TASK 0 – PROJECT MANAGEMENT

Our team will manage the MATBUS Transit Facility Analysis and Development Strategy with an efficient project management approach. We are committed to coordinating regularly with the Metro COG Project Manager Michael Maddox, AICP, on development of the requested study. Our schedule adheres to the 12-month schedule you have outlined.

DELIVERABLE:

- Monthly progress and milestone reports for Metro COG. Invoices, provided monthly, will detail charges to the project by major work tasks in relation to the contracted scope of work.
- KLJ project management team will hold bi-weekly phone calls with Metro COG and MATBUS to assess project status and milestone development.

TASK 1 – PUBLIC AND STAKEHOLDER ENGAGEMENT

KLJ will develop a public and stakeholder engagement process to support the Transit Facility Analysis and Development Strategy to satisfy stakeholders and document public desires. Our approach assures the MATBUS technical team is able to understand the public and stakeholder views towards potential operational and facility changes proposed through the study.

PUBLIC ENGAGEMENT MEMORANDUM

As requested, we will work with Metro COG and MATBUS early in the study process to develop a public engagement memorandum that will guide the specific agreed to elements of the Public Participation Plan (PPP) for the study. As part of our proposal development, we feel strongly the following will be critical to develop and finalize a facility study and development strategy for MATBUS.

DELIVERABLE: *FOLLOWING STUDY REVIEW COMMITTEE #1, KLJ WILL PREPARE THE PUBLIC ENGAGEMENT MEMORANDUM. THE MEMORANDUM WILL BE CONSENTED BY MATBUS AND METRO COG PRIOR TO INITIATING PUBLIC OUTREACH AND ENGAGEMENT EFFORTS.*

STUDY REVIEW COMMITTEE (SRC)

We have budgeted for six (6) meetings with a full study review committee (SRC). The SRC will serve as the primary leadership to the overall development of the study. We envision the SRC to include key staff from MATBUS, Fargo Public Works (Fleet Services), Metro COG, and possibly elected representatives from the MAT Board, specifically from the Moorhead City Council and Fargo City Commission. The choreography of SRC meetings is demonstrated in our overall project schedule.

MILESTONES FOR EACH SRC AS FOLLOWS:

- ***SRC #1*** – Project Kick Off & Mobilization; review and discuss work plan, discuss and develop public engagement process; staff level discussion of key issues and opportunities;

- ***SRC #2*** – Present Existing Conditions Assessment; Recap stakeholder outreach (Round I) and GTC/MTG Working (Meeting #1);

- ***SRC #3*** – Projected Conditions Assessment; and GTC, MTG and Hub Analysis (Needs & Options); recap stakeholder outreach (Round II) recap GTC/MTG Working Group (Meeting #2);

- ***SRC #4*** – Review GTC, MTG and Hub Analysis (Concept Development); Review public input.

- **SRC #5** – Presented Draft GTC, MTG and Hub Analysis (Alternatives Assessment); Recap stakeholder outreach (Round III) and GTC/MTG Working Group (Meeting #3); Review public input.

- ***SRC #6*** – Present Final Draft MATBUS Facility Analysis & Development Strategy.

GTC AND MTG WORKING GROUP MEETINGS

KLJ will schedule and facilitate no less than three (3) MTG and GTC working group meetings. These meetings will be critical to focusing on programming, utilization, and expansion analysis for both the GTC and MTG. The meetings are more open-ended than SRC meetings and may include a broader audience of MATBUS and city staff to assure more detailed and technical considerations are developed and refined regarding both facilities. Each working group meeting will occur as the study process unfolds from issues to concepts/options to development and agreement on final concepts for both facilities. The timing of each Working Group meeting will be as follows:

- Meeting #1 – Between SRC 1 and 2: Discuss system needs;
- Meeting #2 – between SRC #2 and #3: Review system options;
- Meeting #3 – In proximity to SRC #4: Review options/alternatives analysis.

STAKEHOLDER OUTREACH

KLJ has assumed a series of small group meetings with key stakeholders who will need to be partners in the development of existing and future transit facility development. We envision direct outreach with representatives from these entities at two (or possibly three points) in the planning process. Entities we see involved in stakeholder outreach will include:

- West Acres
- Center Mall
- M-State
- Moorhead Marriott
- Cashwise
- Wal-Mart

- Downtown Community Partnership (DCP)
- Others as determined necessary (e.g. MSUM, Concordia, NDSU, etc.)

To facilitate consistency in the process and consensus on the decision-making process, MATBUS and Metro COG will be involved with KLJ in all stakeholder meetings. Stakeholder meetings will be coordinated in tandem with the development of concepts and options for the GTC and overall Hub Analysis to ensure input and guidance from impacted and affected stakeholders.

RIDER OUTREACH AND PREFERENCE DEVELOPMENT

KLJ will work with the SRC to develop surveys to gain more detailed insight into a few critical focus areas of the study. Specifically, we see the need to gauge client and rider input on the GTC, West Acres, and Marriott Hubs specifically. Additionally, we see the need for more generalized outreach to riders on system-wide improvements to stop level needs facing MATBUS. To accommodate these needs we have prepared a tentative outline of potential surveys that will be needed to gauge rider and user input in the study:

GTC System Needs Survey – Gather input from MATBUS passengers on key needs and facilities available at the GTC.

West Acres System Needs Survey – Specific to the West Acres Hub, a user survey will be developed to gather input on the existing and future options for the West Acres Transit Hub, including an evaluation of ridership profile.

Marriott/M-State User Survey – MATBUS passengers would be surveyed on needs and options for the current Marriott/M-State facility needs.

General Transit Shelter Survey – A generalized system survey will be developed to gather more open-ended and site-specific comments from passengers on stop level amenities, including an on-line interactive comment map.

Driver Needs Survey – We propose a simple survey of MATBUS drivers to gather input on system improvements that they see as being helpful to improving their experience and experience of MATBUS customers.

Our team envisions that the surveys be combined into a coordinated set of surveys(s) and deployed strategically through several means. Rider alerts will be utilized to notify passengers. On-board survey and on-site survey takers will be considered to assist with gathering more one-on-one surveys. As part of the public engagement memorandum, the specific details of each survey tool will be more clearly refined.

PUBLIC MEETING ON POTENTIAL ROUTE CHANGES

Through development of Task 2.1 (described in further detail in the next section), if refinements are suggested and changes to existing MATBUS routes appear imminent, KLJ will suggest the

development of a separate public input meeting to gather rider input into potential changes. These may relate specifically to changes in Moorhead on Route 2, 3, 6, and 9. Since a substantial amount of public input was recently collected on the 2016 TDP, we propose additional public input on routes and route concepts ***if new or revised options are developed*** that create variations that are askew of those developed in the TDP. The process allows our team to manage public expectations and anxiety over potential changes in routes, and removes duplication and rider confusion.

Regardless of changes to routes or route structure, as a Federal planning process, at least one public comment period and public input meeting will be advertised as the end the of the planning process to ensure compliance with Metro COG's Public Participation Plan (PPP) and to ensure MATBUS has afforded public comment opportunities on proposed changes to its infrastructure. Final determination on specific details and format for public meeting(s) will be developed as part of the Public Engagement Memorandum.

DELIVERABLE: *TASK 1 DELIVERABLES WILL BE DEVELOPED ITERATIVELY THROUGHOUT THE PROCESS. KLJ WILL PREPARE SUMMARIES OF SURVEY RESULTS, PUBLIC INPUT, AND STAKEHOLDER INPUT ON AN ONGOING BASIS. AT THE END OF THE STUDY PROCESS, KLJ WILL PREPARE A FULL APPENDIX TO THE FINAL REPORT WITH ALL COLLECTED PUBLIC AND STAKEHOLDER INPUT.*

Task 1 Sub Consultant Tasks

Chris Hawley Architects

- Participate in SRC meetings and stakeholder meetings.

Foss

- Participate in SRC meetings, stakeholder meetings and MTG/GTC working group meetings.

Kimley-Horn & Associates

- Participate in SRC Meetings, public meeting(s), and MTG/GTC working group meetings.

TASK 2 – EXISTING AND PROJECTED SYSTEM ANALYSIS

Our approach develops two critical inputs into the overall analysis of the Transit Facility Analysis. Our first point of analysis focuses on understanding and developing an Operational Analysis on existing and projected growth of the MATBUS system. Secondly, we will work with MATBUS to understand potential changes in both administrative and organizational frameworks in place today, which will drive facility needs decisions at the both the MTG and the GTC.

Task 2.1 – Operational Analysis

Operational analysis will be developed based on three levels of growth. We will work with MATBUS and Metro COG to finalize these scenarios early in the study process to establish consensus on the specific growth assumptions within each scenario.

However, our initial approach is based on the three operational scenarios defined below:

SCENARIO 1 – EXISTING + COMMITTED – Scenario 1 will explore changes imminent in the next 12 to 18 months. These would include the new Sanford service (Route 24) and extended evening services in Moorhead. These are short-term needs to assure that system facilities are improved to meet specific service improvements.

SCENARIO 2 – CURRENT TDP (YEAR 2020) – Scenario 2 unfolds and reanalyzes all recommended improvements of the TDP through year 2020. This analysis is critical to understanding a shorter-term list of likely facility needs to respond to new and revised service levels. This would include more discussion of proposed new routes in Fargo/West Fargo and recommended service changes to Routes 2, 3, 5, and 9 in Moorhead.

SCENARIO 3 – MID TO LONG-RANGE "OPERATIONAL CONSTRUCT" – Scenario 3 is a visionary exercise taking a longer-range view of planned transit expansion and service options. Scenario 3 makes sure that short to mid-term decision-making is done in the context of longer-range service concepts. Scenario 3 explores impacts of additional high frequency transit corridors (headways of 15 minutes or less) or investments in bus rapid transit (BRT). Scenario 3 explores options impacting MATBUS facilities such as park-n-ride and rideshare services that are likely needed in longer-term. Fleshing out these concepts allows for development of a blue print for long-term facility investments.

Completion of Task 2.1 will provide two critical inputs to guide the overall Transit Facility Analysis and Development Strategy for MATBUS. It will provide a range of operational system needs to understand potential changes and improvements at all existing major, minor, and stop level transfer sites and boarding areas. Task 2.1 also provides MATBUS a sense of overall areas where the consideration of new or future transfer sites and boarding areas may be needed, many of these are likely to be exposed in Scenario 2 and Scenario 3. Additionally, Task 2.1 provides critical inputs into the projected rolling stock (fleet) for MATBUS. Understanding future rolling stock will assist with efforts related to the MTG discussed in Task 4.

DELIVERABLE: *TASK 2.1 RESULTS IN TRANSIT OPERATIONAL ANALYSIS OF THE THREE SCENARIOS OF FUTURE TRANSIT LEVELS FOR MATBUS. EACH SCENARIO IS USED TO PROVIDE CRITICAL INPUTS INTO LATER TASKS WITHIN THE OVERALL STUDY PROCESS.*

Task 2.2 – Administrative and Organizational Analysis

A critical input into space utilization and programming needs at both the GTC and the MTG will be dependent on organizational and administrative changes to MATBUS. Task 2.2 will work MATBUS and Metro COG through a process of understanding the potential changes to administrative and organizational procedures. Task 2.2 is not intended to select a preferred pathway for changes in structure or staff of MATBUS. However, it should establish a more detailed framework that can provide the needed inputs to understand how to plan for potential programming changes at both the GTC and MTG. We will build from concepts outlined in the TDP, and translate that consensus into how the programming for the GTC and MTG are planned for in the future. Specifically, we will look at the following:

PROJECTED STAFFING LEVELS – MATBUS has seen measurable growth in staffing levels since they moved into the MTG. KLJ will work with MATBUS to determine anticipated size and makeup of staff based on projected system growth trends. As MATBUS continues to evaluate options to streamline into more of a transit authority, potential new staffing needs may need to be accounted for in the administrative areas of the GTC and MTG.

CHANGES IN CONTRACTED OPERATIONS – Currently, MATBUS contracts for fixed route and paratransit drivers and driver management services. Fixed route dispatchers are currently also contacted employees. Some smaller services such as shelter maintenance, janitorial, and security services are all contacted by MATBUS. Understanding future options for these services will impact space and facility needs facing MATBUS. These considerations also impact future staff levels.

CHANGES IN LOCATION OF VARIOUS MATBUS FUNCTIONS – Currently MATBUS administrative and dispatching functions are split between the GTC and MTG. As part of our analysis of both facilities and in relation to future staff levels, we need to develop an approach to how MATBUS will locate and optimize various functions of its current and projected operations.

DELIVERABLE: *TASK 2.2 PROVIDES A CLEAR SUMMARY OF EXISTING AND PROJECTED STAFFING ASSUMPTIONS FOR MATBUS. THESE ASSUMPTIONS ARE USED AS DIRECT INPUTS INTO THE DEVELOPMENT OF MAJOR FACILITY PLANNING AT THE GTC AND MTG.*

Task 2.3 – Review and Consideration of Agreements

MATBUS, including its major facilities such as the GTC and MTG, are jointly operated through a series of Joint Powers Agreements (JPA) between the City of Fargo and City of Moorhead. As Task 2, 3, and 4 unfold, our approach is to review the details of each existing JPA to start an outline on how these agreements may need to change to reflect the evolving direction of potential changes to the MTG, GTC, or various modifications to staff and contractor roles within the overall MATBUS organization chart.

As the Transit Facility Analysis and Development Strategy is pursued, our team will work with MATBUS to review and understand potential changes and modifications needed to existing JPAs. We will evaluate each of the three primary JPAs that have historically held MATBUS together:

DELIVERABLE: *TASK 2.3 PROVIDES A CLEAR SET OF RECOMMENDATIONS TO UPDATE AND POSSIBLY CONSOLIDATE EXISTING JPAS TO MORE ACCURATELY REFLECT EXISTING AND PROJECTED OPERATIONAL AND FACILITY NEEDS FACING MATBUS.*

Task 2 Sub Consultant Tasks

Chris Hawley Architects

- Assistance with discussions of development of programming requirements for the West Acres, Marriot, and bus stop (generic, not site specific) sites as a result of the finding of Task 2. Integration of Task 2 inputs into future tasks.

Foss

- Assistance with discussions of programming requirements for the GTC and MTG sites as a result of the finding of Task 2. Integration of Task 2 inputs into future tasks.

Kimley-Horn

- Assist with route scenario development and operational considerations related to future system growth (Task 2.1).
- Review and evaluate previous route recommendations from the TDP to determine options for route changes in tandem with the potential Hub options (Task 2.1).

TASK 3 – HUB ANALYSIS

Task 3 is based upon the Operational Analysis developed in Task 2, where existing and projected transit services are explored and documented. Changes and variations in existing future MATBUS service are transposed on existing hubs to determine potential changes, modifications, improvements, or relocations to existing facilities.

Task 3 is separated into three tiers of analysis to recognize the varying degree of importance and complexity for each point of analysis. Developing three tiers provides MATBUS the ability to better examine each type of transit boarding system.

The KLJ team will assess the existing and future locations for the bus stops and transit hubs (transit centers) utilizing information based on the Transit Cooperative Research Report (TCRP) 165 – Transit Capacity and Quality of Service Manual regarding levels of service for bus transit transfer centers, peer transit agencies, and national best practices. Based on the assessment, a list of

advantages and disadvantages will be compiled for each transit hub location and fixed-route bus stop. These will be compared to the goals and objectives developed by the project team.

A performance measure matrix will be used to present the analysis results, including estimated facility costs and operational cost increases. The performance measures allow the project team to score each location in comparison to a cost-benefit analysis. Sites with the lowest cost-to-benefit ratio should have the greatest benefit for the community, transit users, and transit agency.

Inherent throughout Task 3 will be a safety and security assessment of major and minor hubs and significant boarding locations throughout the MATBUS system. The intent of the safety and security assessment is to verify compliance with FTA guidance. This also ensures later stages of the planning process have needed inputs regarding opportunities to improve safety and security options for MATBUS.

Task 3.1 – Major Systems Analysis

Task 3.1 will evaluate what we have identified to be the major system MATBUS hubs. Our analysis uses output from Task 2 to start to develop a framework of existing and projected needs at each hub. Major systems analysis will look at the following three locations:

Our analysis will utilize output from Task 2, as well as input from the METRO COG, MATBUS, stakeholders, and the public, to develop a framework of existing and projected needs at each hub. Specific design standards will be created for meeting key requirements at each location. The project team will use the assessment to determine the programming (layout analysis), operational scenarios, and improvement plan.

A key step in the analysis process will be examining the number of routes and passenger demand at each transfer point, as this governs the functionality, type, and size of the transit hub. The greater the number of routes and passengers using the facility, the more significant the facility's infrastructure needs to be.

By investigating the transit hub elements based upon the pre-set performance measures and TCRP Report 165's preferred operational standards, we will uncover any deficiencies in the existing and future locations.

OPERATIONAL ASSESSMENT

Following is the assessment process that will be used to determine the benefits and disadvantages of each transit hub location based upon deficiencies of the existing and future locations.

1. IDENTIFY THE NUMBER OF ROUTES USING THE TRANSFER POINT

   Assess route operations (such as fixed, commuter, express, paratransit, arterial, and bus rapid transit)

2. DETERMINE THE FREQUENCY OF EACH ROUTE

3. EXAMINE DWELL TIME FOR EACH ROUTE AND VEHICLE

   Includes dwell time, clearance time, dwell time variability, and failure rate

4. ANALYZE THE NUMBER OF PASSENGERS TRANSFERRING BETWEEN ROUTES
5. IDENTIFY FACILITY LAYOUT

   Number of loading areas provided

   Loading area design

   Traffic control

6. DETERMINE PEDESTRIAN CIRCULATION
7. ASSESS PASSENGER AMENITIES
8. EXAMINE PASSENGER ORIGINS AND DESTINATIONS
9. ANALYZE ACCESS TO EMPLOYMENT, EDUCATION, MEDICAL, AND HOUSING WITHIN 1,200 AND 2,500-FOOT WALKING DISTANCES
10. IDENTIFY TRAVEL TIME IMPACT ON ROUTES
11. MITIGATE TRAVEL DELAYS AND ANY INCREASES IN CAPITAL AND OPERATIONAL COSTS

WEST ACRES

The current West Acres hub location raises concerns for the mall, as it is perceived by mall management to be problematic to their operations. Concerns have been raised that buses encroach on the pedestrian walkway and are causing the roads to deteriorate. A major issue expressed to MATBUS was loitering, and bus stacking that blocks the emergency exit and deliveries area located nearby the current bus stop. As these concerns are considered, it will also be necessary to identify alternative locations that consider safe pedestrian movements, account for passengers with disabilities, provide opportunity for growth on the MATBUS system, minimizes impacts to existing routes, and allow drivers on routes initiating from the West Acres site access to restroom facilities. Our analysis will evaluate the impact to FTA funding used to construct the original site. The study will also include a user survey to determine how the existing hub is being utilized; are passengers using the hub to transfer or is the mall their destination; to better accommodate the users, and provide stakeholders with an in-depth look at how the hub is impacting West Acres.

We see several available options being developed for the West Acres Transit Hub. All options reviewed at West Acres will be compared to the existing condition to determine the feasibility and impacts of the relocation. Considerations for a new site will include MATBUS and user amenities, route times and lengths, user safety, availability for bus stacking, room for future expansion, and ADA accessibility. Possible relocation options include the following:

DO NOTHING/MODIFIED NO BUILD – Would Constitute a Do-Nothing option to evaluate changes and improvements to the existing Hub at West Acres with a major relocation.

ON SITE OPTIONS – Would evaluate a series of options (2-3) for moving the current Hub location to another location generally on the West Acres site.

OFF SITE OPTION – Based on work with the SRC, as many as two options would be evaluated for relocating the Hub off the West Acres property.

We will work with MATBUS and West Acres to refine and develop a range of possible options, evaluating and assessing the advantages and disadvantages of each. This process includes considerable input from MATBUS passengers.

GTC

The GTC is the primary hub for the entire MATBUS System. Maintaining and improving operations to align with the projected growth of the system, as outlined in Task 2, will be critical to the facility's future success. In addition, our analysis will utilize the guidelines outlined in the TCRP Report 165 to assist with the development facility space planning needs for the GTC as it relates to the passenger space requirements and recommendations.

The GTC currently houses the main dispatch and IT operations for the MATBUS system. It also includes a driver lounge, lockers, offices, breakroom, conference rooms, waiting area, restrooms, storage, and mechanical/electrical space. The total footprint of the building is approximately 8,000 square feet, of which nearly 5,750 square feet is underutilized meeting rooms and public space. Providing a thorough review of the existing space, operational needs, and future growth will be the primary focus of the GTC hub analysis. Our team will perform this review concurrently with our review of the MTG facility to identify areas of overlap and opportunities for consolidation. Consideration will also be given to repairs identified in KLJ's 2016 Preliminary Engineering Report (PER) for the GTC.

Other major considerations at the GTC involve working with MATBUS and the City of Fargo Engineering Department on the imminent reconstruction of NP Avenue. Changes to NP Avenue can have a varying range of impacts to MATBUS operations into and out of downtown. Analysis to changes to NP Avenue will be yet another great opportunity to evaluate options to improve the bus pulse at the GTC.

MARRIOTT/M-STATE

As critical pivot point in the MATBUS operation, a detailed evaluation and assessment of options at M-State and the Marriott are critical to the success of the Transit Facility Analysis and Development Strategy. Several long-standing route changes were again forwarded in the 2016-2020 TDP. A cornerstone of the analysis on the Marriott and M-State relate more to finding a best-fit route operational construction for Route 2, 3, 5, and 9. Once these decisions are made, more detailed analysis can be done related to the facility infrastructure needed to support those routes.

DELIVERABLE: *TASK 3.1 WILL BE DEVELOPED INCREMENTALLY THROUGHOUT THE PROCESS AND DEVELOPED AS THREE SEPARATE ELEMENTS IN THE OVERALL FINAL REPORT. THIS WILL COVER OPTIONS*

AND RECOMMENDATIONS FOR THE WEST ACRES HUB ANALYSIS, GTC HUB ANALYSIS, AND MARRIOTT/M-STATE. INCLUDED ARE THE OVERALL SITE DESIGN REQUIREMENTS FOR THESE MAJOR SYSTEM HUBS.

Task 3.2 – Minor Systems Analysis

Task 3.2 will evaluate a series of minor system hubs currently operating within the MATBUS infrastructure. These minor systems currently require some level of improvement. Task 3.2 will utilize output from Task 2 – as well as input from the Metro COG, MATBUS, stakeholders, and the public – to develop a framework of existing and planned improvements at each hub. Considerations will be given to user/driver amenities, ADA accessibility, park-n-ride opportunities, real-time video displays, and security/lighting upgrades in addition to other items that may be identified in Tasks 1 and 2 of the study. In addition, an outline of system requirements will be developed for MATBUS to use for future hubs. This sub-task will evaluate the minor MATBUS hubs and will be applied to the three minor transit hubs:

MINOR SYSTEMS OPERATIONAL ASSESSMENT

The project team will employ a similar evaluation process to that used in sub-task 3.1. Operational scenarios will be generated if there is a need to relocate the minor hub. Implementation plans will detail new locations and improvements to existing locations. Following is the assessment process for facility comparison at each minor hub location.

1. IDENTIFY THE NUMBER OF ROUTES USING THE TRANSFER POINT
   Assess route operations (such as fixed, commuter, express, paratransit, arterial, and bus rapid transit)
2. DETERMINE THE FREQUENCY OF EACH ROUTE
3. EXAMINE DWELL TIME FOR EACH ROUTE AND VEHICLE
   Includes dwell time, clearance time, dwell time variability, and failure rate
4. ANALYZE THE NUMBER OF PASSENGERS TRANSFERRING BETWEEN ROUTES
5. IDENTIFY FACILITY LAYOUT
   Number of loading areas provided
   Loading area design
   Traffic control

DELIVERABLE: *TASK 3.2 WILL BE DEVELOPED INCREMENTALLY THROUGHOUT THE PROCESS. THE MINOR SYSTEMS ANALYSIS RESULTS IN A DETAILED SUMMARY REPORT ADDRESSING EACH OF THE MINOR SYSTEMS EVALUATED BASED ON THE METRIC DISCUSSED IN TASK 3.2. INCLUDED ARE OVERALL SITE DESIGN REQUIREMENTS FOR EXISTING AND FUTURE MINOR SYSTEM HUBS.*

Task 3.3 – Bus Stop Analysis

Bus stop analysis will be completed based upon the existing and projected conditions, as well as the resulting operational scenarios, developed in Task 2. This sub-task verifies the current and projected on-street boarding infrastructure is adequate to meet transit needs. System-wide standards will be created to meet key requirements at on-street boarding locations. The project team will generate performance measures for bus stops based on the most current available boarding data and a graduated scale of the number of boardings at each bus stop.

MAJOR BOARDING LOCATIONS

Bus stop locations with more than 75 boardings per day will be assessed based on the following process.

- Number of loading areas provided — two loading areas will be able to accommodate more buses than a single loading area, but not necessarily two times as many
- Loading area design — determines how much extra capacity each additional loading area will provide
- Traffic control — traffic signals may constrain the number of buses that can enter or leave a bus stop during a given period of time
    - If a red traffic signal prevents a bus from leaving a bus stop, the bus will occupy the stop longer, thereby decreasing the bus stop capacity.
    - Based on the traffic operational conditions, we may need to assess if a bus stop needs to be moved to either the near-side or far-side of an intersection or whether a mid-block location would function better (as shown in Exhibit 6).
- Stop amenities
- Linkages to adjacent land uses
  - Spacing between bus stops — based on land use density
    - The lower the land use density and lower the route frequency, the higher the level of amenities need to be in order to make sure the bus stop is comfortable and safe.

MINOR BOARDING LOCATIONS

Bus stop locations with 25 to 75 boardings per day will be assessed for amenities, including concrete pedestrian pad, shelter, lighting, sidewalk linking to adjacent land uses, ADA ramp, bench, bicycle rack, and trash can.

STEP LEVEL RECOMMENDATIONS

Based on the bus stop inventory and assessment (as well as input from the Metro COG, MATBUS, stakeholders, and public), the project team will develop a matrix listing the recommended modifications for the transit stops by route and number of passenger boardings. The implementation plan will include the following:

DELIVERABLE: *TASK 3.3 WILL RESULT IN A SET OF RECOMMENDATIONS FOR EACH BUS STOP WITH MORE THAN 25 DAILY BOARDINGS, NOT OTHERWISE DISCUSSED IN THE MAJOR OR MINOR SYSTEMS ANALYSIS. INCLUDED ARE OVERALL SITE DESIGN REQUIREMENTS FOR EXISTING AND FUTURE STOP LEVEL AMENITIES AND FACILITIES.*

Task 3 Sub Consultant Tasks

Chris Hawley Architects

- Review of *Transit Capacity and Quality of Service Manual* and information gathered in Tasks 1 and 2 as it relates to the West Acres hub and other minor hubs identified above.
- Assist KLJ in preparation of up to 2 new hub options (spatial layout) for the West Acres hub, including various floor plan concepts to align with operational needs and amenities identified in previous tasks.
- Assist KLJ with an opinion of cost for new hub options for comparison to the existing West Acres site.
- Assist with the preparation of up to 2 options to improve existing West Acres hub with operational needs and amenities provided in previous tasks. Include opinions of cost for options.
- Analysis and preparation of recommendations and up to 2 options to improve operations/amenities for the Marriot hub, and up to 2 concepts (spatial layout) for a new bus shelter (stand alone, not site specific).
- Provide recommendations for a standard guideline/program (spatial requirements and amenities) to follow for renovation and installation of new hubs.

Foss Architecture Interiors

- Review of *Transit Capacity and Quality of Service Manual* and information gathered in Tasks 1 and 2 as it relates to the GTC.
- Review of Preliminary Engineering Report prepared by KLJ in August 2016 for improvements outlined for the GTC.
- Preparation of recommendations and options to improve operations/amenities and better utilize space at the GTC, which may be combined with the assessment/feasibility study for the MTG.
- Improvements will be based on best/maximum use of current space (may include shared space between MTG and GTC) and potential opportunities for expansion for future growth.
- Opinions of cost will be developed for all options.

Kimley-Horn

- Assist with development of facility and operational concepts at West Acres, Marriot and the GTC to maximize bus pulse, transfer and release (Task 3.1), two options at each site.

- Operational and route analysis to assist with understanding route impacts of various hub concepts at the major hub locations (Task 3.1).
- Operational evaluation and review of potential changes related to minor hub analysis (Task 3.2).

TASK 4 – METRO TRANSIT GARAGE

Analysis of the MTG will be a critical component of the overall Transit Facility Analysis. Our approach to addressing needs at the MTG is broken in four component parts, as described on the following page, to assure MATBUS can understand future system needs. The focus of the study will be to assess the existing conditions, evaluate potential growth opportunities on-site and within existing MATBUS infrastructure, review options to consolidate operations between the MTG and GTC, utilize existing space at the GTC, and perform an analysis on alternate vehicle storage and improved flow of vehicles within the existing garage.

Possibilities for expansion at the MTG include adding a second story to the existing office space and infill of the existing lot to the southeast. In addition to on-site expansion of the MTG, consolidation of operations with the GTC may also be considered. It is apparent some of the existing space at the GTC could be renovated to better meet the operational needs of MATBUS. Of the 8,000 square feet of interior space, nearly seventy percent of it is underutilized public and administrative space. Evaluation of the GTC concurrently with the MTG site will provide continuity between both facilities. KLJ will utilize this opportunity to work with MATBUS to take a global look at the operations for the system, determine how they are connected, outline opportunities to streamline operations, and clearly identify existing infrastructure needs within the MATBUS system.

Our team will complete an analysis on the vehicle storage layout in the MTG to determine if a more efficient layout is feasible. The analysis will incorporate the fleet data projected from Task 2 and evaluate the layout of the existing garage with the assistance of the AutoTurn software. In addition, KLJ will review the existing structural layout to determine if modifications to the structural system would be a cost-effective option to increase the short-term and long-term vehicle storage capacity.

Task 4.1 – MTG Analysis and Expansion Programming

PROGRAMMING – Based on outputs from Task 2 related to operational, administrative, and organizational projections, a series of programming options will be developed for the MTG.

UTILIZATION – Space utilization will be explored related to both office (administrative) elements of the MTG. Additionally, our approach uses projected rolling stock growth projections to develop a utilization and needs analysis for vehicle maintenance and storage areas at the MTG.

EXPANSION – The MTG needs to be expanded in the short to mid-term. Our approach will explore a range of options to expand the current footprint of the MTG.

IMPLEMENTATION – Because changes at the MTG may be incremental, our approach will layout an implementation and phasing plan that prioritizes improvements and allows funding to be

secured for the project over multiple budget cycles. The improvement plan will be developed with the growth scenarios outlined in Task 2.

DELIVERABLE: *TASK 4 RESULTS IN THE MTG EXPANSION ANALYSIS. THE ANALYSIS IS DEVELOPED INCREMENTALLY, AND RESULTS IN A FINAL RECOMMENDED CONCEPT FOR ADDRESSING EXPANSION NEEDS AT THE MTG.*

Task 4 Sub consultant Deliverable

Foss Architecture Interiors

- Evaluate Best/Maximum use of current MTG space (may include shared space between MTG and GTC)
- Potential opportunities for expansion for future growth on the MTG site.
- Preparation of recommendations and options to improve operations, review opportunities to consolidate operations between MTG and GTC to maximize space at MTG and utilize excess space at GTC, and provide for future expansion/growth. Opinions of cost will be provided.

TASK 5 –FINAL REPORT

Through the development of Task 1, 2, 3, and 4, several interim deliverables will be developed by KLJ. In the end, we will develop a final report that consolidates each interrelated deliverable discussed throughout our scope of work. To improve usability of the major findings, KLJ will prepare an executive summary that chronicles the major recommendations of the study. As requested, we will provide 25 hard copies of the final report.

Task 5 Sub Consultant Work Tasks

Chris Hawley Architects

- Preparation of deliverables for interim status reports.
- Completion of architectural documents (narratives, chart/tables, drawings, cost estimates, etc.) related to the West Acres hub and minor hubs for incorporation into KLJ's final report.

Foss Architecture Interiors

- Preparation of deliverables for interim status reports.
- Completion of architectural documents (narratives, chart/tables, drawings, cost estimates, etc.) related to the MTG and GTC facilities for incorporation into KLJ's final report.

Kimley-Horn

- Preparation of interim deliverables integrated into final report.