

JAN 13 1972	

DEPARTMENT OF SURGERY • VETERANS ADMINISTRATION HOSPITAL
54TH STREET AND 48TH AVENUE SOUTH • MINNEAPOLIS, MINNESOTA 55417

January 12, 1972

Lyle French, M.D.
Vice President, Health Sciences Affairs
Mayo Memorial Building
University of Minnesota
Minneapolis, Minnesota 55455

Dear Lyle:

I have received some information about the data site visit from VA Central Office which they would like to have available when they come. I am sending you the list today. When I get back in town I will call you to see if I may be of some assistance in making the arrangements.

- OK DL ✓ 1) Traffic patterns and traffic density into the University area.
- PM (2) 2) University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.
- OK DL ✓ 3) Plans for parking.
- OK PL ✓ 4) Availability of utilities such as sewage, electricity, water. —
- WS. 5) I wish to know whether the VA may purchase steam from the University or whether they will have to build their own plant.
- OK JC ✓ 6) The proposed cost amortization of Pioneer Hall.
- OK VA ✓ 7) Appraisals of the cost of the land from local real estate brokers.

Sincerely yours,

Edward W. Humphrey
EDWARD W. HUMPHREY, M.D.
Professor of Surgery

PHYSICAL PLANNING
340 MORRILL HALL • MINNEAPOLIS, MINNESOTA 55455
PHONE 373-2250 • AREA CODE 612

Office of the Assistant Vice President

January 17, 1972

TO: Paul Maupin
FROM: Hugh Peacock *HP*
SUBJECT: Site Visit from VA Central Office

Enclosed is a copy of a letter which Dr. Humphrey sent to Dr. French concerning the site visit by the VA central office. I would like you to convene a meeting and develop responses to those questions so that we are in a position to review them at the next coordinating meeting session on February 9th.

I suggest that you include in your discussions the following people: Dave Licht, Paul Kopietz, Warren Soderberg, Jim Condie and Vern Ausen.

HGSP/lh

cc: J. F. Brinkerhoff
C. L. Carlson
L. French
P. Cashman

attachment



PHYSICAL PLANT MAINTENANCE AND OPERATIONS
200 SHOPS BUILDING • MINNEAPOLIS, MINNESOTA 55455

January 25, 1972

To: H. G. Peacock, Asst. Vice President
From: W. E. Soderberg, Director, Physical Plant
Subject: Proposed Veterans Administration Building.

In answer to Paul Maupin's request on whether or not the Veterans Administration would be able to purchase steam from the University for a building at either of the two completed sites, I can only make the following comments.

We are presently adding 200,000 lbs. per hour capacity to the Plant and will be asking the 1973 Legislature to furnish funds for a second 200,000 lbs. per hour addition to the Plant. These two additions will bring the total Plant capacity (eight boilers) to 940,000 lbs. of steam per hour. This will give us a reliable steam capacity of 740,000 lbs. per hour with one standby unit of 200,000 lbs. per hour.

Our present peak loading is 425,000 lbs. per hour, which means that there will be available for the buildings now under construction or identified in future planning an expansion capacity of 315,000 lbs. per hour. We have broken this down somewhat generally in the following fashion:

Health Sciences Expansion	200,000 lbs. per hour
West Bank Expansion	50,000 lbs. per hour
East Bank Expansion	50,000 lbs. per hour

Thus, 15,000 lbs. per hour of flexible expansion is all that is available for additional buildings to be projected into planning programs for the East and West Bank Campus without still requiring further expansions or modifications to the central Heating Plant.

The tunnel and steam line construction now under way for the Health Sciences is for an expanded load of 200,000 lbs. per hour in that area. Piping now being installed is confined to one side of the tunnel so that there is space within the tunnel system for duplicating the steam service now being installed.

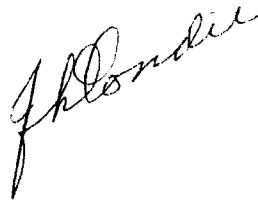
I believe it is important that we get some idea of steam requirements for the proposed Veterans Administration building before a firm commitment is made on the availability of steam from the central Heating Plant.

WES:VP
cc: C. L. Carlson
Paul Maupin ✓
Joseph Roback

W. E. Soderberg

January 28, 1972

TO: Paul Maupin
FROM: Jim Condie, Director of Housing
SUBJECT: Proposed VA Hospital Site



In a meeting which I attended recently concerning Health Sciences expansion as related to a proposed VA Hospital site, I was asked to provide you information concerning the Housing Office position as relates to Pioneer Hall and the site on which Pioneer Hall stands.

1. For the past several years, Pioneer Hall has been our most popular, by way of student demand, residence hall.
2. A recent survey involving 18 percent of the Pioneer residents indicated a 98 percent positive reaction about the hall at present and in favor of keeping the hall for a long period of time.
3. In the housing administration, we are not interested in considering losing Pioneer Hall as a residence for students at the University.
4. The question raised by Dr. Humphrey in his letter of January 12 to Dr. French related to the cost amortization of Pioneer Hall. If the Regents can be convinced that the Pioneer Hall site is the best site for a VA Hospital, then we will settle for no less than the replacement cost for the number and quality of units presently available in Pioneer. That cost figure changes from year to year.

If you wish further information from us concerning the proposal for a VA Hospital near the University campus, please let us know.

JDC:rls

cc Vern Carlson
Don Zander

RECEIVED

FEB 3 1972

UNIV. OF MINN.
HEALTH SCIENCE
PLANNING OFFICE

MEMORANDUM

TO: Paul Maupin
FROM: Dave Licht *DL*
DATE: 1 February 1972
SUBJECT: Veterans Administration Hospital - Information on Transportation

Of the information requested in Mr. Humphrey's January 12 letter to Vice President French, I was requested to compile materials and a response to items 1 and 3 which involve elements of transportation. I have attached a copy of the University's Transportation Inventory report which was prepared in May 1971. The report contains current information on travel and traffic to the University in as much detail as is available. Pages 24 through 63 contain information which would be of interest to the Veterans Administration. I would also emphasize that Mr. Humphrey's letter omits concern over transit service. In terms of access the University East Bank Campus can be reached from almost every point with the developed portion of the Twin Cities Metropolitan Area. This should be a plus factor for the University site.

I might also point out several developments which will effect this area in the future. The traffic flow through the Dartmouth Interchange area should be erased in the future as a result of the proposed connector to Washington Avenue. The connector will also directly serve the proposed parking ramp which is noted below.

In addition, I-35W North of I-94 will be opened to East Hennepin Avenue in the fall of 1972. This should ease much of the traffic in the Dartmouth Interchange area through the opening of two new options to the campus.

In terms of parking, and local Health Science area circulation, we will shortly initiate a parking and circulation study which should clearly

February 3, 1972

Mr. Warren Soderberg
Physical Plant Maintenance & Ops
Mpls. Campus

RE: Steam for Proposed
Veteran Administration Bldg.

Dear Mr. Soderberg:

We are in receipt of, and thank you for your letter of January 25, 1972 advising us of your plant capacity.

We fully realize that the present facility will not have enough capacity to handle this additional facility. However we definitely do feel that it would be more economical to house the entire heating plant in the same general site if it is feasible.

Our question to you at this time is: Is sufficient land available adjacent to your plant site to house this possible future requirement?

Awaiting your reply, I am

Sincerely,



Paul J. Maupin
Health Sciences Planning Coordinator

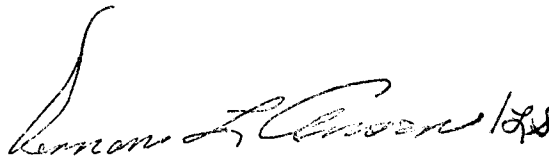
PJM:nbw
cc: Hugh Peacock



Office of the Assistant Vice President

February 4, 1972

TO: Paul Maupin
FROM: Vernon L. Ausen
SUBJECT: Veterans Hospital



In response to the meeting you convened on January 21 to discuss the implications of locating the Veterans Hospital adjacent to the University Medical Center, I am submitting estimates of land values for the blocks east and west of Oak Street.

East of Oak Street

The University has filed a petition to acquire privately held properties in two blocks east of Oak Street to provide a site for a parking ramp for the Health Sciences. These parcels are primarily occupied by single family residences, many now converted to rooming houses, although zoned for apartment buildings (R5).

Appraisals on twelve parcels indicate that the University will have to pay about \$6.25 per square foot of land on the average to acquire the property, and possibly more if the Commissioners appointed by the Court place a higher value on some of the parcels. This would indicate an acquisition cost of \$600,000 to \$650,000 per block (the typical block contains 99,000 square feet). If the block has several apartment houses on it, the cost could go higher.

West of Oak Street

The blocks occupied by mens residence halls west of Oak Street are somewhat larger, containing 108,900 square feet of area. A report prepared for Hugh Peacock in January 1972 identified the current value of the buildings at a straight 2 percent per year and the land value at \$8 per square foot. The three apartment buildings on the adjacent 300 block of Harvard Street were appraised within the past two months. Their cost approach is applicable in this situation inasmuch as the percent use is consistent with the highest and best use in an R6 zone. They appraised the land value at \$8 and \$10 per square foot respectively. This substantiates the figure used in the report to Mr. Peacock.

Paul Maupin
 February 4, 1972
 Page 2

The appraisers, however, used a depreciation allowance of 60 percent and 50 percent respectively for buildings which are fifty years of age, or 1.2 to 1.0 percent per year. The depreciation rate of 2 percent per year is applicable in a different context, and I believe 1.0 percent per year correlates more closely to market values, judging from figures arrived at under the cost approach in appraisal reports where the buildings are approximately one hundred years of age.

The value of each of the four blocks based on the two different depreciation rates is as follows, and is likely to range between Market Values A and B:

	<u>BLOCK 33</u> <u>TERRITORIAL</u>	<u>BLOCK 34</u> <u>CENTENNIAL</u>	<u>BLOCK 46</u> <u>PIONEER</u>	<u>BLOCK 47</u> <u>FRONTIER</u>
Land	\$ 871,200	\$ 871,200	\$ 871,200	\$ 871,200
Replacement of Building	<u>3,355,300</u>	<u>9,209,800</u>	<u>3,732,800</u>	<u>3,509,000</u>
	\$4,226,500	\$10,081,000	\$4,604,000	\$4,380,200
Less 2%/Yr. Depreciation	<u>872,400</u>	<u>3,718,900</u>	<u>2,867,200</u>	<u>842,200</u>
Market Value A	\$3,354,100	\$ 6,362,100	\$1,736,800	\$3,538,000
Less 1%/Yr. Depreciation	<u>436,200</u>	<u>1,859,500</u>	<u>1,433,600</u>	<u>421,100</u>
Market Value B	\$3,790,000	\$ 8,221,500	\$3,170,400	\$3,959,100

There are several advantages to locating the proposed Veterans Hospital east of Oak Street:

1. The cost of acquiring and clearing the building site will be considerably less.
2. There is greater geographic area to expand into without encroaching on the University Medical Center's proposed expansion.
3. The site will be convenient to parking, thus minimizing moving of people as well as automobiles.

The major disadvantage is distance from University Hospitals (two blocks if the residence halls remain). This isn't very much greater distance, if I recall correctly, than the government hospitals at the University of Illinois Medical Center from the University facilities.

A location east of Oak Street would provide much greater justification for the proposed underground tunnel between the proposed new Health Sciences Parking Ramp and the Medical Center buildings, and may even justify a sharing of costs.

Please let me know if you need additional information.

VLA:ls
 cc: Hugh G. S. Peacock

February 7, 1972

TO: Paul Maupin, Health Sciences Coordinator
FROM: Paul E. Kopietz, Supervising Engineer **PEK**
SUBJECT: Proposed V.A. Hospital

I am enclosing the following recommendations from the various engineering groups regarding the availability of various utilities in the area of both sites for the V.A. Hospital. They are as follows:

1. An electrical report from Dave Kerkow which essentially contends that the V.A. should make their own arrangements with Northern States Power.
2. A report from Jerry Nelson regarding various services, such as sewer, water, etc. He does not specifically state it, but there are sufficiently large interceptors, watermains, etc. that we may tie into to provide the necessary services. This means there would not be any extreme expense involved in upgrading a total system way back to a main source point.
3. We can provide steam to the complex through deep heat tunnels and shafts if it is decided that the University heating plant should be increased to supply steam to the V.A. There are at least three different approaches or routes that can be used for steam supply. Peter Merz has a more detailed explanation of this that I will hold and have available if necessary.

PEK:mj
Enclosure

cc: Hugh Peacock

February 4, 1972

TO: Paul Kopietz

FROM: Dave Kerkow *DK*

SUBJECT: Primary electric services for 700 bed VA Hospital
located in the southeast area of the Minneapolis Campus

A hospital facility of this size could well require 5000 KVA capacity.

I would recommend this facility be served directly from Northern States Power supply source rather than from the Minneapolis, East Bank Campus primary electric distribution system.

The following items enter into this decision.

1. The capacity required would develop a need for at least one additional University feeder into the area. ~~That is~~ very questionable that the VA would be able to pay for this. It would also entail expansion of the Minneapolis Campus sub station.
2. Arrangements or agreements for selling power to an agency of the federal government are very sticky. Technically we cannot resell power.
3. An installation of this magnitude might force the Northern States Power Company to extend heavier feeders into this area and increase our chances of negotiating a new substation supply point in this area for the University at minimal costs to us.

If you have any questions regarding this memo, I will be pleased to discuss them with you.

DK/mek

cc: Ken Erpelding
W. Soderberg

February 1, 1972

TO: Paul E. Kopietz, Director of Engineering & Construction
FROM: O. J. Nelson, Asst. Supervising Engineer
RE: 700 Bed Veterinary Hospital
on the Minneapolis Campus

As far as our utility services are concerned, we can provide water, gas, sanitary and storm sewer, and heating tunnels to serve a Veterinary Hospital in either the Pioneer-Frontier location or the two blocks just east of Frontier Hall. We should call the University Administration's attention to the 48" water main located in Ontario Street S.E. which may have to be rerouted if the building were placed in between Oak, Fulton and Erie Street. We can provide cost estimates if more load factors are known.

O. J. Nelson

OJN:mj

COPY

UNIVERSITY OF *Minnesota*

ENGINEERING AND CONSTRUCTION
26 FOLWELL HALL · MINNEAPOLIS, MINNESOTA 55455

February 8, 1972

TO: Paul Kapietz, Supervising Engineer
FROM: E. B. ~~Meyer~~ Asst. Supervising Engineer
RE: Proposed Veterans Administration Hospital

I have not had time to review completely the main campus heating plant capabilities with Warren. However, I am aware that he is submitting a request for a new boiler in 1973. This would indicate that the predicted campus load by 1974-75 will exceed present generating capacity, less the largest boiler capability. This does not present an optimistic picture relative to the University's capacity for providing steam to the proposed hospital.

The information presently available concerning the size of the proposed facility is insufficient to evaluate the ability of our steam generation and distribution systems to handle the proposed load. However, if it is determined that we have the generating capacity, the following options should be considered (see the attached campus plan):

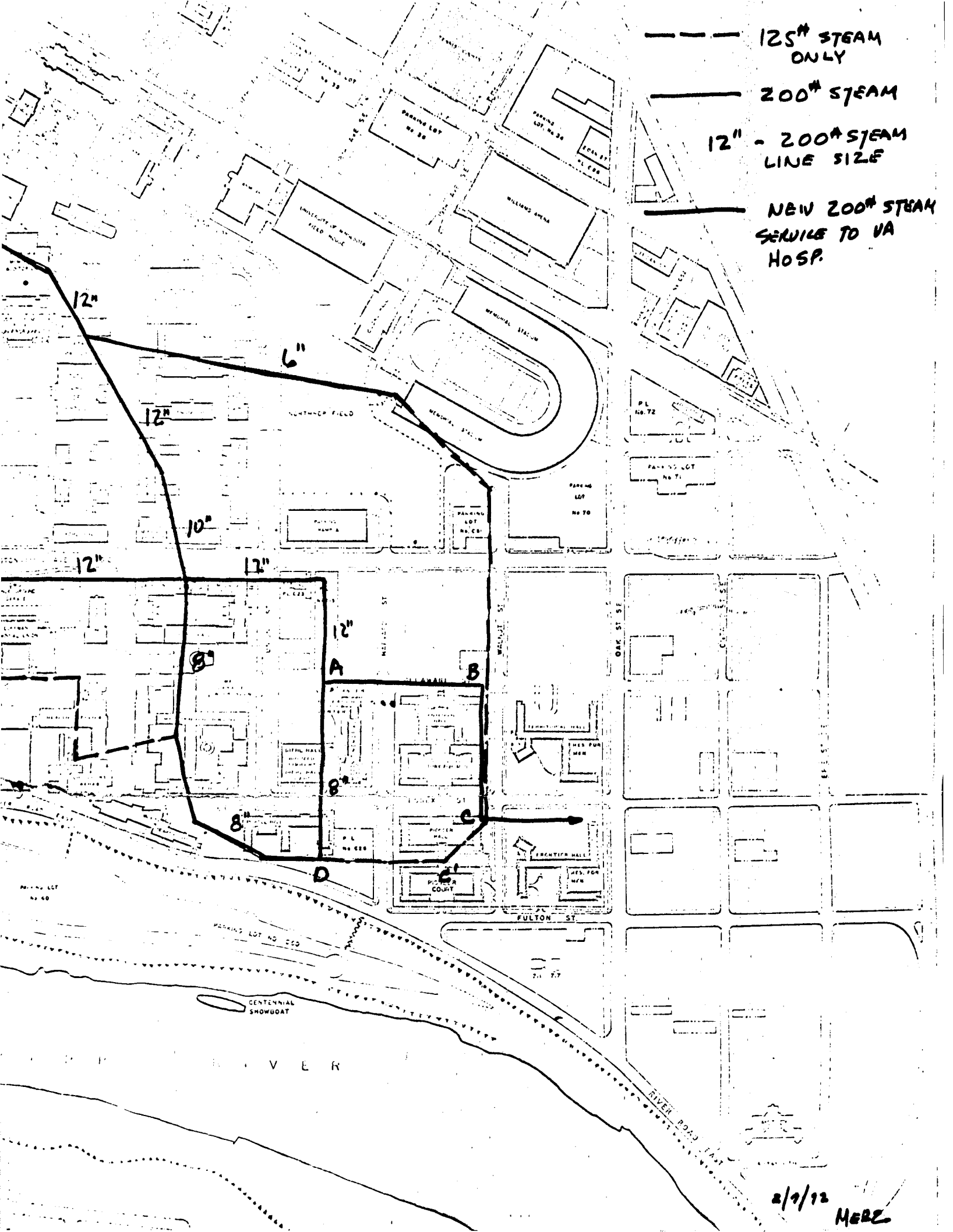
1. Extend the deep tunnel system from Unit A shaft (point A on plan) to intersect the existing tunnel at point B. From A through B to C (or C'), install steam and return piping adequate for the proposed hospital. If the hospital is to be constructed east of Oak Street, from point C construct a deep tunnel with included piping to the building location. If the hospital is constructed west of Oak Street, either the shaft at C' can be used or a new shaft constructed to intersect the deep tunnel system.
2. Install 200# steam line and condensate lines of adequate size from D to C' or C, with construction beyond this point the same as under item 1 above.
3. If the V. A. Hospital is constructed east of Oak Street, and if the previously proposed parking ramp and the Health Sciences-to-parking ramp pedestrian tunnel is constructed, the steam and return piping to the V. A. Hospital possibly could be routed through the utility core of the pedestrian tunnel, through the parking ramp to the hospital.

In summary, there are three alternate ways of providing steam to the proposed V. A. Hospital (depending on location) providing the heating plant has the generating capacity necessary. This capability, along with pipe sizing and estimated costs, cannot be determined until the hospital steam demand is known. This determination cannot be made with information presently available.

EBM:neb

cc: W, E. Soderberg
Paul Maupin ✓

- - - - 125" STEAM ONLY
 _____ 200" STEAM
 12" - 200" STEAM LINE SIZE
 _____ NEW 200" STEAM SERVICE TO VA HOSP.



2/9/12
 MERE

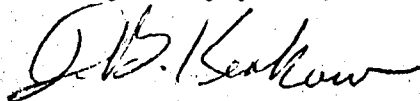
2/3/72

system can be developed into a workable arrangement, I am not convinced that all problems with it have been resolved.

I feel it would be worthwhile to try the "D" system in one or two rooms. This would reduce the economic risk to a minimum and would give valuable information for future installations. Hopefully, some type of monitoring could be incorporated in the design so that it would meet code requirements. You may wish to consider this approach.

Perhaps we should discuss our conclusion with Dave Kilpatrick. If you have any further questions, I will be pleased to discuss them with you.

Very truly yours,



D. B. Kerkov
Assistant Supervising Engineer

DBK:neb

cc: P. Kopietz ✓
W. Coffin

February 9, 1972

Dr. Richard Varco
Surgery
Mpls. Campus

Dear Dr. Varco:

Please send me any information you might have which would be relevant in regard to: University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.

I thank you in advance for any pertinent information you can provide this office with.

Yours truly,



Paul J. Maupin
Health Sciences Planning Coordinator

PJM:nbw



February 9, 1972

Dr. Robert Mulhausen
Medical School
Mpls. Campus

Please send me any information you might have which would be relevant in regard to: University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.

I thank you in advance for any pertinent information you can provide this office with.

Yours truly,



Paul J. Maupin
Health Sciences Planning Coordinator

PJM:nbw



February 9, 1972

Mr. Tom Jones
Box 606 Mayo
Mpls. Campus

Please send me any information you might have which would be relevant in regard to: University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.

I thank you in advance for any pertinent information you can provide this office with.

Yours truly,



Paul J. Maupin
Health Sciences Planning Coordinator

PJM:nbw



UNIVERSITY HOSPITALS • MINNEAPOLIS, MINNESOTA 55455
February 16, 1972

Mr. Hugh Peacock
321 Morrill Hall
Mpls, Campus

RE: Data pertaining to the upcoming
VA Central Office visit which has
been requested from Lyle French, M.D.
by Edward W. Humphrey, M.D.

In regard to the above mentioned questions, the following information has been gathered:

1) Traffic patterns and traffic density into the University area - The University's Transportation Inventory report which was prepared in May, 1971 by Bather-Ringrose-Wolsfeld, Inc. for John Andrews Architects is our resource for this question. This study indicates that of the total 100,329 person trips/day to the Twin Cities Campus 4,776 are made via transit. This implies further that:

- A) The Twin Cities Campus is heavily auto oriented. An insignificant amount of travel to the St. Paul Campus is via transit.
- B) Before additional parking is provided or additional auto access is provided, the complex issue of mode of access should be resolved.

Other implications are that:

- C) Auto access at the St. Paul Campus is relatively equal in demand from all sides.
- D) Auto access at the East Bank/West Bank Campus is heaviest from the southwest.

Further studies of this problem will be completed within the next thirty days. We will advise you of these findings as soon as they are received by this office.

2) University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.

Dependant upon the mass traffic circulation findings and numerous other variables, at this time we would propose that the proposed VA Hospital site be located in immediate area of approximately the east boundary of the Health Sciences facilities.



3) Plans for Parking -

Dave Licht will be shortly initiating a parking and circulation study which should clearly outline policies and facilities. The first 1,000 space phase of a Health Sciences parking ramp should begin this spring.

4) Availability of utilities such as sewage, electricity and water.

A) An electrical report enclosed, essentially contends that the VA Hospital should make their own arrangements with Northern State Powers for the purchase of their required electrical power.

B) An enclosed report regarding sewer and water implies that there are sufficiently large interceptors, watermains, etc., that we could tie into to provide the necessary services. This means there would not be any extreme expense involved in upgrading a total system way back to a main source point.

5) Could the VA Hospital purchase steam from the University or would they have to build their own plant?

The University could provide steam to the complex through deep heat tunnels and shafts if it is decided that the University heating plant should be increased to supply steam to the VA. Sufficient land is available for extending the Heating Plant facility.

6) The proposed cost amortization of Pioneer Hall -

The Housing Administration has expressed that they are not interested in considering losing Pioneer Hall as a residence for students at the University. However if the Regents are convinced that the Pioneer Hall site is the best site for a VA Hospital, then the Housing Administration will settle for no less than the replacement cost for the number and quality of units presently available in Pioneer Hall.

7) Appraisals of the cost of the land from local real estate brokers. Vernon L. Ausen has submitted to us estimates of land values for the blocks east and west of Oak Street.

A) East of Oak Street - Appraisals on twelve parcels indicate that the University will have to pay about \$6.25 per square foot of land on the average to acquire the land, and possibly more. This would indicate an acquisition cost of \$600,000 to \$650,000 per block. If the block has several apartment houses on it, the cost could go higher.

B) West of Oak Street - This area has been appraised at \$8.00 to \$10.00 per square foot. The depreciation rate applicable to this property could vary from 1% to 2%. Based upon these two depreciation rates the value of this property would be approximately:

Block 33 - Territorial - \$3,354,100 to \$3,790,000.

Block 34 - Centennial - \$6,362,100 to \$8,221,500.

February 16, 1972


Mr. Paul Maupin
Health Sciences Planning
Coordinator
4104 Powell Hall
University of Minnesota

Dear Mr. Maupin:

I have enclosed copies of correspondence from my files relating to earlier discussions between the Medical School, Hospitals and the Veterans Administration Hospital. I hope that this will be helpful to you.

University Hospital expansion plans center now on a \$50,000,000 Mayo Hospital replacement program. If normal progress towards program completion can be made, it would not be unrealistic to expect a starting date of 1976 with occupancy around 1979. There is still a need for the faculty to consider this program.

Sincerely,


Thomas F. Jones
Associate Director
University of Minnesota Hospitals

TFJ:db

Enc.



July 20, 1970

Mr. Ken Taylor
The Architects Collaborative, Inc.
46 Brattle Street
Cambridge, Massachusetts

Dear Ken:

I am writing in response to the request made at the recent meeting between TAC and the University wherein we discussed the next step in the Long Range Planning. It was our assignment to provide you with a distillation of the various planning reports into as much hard data as possible. Mrs. Margaret Durst has been very helpful to me in accomplishing this task, and I am attaching copies of the data and considerations which she codified. The only comments I would make on the enclosed information are as follows:

1. I think that the beds in Childrens' Rehabilitation Center should be included in the adult and childrens' totals for the University facility thus reducing the total by 40. It is also my assumption due to the peripheral location of the Childrens' Rehabilitation Center that it would give up its beds to major new facilities.
2. I am also making an assumption that the beds would be removed from the existing Heart Hospital and become a part of the new Cardiovascular Center.
3. Therefore, the only existing beds which I would guess would remain in the new Phase II complex would be those in Masonic.
4. Mrs. Durst and I think that the figure for staff has been over-estimated slightly, but probably not enough to make a great difference in your site studies.
5. While the areas listed on the sheet "possible shared facilities - University Hospital - VA" certainly deserve considerable exploration, it is doubtful that the sharing of many of these are going to result in a great reduction of space. This does not mean that some of the facilities for the two hospitals may not be co-located or shared. As we have said before, I think the major cost savings in the close proximity of these two hospitals will be in terms of staff, student, and patient time and inconvenience.

I am sure that there will be additional pieces of information that you desire, and we will be most happy to provide them at your request.

With kind personal regards.

HEALTH SCIENCES CENTER

Sincerely,

Peter H. Sammond
Peter H. Sammond
Associate Director

COLLEGE OF MEDICAL SCIENCES - MINNEAPOLIS, MINNESOTA 55455

Office of the Dean

December 12, 1969

Hale Champion
Vice President for Planning and Operations
301 Morrill Hall

Dear Vice President Champion:

The Dean's Committee of the Veterans Administration Hospital has requested that I endorse and forward to you their recommendation regarding a proposed new Minneapolis Veterans Administration Hospital. The Committee recommends that the new hospital be built on the campus immediately adjoining the new University Hospital to be built in the future development of the Health Sciences complex.

It is anticipated that the proposed Veterans Administration Hospital will be about 600 beds, a reduction of present size that is in accord with developing policy of the Veterans Administration. The Dean's Committee feels that in view of this size, as well as the considered alternatives of more remote campus or other nearby locations that the location on a plot of roughly the size and location now occupied by Pioneer Hall will best serve the extremely important roles expected of the Veterans Administration Hospital for the future of the Health Sciences in the University.

The Committee, therefore, requests your consideration of its recommendation in order that the University may enter into discussion with the Veterans Administration for purposes of joint exploration of the feasibility of the proposed hospital in such a location.

The recommendation is transmitted to you with my endorsement of it.

Sincerely,



Robert B. Howard, M.D.
Dean
College of Medical Sciences

RBH/ljb

HEALTH SCIENCES CENTER

COMMISSION ADMINISTRATOR HOSPITALS
MINNEAPOLIS, MINN. ROOM 17

January 9, 1970

618-00

Mr. Brian P. Wessel
Planning Office
2675 University Avenue
St. Paul, Minnesota 55114

Dear Mr. Wessel:

The following additional information regarding our estimated requirements for new hospital planning is provided per your recent request.

Bed Capacity: Based on acute, short-term patient load and possible conversion of existing hospital to chronic and extended care facility.

Medical	240
Surgical	220
Neurology	30
Psychiatry	100
Physical Medicine & Rehabilitation	<u>40</u>
Total	680

This projected bed capacity will provide for about 17 40-bed wards or nursing units.

Space Requirements: Our VA Central Office Construction Service has advised that current space planning for university affiliated teaching hospitals calls for 1,000-1,100 square feet per bed. For future new hospital planning, such as in our situation, it was felt that 1,200 square feet per bed was reasonable. Based on the 1,200 square feet criteria, plus additional space for Outpatient Clinic and Research activities, space requirements would be:

Hospital	816,000 sq.ft.
Outpatient Clinic (Administrative)	10,000 sq.ft.
Research	<u>70,000 sq.ft.</u>
Total	896,000 sq.ft.

September 1, 1970.

UNIVERSITY HOSPITALS • MINNEAPOLIS, MINNESOTA 55455

Mr. John Harkness
The Architects Collaborative
46 Brattle Street
Cambridge, Massachusetts

Dear Chip:

I am responding to the inquiry you made regarding the Long Range Hospital Program at the time of your last visit to Minneapolis. I have reviewed the questions you posed with Mr. Potter of the Veterans' Administration, and passed on his comments verbally to Mr. Robert Turner, of your office.

Essentially, Mr. Potter indicated the following:

1. All figures provided were gross.
2. The reason for the 816,000 sq. ft. at 1200 sq. ft. per bed was that they had specified 680 beds (17 - 40 bed wards) rather than the 700 that we had indicated.
3. The Outpatient Clinic, (administrative) space is largely business office type space associated with administering application and claims and is not included in the 816,000 which does include actual Outpatient Clinic facilities.
4. The research space, he thought, should be in a separate but connected building, and Bob Turner indicated that he may wish to talk to Mr. Potter directly further on this relationship.
5. In summary of possible sharing relationships, Mr. Potter and Dr. Klippen, the Director, indicated that they would wish their facility as close as possible to the University Hospitals. Any distance which would require the use of personal motor vehicles (as opposed to some direct fast link) would be unacceptable, and if this were called for they would prefer to rebuild their hospital on their present site. They share our feeling that the largest savings to be achieved by co-location with the University are in relation to staff and student time rather than major reduction in facilities which otherwise might be duplicated. This point merely reflects the fact that both hospitals are of a size which economically can support most diagnostic and therapeutic facilities by themselves and therefore the economies of sharing are minimized between two institutions of this size.



UNIVERSITY HEALTH SCIENCES CENTER
 NEW UNIVERSITY CLINICAL FACILITIES

240 - more beds

Beds -- approved for 1015

new facilities (single building)

adult.....	625
children (300)/Gillette (110).....	410
Cardiovascular.....	100
40 adult	existing Heart Hospital beds
40 pediatric	
20 bed research ward	

existing facilities which will remain

Masonic/VFW Hospital.....	120
Children's Rehabilitation.....	40

TOTAL BEDS.....1295 1255

Persons to be accommodated (estimated)

faculty.....	1388	
staff.....	7553	
		8941
students.....	5925	
TOTAL.....		14866

Should be in close proximity to:

(new University clinical facility)

Masonic/VFW
 Mayo complex
 Outpatient facilities
 Diehl Hall

(children's facility/Gillette)

operating rooms
 cardiovascular pediatric beds
 obstetrics (labor & delivery)
 newborn and premature nursery
 outpatient clinic
 X-Ray

(cardiovascular center)

operating rooms
 heart catheterization labs
 EKG
 pulmonary function
 adult medicine
 pediatrics

700+ beds both acute care and extended care facilities

Special Needs:

Psychiatric facilities

Rehabilitation facilities

Orthopedic facilities

On-station teaching facilities -- Student and in-service

ICU (actual & anticipated) -- medical, coronary, surgical, dialysis, transplant

Research laboratories

1,500 parking spaces

Staff: 1970 -- Anticipate 1,735 full time equivalent employees by 1985

Full time physicians.....	76
Consultants.....	190
Dentists.....	10
Nurses.....	220
Residents.....	190
(Space requested for 275 residents and other trainees)	
Interns.....	10

V.A. estimate of space is 1,200 sq. ft./bed

Hospital.....	816,000 sq. ft.
Outpatient Clinic (administrative).....	10,000 sq. ft.
Research.....	70,000 sq. ft.
TOTAL.....	896,000 sq. ft.

Special needs

(new University clinical facility)

- medicine and surgery ICU
- adult isolation ward
- on-station teaching space (student and in-service)
- research laboratories (faculty and students)
- "germ-free" rooms (transplant)

(children's facility/Cillette)

- rooms which will allow 1 parent/2 children to sleep in
- bathrooms, dining facilities, etc. designed for children
- breast feeding facilities
- area for preparation of formulas, sterilization of bottles, etc.
- "germ-free" rooms (transplant)
- pediatric ICU
- educational facilities (children and adolescent)
- play areas
- pediatric isolation ward
- space for physicians working with children but not pediatricians (e.g., neurosurgeons)
- private conference rooms for staff and parents
- some adult restrooms, lounge area

(cardiovascular)

Needs in common

operational and administrative

- administrative offices (private and clerical)
- conference rooms
- personnel
- admissions
- operating rooms (including scrub rooms, locker facilities, showers, etc.)
- intensive care units and recovery rooms
- laboratory space (research, animal, pathology)
- on-station teaching space (student and in-service)
- restrooms & lounges
- staff cafeterias and snack areas
- service elevators
- physician offices (private and departmental)
- anesthesia prep rooms
- nursing service offices
- central supply (storage and delivery)
- business and accounting offices
- space on station for: charts, equipment storage, nursing information exchange, decentralized laboratory, decentralized pharmacy

Needs in common (cont)

operational and administrative (cont)

- maintenance and plant services
- food preparation areas
- decentralized equipment storage (mops, buckets, vacuum cleaners, etc.) especially
in surgical areas
- locker room/dressing room areas
- communications facilities (paging, telephone information, mail room, etc.)
- hallways large enough to meet fire requirements

patient and visitor

- emergency room facilities
- nursing desk (including clerical space)
- inpatient pharmacy
- patient and visitor lounges
- patient and visitor restrooms
- information desk and lobby area
- patient dining areas
- visitor cafeteria and snack areas
- patient elevators
- visitor elevators
- radiology facilities (therapeutic and diagnostic)
- psychiatric wards
- physical medicine and rehabilitation
- inhalation therapy

student

- conference and lecture rooms
- classroom space
- library facilities
- laboratories

Possible Shared Facilities -- University Hospital/V.A.

	<u>Contiguous</u>	<u>Remote</u>
pharmacy	yes	some
radiology ^{diagnostic}	some	no
physical medicine and rehabilitation ^{therapy}	yes	yes
parking	yes	no
food preparation areas	yes	yes
cafeterias/snack bars	yes	some
* laundry	yes	no
lounges; patient, visitor, staff	yes	yes
information/communication	yes	no
pathology and autopsy	yes	yes
clinical lab. (blood bank)	yes	some
business office	no	no
classrooms	yes	some
dentistry	yes	some
social work	no	no
library	no	no
administrative office area	no	no
conference rooms	no	no
admissions area	yes	no
emergency rooms	yes	some
outpatient facilities	yes	some
operating rooms and related services	yes	some
maintenance and plant services	yes	no
central supply	yes	some
medical records	some	some
central stores	yes	yes
met. rec. + supply	yes	some
chapel	yes	yes
refuse collection (+ disposal)	yes	yes
power plant	yes	yes
purchasing	no	no

University of Minnesota
Health Sciences Planning Office

INTRODUCTION

In the past and currently the Minneapolis Veteran Administration Hospital and the University of Minnesota Medical School have enjoyed a relationship of utmost importance to both parties involved.

In September of 1971 the VA indicated in a letter from Donald E. Johnson, Administrator, that their long-range planning visualizes the replacement of the Minneapolis VA Hospital. It was indicated that this project would be scheduled for accomplishment sometime in the 1975-80 period. They also indicated that a site at the University of Minnesota Medical School would be desirable.

In attempt to further foster this relationship, this report provides a brief description of important aspects concerning long-range planning and development of the University of Minnesota Medical School and a proposal providing for construction of a new V. A. Hospital on the East Bank Campus area. The Veteran Administration Hospital has played an important role both in our undergraduate and graduate training programs at the University, and is important both for the University and for the V.A. that this relationship be continued.

The construction of a new Veteran Hospital on the campus of the University of Minnesota will benefit the Veterans Administration in numerous ways. It will facilitate the recruitment and retention of a high caliber staff at the Veterans Administration Hospital; it will increase the involvement of the University Hospital staff in the Veterans Administration program; and it will provide the veterans of this region an unexcelled central medical facility for the delivery of specialized care. This proposal is for a hospital of approximately 700 bed capacity. This

hospital unit will be an integral and essential component of a proposed central University Hospitals configuration which will be a nucleus of clinical facilities, combining high quality health care delivery with excellence in health sciences education. If implemented, this proposal would allow the participating parties to utilize the economic advantages of common, shared, expensive facilities, the pedagogical advantages of utilization of medical specialists in teaching, and the academic advantages of scientific interchange. These several advantages would be catalyzed by the development of a complex eventually comprised of a 1200 to 1400 bed University of Minnesota Hospital, a University Children's Center, a V.A. Hospital facility, and perhaps other units.

We would suggest the new V.A. Hospital be built on the campus immediately adjoining the new University Hospital to be built in the future development of the Health Sciences complex.

Anticipating questions which the Veterans Administration might have in regard to the University site proposal we have included responses to the following questions:

1) Proposed University Health Sciences new clinical facilities.

The following information covers proposed construction and staffing. Also included are the areas where it is felt that shared facilities are possible. (see inclosure 1 & 2)

2) Traffic patterns and traffic density into the University area.

The University's Transportation Inventory Report which was prepared in May, 1971 by Bather-Ringrose-Wolsfeld, Inc. for John Andrews Architects is our resource for this question. This study indicates that of the total 100,329 person trips/day to the Twin Cities Campus 4,776 are made via transit. This implies further that:

- A) The Twin Cities Campus is heavily auto oriented. An insignificant amount of travel to the St. Paul Campus is via transit.
- B) Before additional parking is provided or additional auto access is

provided, the complex issue of mode of access should be resolved.

Other implications are that:

C) Auto access at the St. Paul Campus is relatively equal in demand from all sides.

D) Auto access at the East Bank/West Bank Campus is heaviest from the southwest. (See inclosure 3)

3) University Hospital and Medical School plans for expansion and the relation of the proposed University Hospital site to the proposed VA Hospital site.

Dependant upon the mass traffic circulation findings and numerous other variables, at this time we would propose that the proposed VA Hospital site be located in immediate area between the eastern boundary of the Health Sciences facilities and the Interstate Highway 94 Exit.

4) Plans for parking.

A question which currently exists is how big does the first phase of the ramp have to be - 500 or 1000 cars. Funding is currently available from the parking fund to construct a ramp of 500 cars at \$3,000 per space minus land costs. We face a problem, however, if the ramp exceeds this amount due to the wage-price guidelines for raising parking rates. A final concern is the ability of the existing area streets to handle the newly generated traffic load. The above points should be considered in further planning.

5) Availability of utilities such as sewage, electricity and water.

A) An electrical report enclosed, essentially contends that the VA Hospital should make their own arrangements with Northern States Power for the purchase of their required electrical power.

B) An enclosed report regarding sewer and water implies that there are sufficiently large interceptors, watermains, etc., that we could tie into to provide the necessary services. This means there would not be any extreme expense

involved in upgrading a total systems way back to a main source point.

SUBJECT: Primary electric services for 700 bed VA Hospital located in the southeast area of the Minneapolis Campus.

A hospital facility of this size could well require 5000 KVA capacity. We would recommend this facility be served directly from Northern States Power supply source rather than from the Minneapolis, East Bank Campus primary electric distribution system.

The following items enter into this decision:

1) The capacity required would develop a need for at least one additional University feeder into the area. It is very questionable that the VA would be able to pay for this. It would also entail expansion of the Minneapolis Campus sub-station.

2) Arrangements on agreements for selling power to an agency of the federal government are very sticky. Technically we cannot resell power.

3) An installation of this magnitude might force the Northern States Power Company to extend heavier feeders into this area and increase our chances of negotiating a new substation supply point in this area for the University at minimal costs to us.

Regarding various services, such as sewer, water, etc., there are sufficiently large interceptors, watermains, etc. that we may tie into to provide the necessary services. This means there would not be any extreme expense involved in upgrading a total system way back to a main source point.

As far as our utility services are concerned, we can provide water, gas, sanitary and storm sewer, and heating tunnels to serve a Veterans Hospital in either the Pioneer-Frontier location or the two blocks just east of Frontier Hall. We should call the University Administration's attention to the 48" water main located in Ontario Street S.E. which may have to be rerouted if the building were

placed in between Oak, Fulton and Erie Street. We can provide cost estimates if more load factors are known.

6) The proposed cost amortization of Pioneer Hall.

The Housing Administration has expressed that they are not interested in considering losing Pioneer Hall as a residence for students at the University. However, if the Regents are convinced that the Pioneer Hall site is the best site for a VA Hospital, then the Housing Administration will settle for no less than the replacement cost for the number and quality of units presently available in Pioneer Hall.

7) Appraisals of the cost of the land from local real estate brokers.

A) East of Oak Street - Appraisals on twelve parcels indicate that the University will have to pay about \$6.25 per square foot of land on the average to acquire the land, and possibly more. This would indicate an acquisition cost of \$600,000 to \$650,000 per block. If the block has several apartment houses on it, the cost could go higher.

B) West of Oak Street - This area has been appraised at \$8.00 to \$10.00 per square foot. The depreciation rate applicable to this property could vary from 1% to 2%. Based upon these two depreciation rates the value of this property would be approximately:

Block 33 - Territorial - \$3,354,100 to \$3,790,000.

Block 46 - Pioneer - \$1,736,800 to \$3,170,400.

Block 47 - Frontier - \$3,538,000 to \$3,959,100.

Inclosures 3

VETERANS ADMINISTRATION HOSPITAL
 Minneapolis, Minn. 95117

January 9, 1970

618-00

Mr. Brian R. Wessel
 Planning Office
 2675 University Avenue
 St. Paul, Minnesota 55114

Dear Mr. Wessel:

The following additional information regarding our estimated requirements for new hospital planning is provided per your recent request.

Bed Capacity: Based on acute, short-term patient load and possible conversion of existing hospital to chronic and extended care facility.

Medical	240
Surgical	220
Neurology	80
Psychiatry	100
Physical Medicine & Rehabilitation . . .	<u>40</u>
Total	680

This projected bed capacity will provide for about 17 40-bed wards or nursing units.

Space Requirements: Our VA Central Office Construction Service has advised that current space planning for university affiliated teaching hospitals calls for 1,000-1,100 square feet per bed. For future new hospital planning, such as in our situation, it was felt that 1,200 square feet per bed was reasonable. Based on the 1,200 square feet criteria, plus additional space for Outpatient Clinic and Research activities, space requirements would be:

Hospital	816,000 sq.ft.
Outpatient Clinic (Administrative) . . .	10,000 sq.ft.
Research	<u>70,000 sq.ft.</u>
Total	896,000 sq.ft.

Parking Space Requirements: 1,500 space

Staffing Requirements: Our future staffing goal is to provide for a ratio of two hospital employees per patient. Based on this staffing ratio, plus additional staff for the Outpatient Clinic, Education and Research activities, our future staffing requirements would be:

Hospital	1,360 FTE
Outpatient Clinic	100 FTE
Research	150 FTE
Education (275 residents & other trainees)	<u>125 FTE</u>

(FTE is full-time equivalent) Total 1,735 FTE

for ARTHUR J. KLIPPEN, M.D.
Hospital Director

Beds -- approved for 1015

new facilities (single building)

adult.....	625
children (300)/Gillette (110).....	410
Cardiovascular.....	100
40 adult existing Heart Hospital beds	
40 pediatric	
20 bed research ward	

existing facilities which will remain

Masonic/VFW Hospital.....	120
Children's Rehabilitation.....	40
Total Beds.....	1295

Persons to be accommodated (estimated)

faculty.....	1388	
staff.....	7553	
		8941
students.....	5925	
Total.....		14866

Should be in close proximity to:

(new University clinical facility)
Masonic/VFW
Mayo complex
Outpatient facilities
Diehl Hall

(children's facility/Gillette)
operating rooms
cardiovascular pediatric beds
obstetrics (labor & delivery)
newborn and premature nursery
outpatient clinic
X-Ray

(cardiovascular center)
operating rooms
heart catherization labs
EKG
pulmonary function
adult medicine
pediatrics

UNIVERSITY HEALTH SCIENCES CENTER
VETERANS ADMINISTRATION HOSPITAL

700+ beds both acute care and extended care facilities

Special Needs:

Psychiatric facilities

Rehabilitation facilities

Orthopedic facilities

On-station teaching facilities -- Student and in-service

ICU (actual & anticipated) -- medical, coronary, surgical, dialysis, transplant

Research laboratories

1,500 parking spaces

Staff: 1970 -- Anticipate 1,735 full time equivalent employees by 1985

Full time physicians.....	76
Consultants.....	190
Dentists.....	10
Nurses.....	220
Residents.....	190
(Space requested for 275 residents and other trainees)	
Interns.....	10

V.A. estimate of space is 1,200 square ft./bed

Hospital.....	816,000 sq.ft.
Outpatient Clinic (administrative).....	10,000 sq.ft.
Research.....	70,000 sq.ft.
Total.....	<u>896,000 sq.ft.</u>

Special needs

(new University clinical facility)
medicine and surgery ICU
adult isolation ward
on-station teaching space (student and in-service)
research laboratories (faculty and students)
"germ-free" rooms (transplant)

(children's facility/Gillette)
rooms which will allow 1 parent/2 children to sleep in
bathrooms, dining facilities, etc. designed for children
breast feeding facilities
area for preparation of formulas, sterilization of bottles, etc.
"germ-free" rooms (transplant)
pediatric ICU
educational facilities (children and adolescent)
play areas
pediatric isolation ward
space for physicians working with children but not pediatricians (e.g.,
neurosurgeons)
private conference rooms for staff and parents
some adult restrooms, lounge area

(cardiovascular)

Needs in common

operational and administrative
administrative offices (private and clerical)
conference rooms
personnel
admissions
operating rooms (including scrub rooms, locker facilities, showers, etc.)
intensive care units and recovery rooms
laboratory space (research, animal, pathology)
on-station teaching space (student and in-service)
restrooms & lounges
staff cafeterias and snack areas
service elevators
physician offices (private and departmental)
anesthesia prep rooms
nursing service offices
central supply (storage and delivery)
business and accounting offices
space on station for: charts, equipment storage, nursing information exchange,
decentralized laboratory, decentralized pharmacy

Needs in common (cont'd)

operational and administrative (cont'd)

maintenance and plant services
food preparation areas
decentralized equipment storage (mops, buckets, vacuum cleaners, etc.)
 especially in surgical areas
locker room/dressing room areas
communications facilities (paging, telephone information, mail room, etc.)
hallways large enough to meet fire requirements

patient and visitor

emergency room facilities
nursing desk (including clerical space)
inpatient pharmacy
patient and visitor lounges
patient and visitor restrooms
information desk and lobby areas
patient dining areas
visitor cafeteria and snack areas
patient elevators
visitor elevators
radiology facilities (therapeutic and diagnostic)
psychiatric wards
physical medicine and rehabilitation
inhalation therapy

student

conference and lecture rooms
classroom space
library facilities
laboratories

Possible Shared Facilities -- University Hospital/V.A.

	<u>Contiguous</u>	<u>Remote</u>
pharmacy	yes	some
radiology - diagnosis	some	no
therapy	yes	yes
Physical medicine and rehabilitation	yes	no
parking	yes	yes
food preparation areas	yes	some
cafeterias/snack bars	yes	no
laundry	yes	yes
lounges; patient, visitor, staff	yes	no
information/communication	yes	yes
pathology and autopsy	yes	some
clinical labs (blood bank)	yes	some
business office	yes	some
classrooms	yes	some
dentistry	yes	some
social work	no	no
library	no	no
administrative office area	no	no
conference rooms	no	no
admissions area	yes	no
emergency rooms	yes	some
outpatient facilities	yes	some
operating rooms and related services	yes	some
maintenance and plant services	yes	no
central supply	yes	some

TRAVEL PATTERNS TO THE TWIN CITIES CAMPUS

Drawing 1-410: TWIN CITIES CAMPUS STUDY AREA

The cordon lines, Twin Cities Transportation Planning Program traffic analysis zones, Twin Cities Campus internal zones, and the interview stations are shown in Drawing 1-410. Appendix A explains the need and use of each of the above items.

Figure 1.3: VARIATIONS IN MODE OF TRAVEL

The distribution in mode of access to the individual campuses reflects the modes available and their convenience at the trip origin and destination. Of the total 100,329 person trips/day to the Twin Cities Campus 4,776 are made via transit.

Implications

- a) The Twin Cities Campus is heavily auto oriented; transit is used for less than five percent of the travel to the campus. An insignificant amount of travel to the St. Paul Campus is via transit.
 - b) Before additional parking is provided or additional auto access is provided, the complex issue of mode of access should be resolved.
-

Drawing 1.411: ORIGINS OF AUTO PERSON TRIPS TO THE ST. PAUL CAMPUS

The dispersion of points from which auto person trips originate indicates the wide area from which the St. Paul Campus draws and also the concentrations close to the campus. Over 19 percent of the total 10,395 person auto trips to the St. Paul originate in the area bounded by T.H. 280, T.H. 36, T.H. 51 (Snelling Avenue) and the railroad tracks.

Implications

- a) The potential for a transit market in the area immediately around the St. Paul Campus must be investigated.
- b) The diverse pattern of trip origins outside the immediate area of the campus are very difficult to satisfy with transit service oriented to the campus. Therefore, the auto will continue to provide the major means of access for the diverse trip origins.

Drawing 1-412: ORIGINS OF AUTO PERSON TRIPS TO THE EAST
BANK/WEST BANK CAMPUS

Four general types of areas evolve from the analysis of the location of the 57,673 auto trip origins to the East Bank and the 27,151 trips to the West Bank. The West Bank for the purpose of this study is defined by the area bounded by the Mississippi River, I-94, and proposed I-35W.

- the residential area immediately south and southwest of the Minneapolis CBD
- the residential area to the north and northwest of the East Bank
- the residential area west of the St. Paul Campus
- the remainder of the metropolitan area.

Implications

- a) There are heavy concentrations of auto trip origins to the East Bank/West Bank that have potential as transit market.
- b) There is also a diverse pattern of origins from the suburban areas that the auto will probably continue to serve.

Drawing 1.413: ORIGINS OF LOCAL TRANSIT TRIPS TO THE
ST. PAUL CAMPUS

The regional distribution of the 148 transit trip origins shows the area that is using transit. Route 5 running east-west on Como Avenue, into the St. Paul CBD, and out to West St. Paul provides the major access to the campus. Other locations are explained by transfers.

Implications

Where local transit is provided, both in St. Paul and the suburban area of West St. Paul, some patronage exists.

Drawing 1.414: ORIGINS OF LOCAL AND EXPRESS TRANSIT TRIPS
TO THE EAST BANK/WEST BANK CAMPUS

The location of the origins of the 4628 transit trips to the East Bank (3329 trips) and West Bank (1299 trips) is obviously related to transit service and to total trips accessing the East Bank/West Bank. The heaviest concentration of riders is south of the Minneapolis CBD.

Drawing 1.415: AUTO PERSON TRIPS ENTERING THE TWIN CITIES
CAMPUS

The auto person trips entering the Twin Cities Campus are shown at the major points of access. Comparing the auto origins and points of access reveals the vehicular flow to the campus.

The 10,395 person trips enter the St. Paul Campus in 6,803 vehicles for an average auto occupancy of 1.53 persons per auto. For the East Bank/West Bank Campus, the 84,824 person trips arrive in 57,992 vehicles for an average auto occupancy of 1.46 persons per car. These auto occupancy figures compare with the 1.4 persons per auto average for all trips in the metropolitan area.

Note: The Franklin Avenue Bridge was closed during the February, 1971, survey for repairs.

Implications

- a) Extensive car pooling to the Twin Cities Campus does not occur.
- b) Auto access at the St. Paul Campus is relatively equal in demand from all sides.
- c) Auto access at the East Bank/West Bank Campus is heaviest from the southwest.

Drawing 1.416: TRANSIT TRIPS ENTERING THE TWIN CITIES
CAMPUS

All express and local transit person trips entering the Twin Cities Campus are shown at the points where the routes enter the campus. By comparing the demand represented by origin points and the access volumes, the efficiency of the existing routes is presented.

Drawing 1.417: THROUGH TRIPS - ST. PAUL CAMPUS

Of the 11,848 vehicles that enter the cordon around the St. Paul Campus, 5045 continue through without stopping. Of these 5045 through trips, over 94 percent or 4753 occur on Cleveland Avenue.

Drawing 1.418: AUTO PERSON TRIPS ENTERING THE ST. PAUL
CAMPUS BY ROUTES

A cordon line was drawn to bound the area defined by T.H. 36, T.H. 51, Railroad Tracks, and T.H. 280. At major access points on the cordon line the number of auto trips to the St. Paul Campus are indicated. This serves as a basis for identifying alternatives to the existing access patterns. The drawing is used in conjunction with Drawing 1-415 to present more detail.

An example is the 1033 trips northbound on Snelling Avenue, they may access the campus at Como Avenue, Commonwealth Avenue, Arlington, or possible even Larpenteur Avenue. With these data and the availability of parking spaces, access routes may be planned.

Drawing 1.419: EXPRESS ROUTES AND STOPS - TWIN CITIES
CAMPUS

The routes and stops for University express bus service are shown.

Drawing 1-420: LOCAL ROUTES - TWIN CITIES CAMPUS

Those routes operated by the Metropolitan Transit Commission which directly serve the campus are shown. In addition to these, the Bloomington Bus Company operates two buses inbound in the morning and two outbound in the afternoon, carrying a total of 115 passengers. Several apartment complexes operate their own shuttles to campus.

Other important travel patterns are the destinations of both auto and transit trips within the Twin Cities Campus. For auto travel, the destinations illustrate the availability of the parking facilities and also show the influence of parking locations on traffic flow. The transit trips to the small areas within the Twin Cities Campus illustrate the zones of highest generation. The drawings include:

- Drawing 1.421: Destinations of Auto Person Trips to the St. Paul Campus
- Drawing 1.422: Destinations of Auto Person Trips to the East Bank/West Bank Campus
- Drawing 1.423: Destinations of Local Transit Trips to the St. Paul Campus
- Drawing 1.424: Destinations of Local and Express Transit Trips to the East Bank/West Bank Campus.

Figure 1.4: AUTO PERSON TRIPS ENTERING TWIN CITIES CAMPUS

The hourly variation in arriving auto person trips reflects class and work schedules.

Figure 1-5: OUTBOUND TRANSIT RIDERSHIP TWIN CITIES CAMPUS

The hourly variation in transit departures for local transit shows two peaks. The afternoon peak at the West Bank Campus is extended reflecting the non-University generators in the area.

Figure 1-6: AUTO DRIVER CLASSIFICATION ENTERING THE TWIN CITIES CAMPUS

Of interest here is the percent visitor, service passenger, and service classifications at each campus.

Figure 1-7: LOCAL TRANSIT RIDER CLASSIFICATION ENTERING THE TWIN CITIES CAMPUS

Comparing Figure 1-6 with 1-7 reflects the availability and the choice of mode to each classification of person entering the campus.

Figure 1.8: EXPRESS TRANSIT RIDER CLASSIFICATION ENTERING THE TWIN CITIES CAMPUS

The figure shows the extent to which the express buses serve other than students.

Figure 1.9: HOURLY VARIATION OF AUTO DRIVER CLASSIFICATION
ENTERING THE TWIN CITIES CAMPUS

A comparison of the hourly arrival patterns for various driver classifications reflects class scheduling and work hours. Undergraduates and staff peak from 7:00-8:00 a.m. while faculty and graduate students peak from 8:00 to 9:00 a.m.

Figure 1.10: PURPOSE FROM ORIGIN FOR AUTO PERSON TRIPS

The origin of most trips to the campus is home and the pattern by purpose is the same for each campus.

Figure 1.11: PURPOSE FROM ORIGIN FOR ALL TRANSIT RIDERS

The origin of most transit trips, both express and local, is home. The express riders show a higher percentage originating at home due to the hours of operation.

Figure 1.12: PURPOSE TO DESTINATION FOR AUTO PERSON TRIPS

The purpose to destination is predominantly work and school.

Figure 1.13: PURPOSE TO DESTINATION FOR ALL TRANSIT RIDERS

The purpose to destination for transit riders is also predominantly work and school with school being higher than in the case of autos indicating the larger percentage of students using transit.

Figure 1.14: TRANSIT AVAILABILITY FOR UNIVERSITY DESTINED
AUTO PERSON TRIPS

Given is a comparison between the St. Paul Campus and the Twin Cities Campus of the knowledge of the potential users as to the availability of transit, both local and express. Approximately 53 percent of the trips to the Twin Cities Campus could have been satisfied via transit while 25 percent of the trips to the St. Paul Campus could have been satisfied via transit. For the Twin Cities Campus, the potential ridership is over 50,000 one way trips as compared to a useage of 4800 trips. For the St. Paul Campus, the potential ridership is 2,500 one way trips versus a useage of 148 trips. The two main reasons for not using transit are increased travel time and inconvenience. Dependability and comfort were not selected as factors in mode choice.

Implications

- a) A policy judgement must be made as to the acceptability of the present split in modal choice.
- b) Education of the availability of transit service is not a major problem.
- c) A very large transit market is presently being offered service and is not using it.

Figure 1.15: AUTO AVAILABILITY FOR TRANSIT RIDERS

Over 87 percent of the local transit riders to St. Paul were "captives" to the transit system since no automobile was available to them. This compares with 77 percent and 81 percent "captive" local transit riders to the East Bank/West Bank Campus for a Twin Cities Campus total of 78 percent or 3725 "captives" to the local transit system. This is slightly higher than the 72 percent or 240 "captive" riders on the express transit system. Of the reasons given by those with available autos, the main reason for not using autos to access the Twin Cities Campus was that parking is too expensive.

Implications

- a) The existing transit ridership is a result of a high percentage of "captive" riders.
- b) The cost factor is most sensitive to influence modal choice.

Figure 1.16 ACCESS TO LOCAL TRANSIT FOR RIDERS

Of the 4776 local transit riders to the Twin Cities Campus, 92 percent walked to the bus. Of those who walked, over 68 percent walked two blocks or less.

Figure 1.17 ACCESS TO EXPRESS TRANSIT FOR RIDERS

Ninety-six percent or 321 of the express riders to the Twin Cities Campus walked to the bus. Seventy-two percent walked less than two blocks.

Implications

- a) Transit service must be provided "at the doorstep" of the potential rider, alternative access means are not generally available.
- b) Transit riders, local or express, to the university, do not participate in any significant "park-ride" program.

Figure 1.18: TYPE OF RESIDENCE

The types of residences for undergraduates and graduates entering the Twin Cities Campus daily via auto or transit are presented in this figure. Of the 100,329 person trips into the university each day, 51,908 are student trips. Fifty-one percent of these students live in their parents' home and another 27 percent live in apartments. These students are considered "commuter" and must make daily trips to the University from throughout the metropolitan area.

Figure 1.19: LENGTH OF RESIDENCE

Over 40 percent of the students who enter the Twin Cities Campus via auto and transit have lived at their place of residence for ten or more years.

TRAVEL PATTERNS WITHIN THE TWIN CITIES CAMPUS

Figure 1.20: DAILY AND SEASONAL VARIATION: INTER-CAMPUS TRANSIT RIDERS

The daily variation in ridership is shown for a typical week from each quarter.

Figure 1.21: TRANSIT RIDERSHIP BETWEEN ST. PAUL AND EAST BANK/WEST BANK CAMPUS

Comparing the hourly variation by direction reflects the parking situations on each campus. There is a morning peak from St. Paul Campus to East Bank/West Bank Campus largely from people using the Fairgrounds parking lot, with a return in the afternoon.

Implications

The intercampus transit system has to serve a demand that varies considerably by hour and within the hour.

Figure 1.22: HISTORICAL INTER-CAMPUS TRANSIT RIDERSHIP

The number of riders for a typical day (Monday) in each quarter since summer 1968, reflects the growth in the use of transit as reflected in the growth on Route 13.

Drawing 1.425: PEDESTRIAN FLOW PARKING LOT TO BUILDING

The desire for pedestrian movement from selected parking locations to buildings illustrates the theoretical "best path". This compares with the actual ground path illustrated in Drawing 1.406: PEDESTRIAN FLOW. The heaviest movements from the off-street lots is to the bus stop in front of the Student Center.

Implications

"Park and Ride" is presently occurring at the St. Paul Campus.

Drawing 1.426: PEDESTRIAN FLOW DEPARTING BY TRANSIT

The pedestrian movement desires from buildings to local transit stops illustrates the distance between the stop and the buildings.