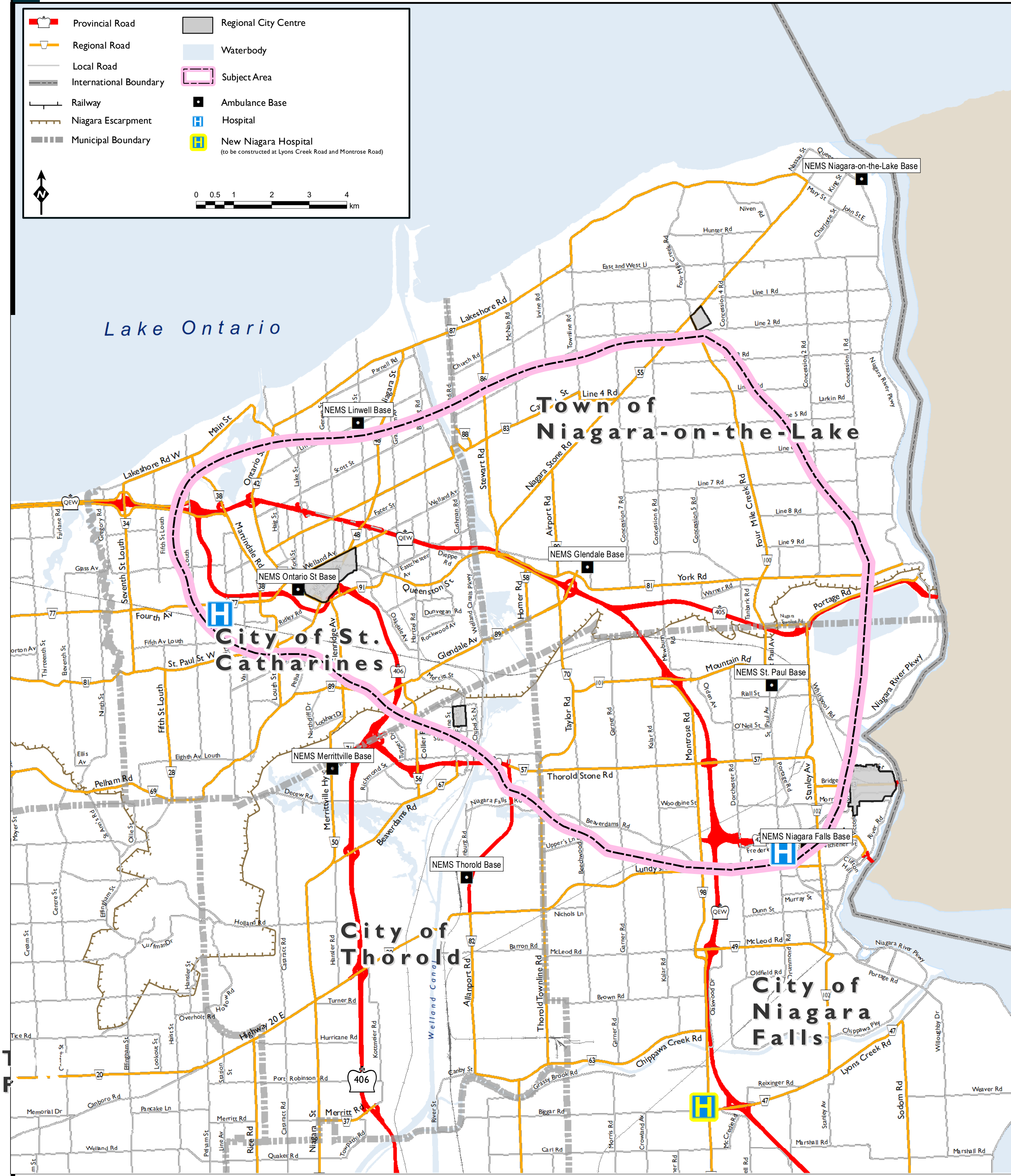
Site Selection Manual for Site Proponents

APPENDIX A

General Boundary Map



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