# UPMC OAKLAND MASTER PLAN TRANSPORTATION STUDY



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MODIFICATIONS MADE ON NOVEMBER 14, 2014

September 4, 2013

- 6. Loss of 20 parking spaces within the existing Rangos Parking Garage.
- 7. Gain of 309 parking spaces within the Towerview Garage which is achieved through the removal of UPMC Shadyside employees from this facility following completion of the Luna garage on the UPMC Shadyside campus.
- 8. Expansion of the Western Psychiatric Institute and Clinic (WPIC) with a 9-story addition.

The 10 year master plan development components are presented in Figure 2.

#### 1.2.3 Land Development Control Status

The UPMC Oakland campus lies predominately within the EMI (Education/Medical Institutional) zoning district with some facilities within the adjacent OPR-C (Oakland Public Realm) zoning district. There are no proposed zoning changes with development of the 10 year master plan.

The existing zoning map for the study area is presented in Figure S-3.

#### 1.2.4 Principal Findings

#### Parking Analysis

Parking conditions have been evaluated under existing 2013 conditions and projected 2023 conditions with the campus 10 year master plan components in place. The parking supply/demand comparison performed for the future 2023 conditions with the master plan components indicates that at the peak period of the peak day, parking provided will be adequate to serve the needs of the campus.

The principal findings of the parking analysis include the following:

- 1. The total UPMC Oakland campus parking supply under 2023 projected conditions is 8,387 spaces (7,376 existing parking spaces + 1,011 gain in spaces).
  - The projected patient/visitor peak parking demand under 2023 projected conditions is 1,226 spaces assuming 100% parking efficiency and 1,362 spaces assuming 90% parking efficiency.
    - o 1,422 parking spaces are allocated for patient/visitor use under the projected 2023 conditions. Therefore, there will be adequate parking provided to serve the needs of the campus.
  - The projected employee peak parking demand under 2023 projected conditions is 6,157 spaces assuming 100% parking efficiency and 6,841 spaces assuming 90% parking efficiency.



#### 2.1 Summary of Development

A description of the proposed UPMC Oakland 2013 Master Plan is presented in this section.

#### 2.1.1 Location

The principal area of the transportation study is shown in Figure 1. As shown in Figure 2, the UPMC Oakland campus is centrally located within the Oakland section of the City of Pittsburgh. The main campus facilities are bounded by Sennott Street to the south, Terrace Street to the north, DeSoto Street/WPIC to the east, and Chesterfield Road to the west.

#### 2.1.2 Development Plan

The UPMC Oakland 10 year master plan projects consist of the following:

- Expansion of the existing Montefiore Parking Garage, which will provide an additional 456 parking spaces. No new access points/driveways for this garage will be constructed. Access will be provided via the existing UPMC Montefiore driveway on Terrace Street.
- 2. Construction of a new UPMC Presbyterian Parking Garage, which will provide 450 parking spaces. Access to this garage will be provided via a new driveway constructed at the intersection of Fifth Avenue and Atwood Street, and via a secondary access off the UPMC Presbyterian ED driveway. With construction of the garage, the main garage driveway approach will be incorporated into the existing Fifth Avenue/Atwood Street signal. In addition, a right-in/right-out only driveway will be provided on DeSoto Street, along with a full access unsignalized driveway on Lothrop Street.
- 3. Construction of a new bed tower for the existing UPMC Presbyterian Hospital.
- 4. Removal of the existing South Tower Garage (184 parking spaces).
- 5. Removal of the existing South Tower building.
- Loss of 20 parking spaces within the existing Rangos Parking Garage.
- Gain of 309 parking spaces within the Towerview Garage which is achieved through the removal of UPMC Shadyside employees from this facility following completion of the Luna garage on the UPMC Shadyside campus.
- 8. Expansion of the Western Psychiatric Institute and Clinic (WPIC) with a 9-story addition.

The 10 year master plan development components are presented in Figure 2.



- Forbes Avenue and Atwood Street
- Forbes Avenue and Oakland Avenue

The site location, study area, and study intersections are presented in Figure 1.

### 3.2 Study Area Land Use

#### 3.2.1 Existing Land Use

The UPMC Oakland campus currently occupies the site.

#### 3.2.2 Anticipated Future Development

The UPMC Oakland 10 year master plan projects consist of the following:

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- 8. Expansion of the Western Psychiatric Institute and Clinic (WPIC) with a 9-story addition.

The 10 year master plan development components are presented in Figure 2.

#### 3.2.3 Existing Zoning and Anticipated Changes

The UPMC Oakland campus lies predominately within the EMI (Education/Medical Institutional)





March 27, 2014

Ms. Susan Tymoczko Zoning Administrator City of Pittsburgh 200 Ross Street, 3<sup>rd</sup> Floor

Subject:

UPMC Oakland 2014 Master Plan

Addendum to UPMC Oakland Master Plan Transportation Study dated

September 4, 2013

**REVISIONS MADE ON NOVEMBER 14, 2014** 

Dear Ms. Tymoczko:

Trans Associates (TA) is pleased to submit this Addendum to the UPMC Master Plan Transportation Study, prepared by TA and dated September 4, 2013. This Addendum has been developed to address comments on the Transportation Study which were provided to TA by Ms. Kelsey Smolen of the Department of City Planning (DCP) on behalf of both DCP and the City of Pittsburgh Department of Public Works (DPW) staff. These comments were entitled "UPMC Oakland Master Plan Transportation Study September 4, 2013, (DCP & DPW Comments: 12/13/13)."

This Addendum addresses each of the DCP/DPW comments, with the comment listed first, followed by the response from TA.

COMMENT 1 - Overall, there is no discussion on trips generated from the new developments including adding 7 stories to the Western Psychiatric Institute and Clinic (this is the reviewer's comment) and the new bed tower for UPMC Presbyterian Hospital in the master plan. Include a trip generation section and methods utilized to determine the number of trips.

RESPONSE 1 – As stated in Section 4.2.1 of the report, trip generation for the new master plan components including the parking facilities (New Presbyterian Garage, Montefiore Garage expansion, and Towerview Garage change in usage) and for the removal of existing facilities (South Tower Garage) have been determined based on existing entering and exiting traffic volumes collected at the garage entrances. Based on the calculated AM and PM trip generation rates, the UPMC Oakland campus is projected to have an additional 442 AM peak hour trips (241 entering and 201 exiting) and 584 PM peak hour trips (51 entering and 179 exiting). The trip generation calculations are summarized in Table 26 of the report.

The current WPIC facility contains both patient areas and offices. The building is aging, with less than optimally sized spaces. The new nine story WPIC is planned to provide new, expanded space for the existing patient functions of WPIC, which will move into the new addition. Then the currently compressed office functions will be redistributed within the existing building, providing more suitable space. No increases in patient, visitor, physician or staff numbers are anticipated. Therefore, this expansion is not projected to have any increase in physician, employee or patient/visitor parking demand. No expansion of WPIC parking facilities is planned.



### COMMENT 2 - Page 5, the gain of 309 parking spaces, please clarify whether this is an actual gain of parking spaces or a gain of visitor/ patient parking spaces?

RESPONSE 2 – As part of the approval process for the UPMC Shadyside campus, the City required that, as interim parking mitigation for UPMC employee parkers, UPMC must allocate 309 spaces in the Towerview Garage on the UPMC Oakland campus for these UPMC Shadyside employee parkers. This parking was required to be served by shuttle service between the Towerview Garage and the UPMC Shadyside campus, with the Towerview parking to be used for daytime, Monday through Friday employee parking. These spaces are to remain available for and allocated to UPMC Shadyside employee parkers, until such time as the Luna Garage construction is completed. The Luna Garage is currently under construction, with completion estimated to occur in late 2014. When the Luna Garage is completed, the UPMC Shadyside employee parkers using the allocated 309 spaces in the Towerview Garage will be relocated into the Luna Garage, that is, back onto the UPMC Shadyside campus, which is their work site. At that time, the 309 spaces in the Towerview Garage will be reallocated back to UPMC Oakland for use by UPMC Oakland employees.

COMMENT 3 - Page 7, at the intersection of Terrace and Darragh, should/ can a left turn lane be added to the eastbound direction to ease congestion? This along with left turn advances could help to decrease the delay of both left turning movements along Terrace.

RESPONSE 3 – TA has prepared updated capacity and queuing analyses to determine if adding an eastbound left turn lane on Terrace Street at its intersection with Darragh Street would provide measureable benefits to the intersection and ease congestion. As shown in the Study, during the AM and PM peak hours, the eastbound left turn volume is 8 and 18 vehicles, respectively. As shown in the attached analyses in Tables 1 and 2, the addition of an exclusive left turn lane to accommodate this very low number of vehicles making left turns does not provide a significant advantage over existing conditions.

Additionally, based on the calculated conflict factors, the eastbound left turn movement does not necessitate a protected left turn phase. Addition of a protected left turn phase would only increase the delay for the through movements on all approaches. As shown in the attached analysis results, with the addition of a protected/permitted left turn phase, the westbound left turn delay significantly decreases, although still LOS F; however, the overall intersection has an increase in delay. On all approaches, queue lengths do not show any noticeable improvement. These results do not indicate that any positive benefit would result from the addition of an eastbound left turn lane on Terrace Street at Darragh Street. TA does not recommend installation of a left turn lane at this location.

COMMENT 4 - Page 7, Section 1.2.4, Page 34, Section 4.1.2, and Page 41, Section 4.4.1, capitalize the LOS.

RESPONSE 4 – These were typographical errors, and in each case should read LOS.

COMMENT 5 - Page 8, Section 1.2.5, will the Parking Garage driveway at Atwood and Fifth Avenue be aligned with the current configuration of Atwood and Fifth Ave. Show the intersection in a Figure.

RESPONSE 5 – The new Presbyterian Garage Driveway, which will serve the new Presbyterian Hospital bed tower, will be aligned with and opposite Atwood Street at its signalized intersection with Fifth Avenue. The new driveway will provide one ingress lane and one egress lane as shown in the attached Figure 1.

COMMENT 6 - Page 8, Section 1.2.5, will the Presbyterian Parking Garage Driveway at DeSoto Street between Fifth Avenue and O'Hara Street be a channelized right in/right out? Provide a figure.

RESPONSE 6 – The proposed UPMC Presbyterian Parking Garage Driveway on DeSoto Street will operate as a right-in/right-out only stop-controlled driveway with one ingress lane and one egress lane as shown in the attached Figure 1. The driveway will be designed as an urban driveway, without a channelizing island, in order to optimize pedestrian and ADA conditions.

## COMMENT 7 - Page 8, Section 1.2.5, will the new driveway be aligned with the Faulk Valet Parking Driveway?

RESPONSE 7 – The driveway system that will serve both the new Presbyterian Parking Garage and the existing Falk Clinic is shown in the attached Figure 1. The current driveway, located immediately adjacent to the east side of the Falk Clinic building on Fifth Avenue, will be removed. Access to the new Presbyterian Garage and Falk Clinic will be provided at three locations: the signalized intersection at Fifth Avenue/Atwood Street/new Presbyterian Garage Driveway; the new right in/right out only stop-controlled driveway on DeSoto Street between Fifth Avenue and O'Hara Street; and the existing full movement stop-controlled driveway on Lothrop Street which presently serves Falk Clinic and the UPMC South Tower Garage, which will be removed. Details of the proposed site driveways are shown in the attached Figure 1.

COMMENT 8 - Page 9, when crosswalks are repainted, they should be done in durable materials.

RESPONSE 8 – The requirement to use durable materials for crosswalk markings will be incorporated into construction plans in the future, as the master plan projects advance.

#### COMMENT 9 - Exhibit S3, the site should be highlighted.

RESPONSE 9 - Figures S3 and 3 have been modified to show the site location and are attached to this Addendum.

#### COMMENT 10 - Page 18, the concrete median begins at Robinson not Craft.

RESPONSE 10 – The following intersection descriptions have been corrected:

#### Fifth Avenue and Robinson Street/Maurice Street

The intersection of Fifth Avenue and Robinson Street/Maurice Street is controlled by a stop sign on its minor street approach, Robinson Street. Fifth Avenue is primarily a westbound arterial for general traffic, with an eastbound contra-flow exclusive bus lane. Fifth Avenue westbound consists of one shared left turn/through lane, one exclusive through lane, and one channelized right turn lane. Of the two through lanes, the southerly lane provides access to a ramp to the westbound Boulevard of the Allies and westbound I-376, as well as to westbound Fifth Avenue. The southerly westbound lane is separated by a round concrete curb median from the northerly through lane, which continues west on Fifth Avenue.

The eastbound Fifth Avenue approach consists of one exclusive contra-flow bus lane. The Maurice Street approach currently accesses the undeveloped Oakland Portal property. The southbound Robinson Street approach consists of a shared left turn (buses only)/through lane (stop controlled), and a channelized right turn lane (yield controlled). The posted speed limit is 25 mph within the study area.

#### Fifth Avenue and Craft Avenue

The intersection of Fifth Avenue and Craft Avenue is controlled by a coordinated pretimed traffic signal. The Fifth Avenue westbound approach consists of one exclusive left turn lane and two through lanes. The Fifth Avenue eastbound approach consists of one exclusive contra-flow bus only lane. The northbound Craft Avenue approach consists of one shared left turn/through lane. The southbound approach consists of one shared through/right turn lane on the Carlow University Lot A driveway. The posted speed limit is 25 mph within the study area.

COMMENT 11 - Page 23, Section 3.2.2.2, check the PM peak hour for 4:15 - 5:15 PM. Does the PM peak hour take into account just the 4-6 pm times or 2-6 pm times? Is there a hospital PM peak hour?

RESPONSE 11 – As stated in the study, the PM peak hour was calculated to be 4:30 to 5:30 PM.

Historically, the majority of patients cared for at hospitals were inpatients, with traffic in hospital areas reflecting standard inpatient services eight hour shifts, typically 7 AM to 3 PM, 3 PM to 11 PM and 11 PM to 7 AM. These shift change times, particularly for day shift leaving and evening shift arriving (between 2 PM and 4 PM), were often the highest traffic volume peak periods of the day. In immediate areas surrounding hospitals, this "hospital peak" period often had higher volumes than the typical PM peak period occurring between 4 PM and 6 PM. However, in recent years, much of patient care at hospitals has shifted to outpatient, daytime, weekday services. This has caused a shift in traffic activity toward the 4 PM to 6 PM peak period. Patient/visitor volumes are distributed throughout the day, without intense peak hour activity. In addition, for inpatient services, the eight hour shift for virtually every patient care giver has changed into a collection of eight, ten and twelve hour shifts, thereby diluting traffic peaking effects caused by employees.

For analysis purposes the 2:00 to 4:00 PM and 4:00 to 6:00 PM time periods were not calculated separately. Instead, the analysis takes into consideration the entire 2:00 to 6:00 PM time period and determined an overall study area peak hour. This calculated peak hour reflects the highest one hour traffic volumes throughout the study intersections. In this case, as in most if not all hospital areas TA has analyzed in the last decade, the peak traffic period in the hospital area has occurred during the PM peak period of 4 PM to 6 PM.

COMMENT 12 - Page 24, How can Robinson at Fifth, which is right out only, operate so poorly when there are major gaps in traffic provided by the signal at Craft that includes an exclusive pedestrian phase?

RESPONSE 12 — At the time of the submission of the report, the Oakland Portal Phase 2 mitigation plan was under development. Subsequently, the plan was modified to improve LOS at the intersection while accommodating all transportation modes. In this Addendum, the analysis of the intersection has been updated to reflect the most recent mitigation plans developed for the Oakland Portal Phase 2 project. With these changes in place, the revised 2023 combined analysis is presented in Table 1. As shown in Table 1, the intersection operates with a significantly improved LOS and significantly reduced delay. The revised HCM analysis sheets are attached to this letter for the 2023 combined condition.

COMMENT 13 - Page 25, Section 3.4, describe the method for calculating bicycle parking spaces for the new garages. Are additional bike parking facilities warranted by the new employees due to the hospital expansions? How many existing bicycle parking spaces are provided by UPMC now and how are they utilized?

RESPONSE 13 – Based on discussions with the Zoning Administrator and review of the Zoning Code, it was determined that additional bicycle spaces should be provided for the *new* parking spaces to be built as part of the Master Plan. As detailed in Section 3.4.3 of the report, that would mean a requirement for 45 bicycle spaces in the new Presbyterian Garage and 45 spaces in the Montefiore Garage addition.



COMMENT 14 - Page 25, Section 3.3.4, what is the distribution of the transportation modes for UPMC employees including buses, bicycles and pedestrians? How many new pedestrian and bicycle trips will be generated in the study area? Please include BRT.

RESPONSE 14 – Detailed UPMC alternative transportation mode data is presented in Tables 3 – 7 of this Addendum. Alternative commuter modes include carpools, vanpools, bicycle, public transit and walking, although no estimates of numbers of walkers are available. Table 3 details the numbers of persons using these modes, as well as UPMC shuttle ridership to/from UPMC off-site parking facilities to the UPMC work locations. Table 3 also shows the number of zipcar reservations made per guarter for travel between UPMC facilities during the work day.

UPMC Oakland bus pass users are detailed in Table 4. A total of 335 Port Authority bus passes are sold monthly, although there is some variation on this number each month. The actual number of transit users is most likely higher, as some employees may take transit but not purchase a monthly pass, such as part time employees only working a few days per month.

Table 5 details the locations of bicycle racks on the UPMC Oakland campus. Average daily bike counts, provided by UPMC, are detailed in Table 6. As shown in the table, 54 bikes on average were observed. However, this total most likely includes University of Pittsburgh students which are not related to the hospital.

Currently, approximately 5% of UPMC Oakland employees commute using alternative transportation modes. Estimates of BRT usage will be addressed in the ongoing Port Authority BRT planning study.

UPMC Oakland also provides electric vehicle charging stations at some locations, as detailed in Table 7.

COMMENT 15 - Page 29, how is there a seven story expansion (reviewer's comment) at WPIC but no growth in patients or visitors?

RESPONSE 15 – See the Response to Comment #1.

COMMENT 16 - Page 39, show a schematic sketch of the intersection recommendations for Fifth and Darragh.

RESPONSE 16 – The recommended intersection layout for the Fifth Avenue and Darragh Street intersection is presented in the attached Figure 1.

COMMENT 17 - figure 16, where are these trips originating from? There is no section in the report describing how these trips were determined. Also, is intersection of Lothrop Street, Sutherland Drive, and Terrace Street one or two intersections?



RESPONSE 17 – With the proposed 10 year UPMC Oakland master plan components, there will be a number of parking reallocations. These reallocations will be made in order to place patients as close to their destination as possible within the UPMC campus. In order to assign the projected site generated arrival and departure trips for the projected 2023 conditions, trips needed to first be removed from the existing garages so that they could be reassigned accordingly. The resultant parking garage removals were presented graphically in Figure 14. The total site generated trips were then distributed through the study intersections based on their destinations and the existing traffic patterns on the surrounding roadway network. As shown in Figure 15 of the report, the site generated trips arrive via the following distributions:

- Forbes Avenue 31.9%
- Fifth Avenue 23%
- Robinson Street 6.3%
- Centre Avenue EB 7.4%
- Centre Avenue WB 5.0%
- Halket Street 4.5%
- Darragh Street 4.4%
- Allequippa Street 3.8%
- O'Hara Street 3.7%
- McKee Place 2.9%
- Craft Avenue 2.5%
- Atwood Street 2.5%
- Meyran Avenue 1.9%

The intersections of Terrace Street with Sutherland Street and with Lothrop Street are actually two separate intersections and have been analyzed this way. It should be noted that Sutherland Street is a private road owned by the University of Pittsburgh and is only intermittently opened by the University. Additionally, TA has prepared a new recommended traffic control scheme for these intersections. As shown in the attached Figure 4, the intersection of Terrace and Lothrop Street should be reconfigured as a true all-way stop controlled intersection. This is accomplished by moving the existing stop sign on the westbound Terrace Street approach from Sutherland Street to Lothrop Street. Additionally all pedestrian crosswalks should be reconfigured and painted as shown in Figure 4.

COMMENT 18 - Table 17, for the additional parkers, were these parkers counted before the parking kiosks were installed. If so, they should be removed from the study. Very few cars park on Robinson Street after the installation of the kiosks.

RESPONSE 18 – The "additional parkers" referenced in Table 17 was the group of on-street parkers present on Robinson Street prior to the installation of the multi-space meters. TA estimated, based on our observations, that 50 of these parkers were UPMC employees. This



estimate was validated when, after the installation of the multi-space meters, the number of UPMC employee parkers using debit cards to park in the Towerview Garage increased significantly. Our approach was that the parking demand of these parkers belongs to UPMC, but the public parking supply on Robinson Street did not belong to UPMC. Therefore, we incorporated this parking demand into the overall UPMC Oakland employee parking demand analysis.

COMMENT 19 - Appendices, include sight distance calculation sheets and incident reports throughout the study area. Are there any incidents at Chesterfield Road and Fifth Avenue and the Kaufmann Garage Driveway at Fifth Avenue?

RESPONSE 19 – Sight distance measurements for the unsignalized study intersections are attached to this letter. As noted, limited sight distance is available for nearly all approaches, which is currently already addressed by these intersections being all-way stop controlled or stop controlled on the minor street approaches already.

TA requested the reportable crash data from PennDOT for the past three full calendar years of data (2010 – 2012). Crash data was not available for the 2013 year at the time of this letter. The total numbers of crashes (vehicular, pedestrian, and bicycle) at each intersection by year is summarized in Table 8 and in Figure 2 of this Addendum. Additionally, the numbers of pedestrian and bicycle crashes at each intersection were summarized in Tables 9 and 10, respectively. As shown in the tables, no intersection was the site of more than nine total crashes over the three year study period. The highest numbers of crashes involving pedestrians occurred on Forbes Avenue, with seven locations being the site of more than one pedestrian crash. There were no bicycle crashes included in the reportable crash data for the period of 2010 – 2012.

COMMENT 20 - Appendices, include existing traffic signal sheets for the signalized intersections within the study area.

RESPONSE 20 – The existing traffic signal permit drawings are attached to this letter.

COMMENT 21 - Appendix B, provide the traffic counts between 2-4 PM for the intersections of Fifth Avenue and Darragh Street, Fifth Avenue and Lothrop Street, and Forbes Avenue and Oakland Avenue.

RESPONSE 21 – Turning movement counts for the subject intersections between 2:00 and 4:00 PM are not available. Data for these counts were obtained from recent traffic impact studies performed for UPMC. Additionally, the intersection of Forbes Avenue and Oakland Avenue was not part of the original City-required scope of study, and was added at a later date due to discussions with the University of Pittsburgh. Turning movement counts for this intersection were then performed for only the already-determined typical study area peak period of 4:00 PM – 6:00 PM.



#### CONCLUSION

This concludes TA's response to all of the comments provided by DCP and DPW on the UPMC Oakland Master Plan Transportation Study.

Please contact me if you have any questions or require further information.

Yours truly,

Cynthia A. Jampole, P.E.

Principal

cc: Douglas Spies - UPMC

Brian Conroy – UPMC Don Charley – UPMC

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File upmco00-14034/TA Response to Comments from DPW 03-27-14