THE TRANSPO GROUP

JUNEAU PARKING STUDY

Prepared for:

The City and Borough of Juneau

February 25, 1999

FINAL REPORT

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Prepared for:

The City and Borough of Juneau

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Prepared by:

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INTRODUCTION

The City of Juneau currently experiences parking shortages that vary by time of day, day of week and season. The Transpo Group was contracted to head a team including TDA Inc. and MRV Architects to research the shortage and identify a variety of alternatives to address the identified shortfalls.

The approach included a thorough inventory of the existing parking supply and an estimate of the demand for parking. This information was synthesized to provide an estimated demand for parking for weekends and weekdays during three seasonal periods: summer tourist season, legislative season and a "shoulder season".

Once the parking shortfalls have been identified, a variety of options for addressing the shortfalls are described. General categories for addressing the shortfalls include:

- Management of Existing Spaces
- Reducing Demand
- Add to Supply

This report summarizes the parking supply and demand findings and describes potential alternatives. It also recommends an approach to resolving shortfalls. Schematic designs and cost estimates for two alternative locations for providing additional parking will be developed further and presented in a final report.

This report provides information to guide in the development of a parking system for downtown Juneau that is intended to:

- Address parking supply shortages
- Increase the efficiency of parking utilization
- Provide information necessary for discussion and decision making on various parking supply and management options.

The Borough is currently undertaking an Areawide Transportation Plan which will be used to guide the development of future transportation infrastructure, facilities, services and policies. The current parking situation was thought to be too crucial currently to wait to take any action until the Area Wide Plan was completed. Though the results of the Transportation Plan may have considerable impacts to the elements of the mid- and long-term steps, as described at the end of this document, there is merit in beginning the work that needs to be done to address the current situation, particularly in the management of current parking spaces and reducing demand.

SUMMARY OF FINDINGS

Findings of this study include:

- Current shortages of parking occur on weekdays in all subareas throughout the year.
- Shortages are greatest in the Office subarea.
- Without action, future shortages will increase as land currently used for parking is redeveloped.
- State Office workers are the largest segment of population contributing to the demand for parking
- The shortage in parking is a result of insufficient parking being provided on-site for almost all uses.
- Parking shortages should be addressed by a combination of alternatives including reducing demand for parking, more efficient use of current parking supply and development of additional parking. No one solution will address the extreme shortages currently experienced.
- Since office workers cause most parking demand, parking demand is fairly consistent throughout the workday.
- Some of the assumptions on which the above findings are based on need to be verified. A list of recommended data collection subjects are included in the Recommendations section at the end of this document.
- Adding to the supply can be accomplished by developing additional centralized parking, providing extra parking in future buildings, and or developing remote lots served by shuttles if appropriate locations can be identified.

SUMMARY OF RECOMMENDATIONS

- Juneau needs to establish a parking policy that will guide planners in the amount of parking that should be provided.
- The CBJ should institute an aggressive parking demand reduction program in order to reduce the amount of new parking supply needed.
- Modifications in the current management of the existing parking supply should be made to make parking more accessible for patrons of commercial businesses and residents.
- Because of the immediate need for a fee-in-lieu program, and the extent of the current shortfall, at a minimum a surface lot and/or 300 to 500 spaces of new parking should be provided in the near future.
- Development of additional parking supply: construction of centralized parking structures should be phased in and reevaluated on a case by case basis. Surface lots can be established on a temporary basis to act as place holders for potential future structures and provide additional parking while a centralized structure is being developed and the initial use of the structure evaluated.
- Management of downtown parking should be centralized, though still coordinated with other City Departments, to coordinate all aspects of the parking program including.
- The parking program should be continually monitored to determine how programs are working. Developing a program is an ongoing process that will need continuous review and revision.
- The City needs to involve the State in shared development of solutions, since parking demand created by State offices are a major factor in downtown parking shortfalls. The CBJ should also develop a program to reduce demand created by CBJ employees.

STUDY AREA

The scope of the study area was limited to the primary downtown core including business, office, and residential portions shown on the attached Figure 1. Parking in this area is reported to be in great demand. Actual incidents of shortfall may go beyond the confines of the study area and locations outside the study area are certainly affected by spill-over of parking demand from within the study area during certain times. Many of the alternatives for dealing with the parking shortfall can be applied to locations outside the study area.

For purposes of summarizing the findings, the study area was divided into three sub-areas. Though all areas contain several land uses, the sub-areas were defined based on their apparent focus on specific types of land uses. The three sub-areas are also identified in Figure 1. The sub-areas are:

- Tourist Retail
- Office
- Residential/Commercial

Though this report summarizes findings by the sub-areas, land use and parking supply was collected and tracked by block. Attachment A provides the block by block inventory of land use and parking supply by block.

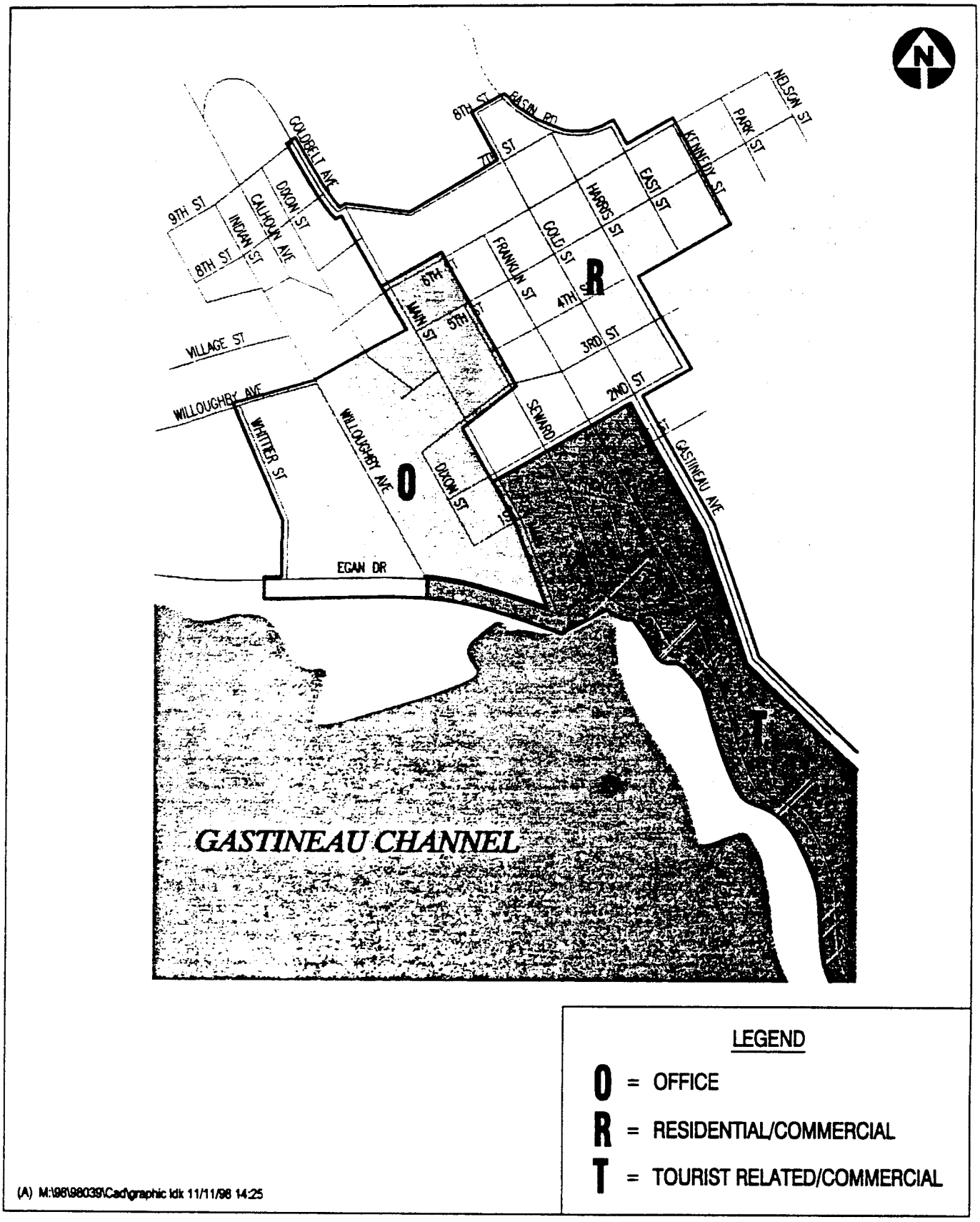


Figure 1
Study Area Subareas

PARKING DEMAND

Parking demand was estimated based on specific land uses. The land uses that were identified included:

- Government Office
- Legislative Office
- General Office
- Bank
- Churches and Fraternal Organizations
- Restaurant/Clubs
- Residential Units
- Hotel Units
- Tourist Retail
- Other Retail
- Miscellaneous Land Use including Library, Convention Center, Youth Hostel, Theater

Land use totals by sub-area for each category are provided in Table 1.

Table 1. Sub-Area Land Use Type Summary

	Zone O Total	Zone R Total	Zone T Total	All Zone Total
Gov't Office	743,313		42,815	**743,313**
Legislative Office	118,670			**118,670**
General Office		170,781	211,449	**405,877**
Bank		12,980	14,384	**27,364**
Church/Fraternal Org	3,007	35,077	25,216	**63,300**
Restaurant/Club	5,332	15,966	49,858	**71,156**
Residential (Units)	102	494	171	**773**
Hotel (Units)	105	6	236	**347**
Tourist Retail		20,253	150,767	**171,020**
Other Retail		35,812	17,786	**53,598**
Misc. Land Use Area	68,316	36,799	29,593	**124,834**

Gross square feet unless otherwise noted

For each land use a peak rate was identified. The rates were derived from several sources. For most uses, available national transportation and parking industry standards were applied. The most widely used standards in the industry are from the Institute of Transportation Engineers (ITE) and the Urban Land Institute (ULI). For these standards, peak parking rates were measured in many studies (207 studies for weekday general office buildings rate, 11 studies for the weekday restaurant rate used, for example). For other uses like hotels and tourist retail, rates were derived from information from operators in the study area. The rates used in this study, and the corresponding source for the rate, is provided in Table 2.

Table 2. Land Use Peak Rates

Land Use	Peak Rates		Source[1]
	Weekday	Weekend	
Gov't Office	3.65/1,000 gsf[2]	.05	Weekday:ITE base w/ 5% transit reduction, weekend, ULI Shared Parking
Legislative Office	3.65/1,000 gsf	.05	Same as above
General Office	2.65/1,000 gsf	.05	Same as above
Bank	.63/1,000 gsf	.09	ITE
Residential (per unit)	1 per unit	1	ULI[3]
Church/ Fraternal Org	.64/1,000 gsf	4.3	ITE, modified for seating capacity
Restaurant/Club	9.08/1,000 gla	6.96	ITE
Hotel (per unit)	0.25 per unit	0.25	Hotel operators
Tourist Retail	2.86/1,000 gsf	2.86	Shop operators
Other Retail	3.8/1,000 gla	4.0	ULI
Misc. Land Use Area	Varies	Varies	Various Operators of Facilities

1. *ITE: from Institute of Transportation Engineers Parking Generation 2nd Edition, ULI: from Urban Land Institute, Shared Parking, 1983.*
2. *Capital Office Building & Gov't Offices in O Sub-area use 2.65/1,000 gsf based on type of visitation*
3. *ULI: Urban Land Institute, Shared Parking, 1983. Rates for CBD and developments of mixed use*

Beginning with the average rates for peak parking demand, adjustments were made to reflect area specific demand based on available information and the nature of the study area. Those adjustments are described below. The average rates for peak demand are a good place to start when projecting the demand for several individual buildings. For uses that ITE has data from multiple locations a curve equation is offered. The curve reflects the pattern of demand in the ratio of parking spaces to size of facility. For example, for the General Office Building land use, for which ITE had data for 207 separate sites, the curve indicates that a building of 25,000 gsf had An average peak demand equivalent to 2.79 spaces per gsf of building area. For a building of 500,000 gsf, the average peak demand is equivalent 2.27 spaces per gsf of building area, a rate about 20% less. The difference may be related to employees per square foot, the nature of businesses related to size, and other unknown factors. There is just not enough specific data available for the land uses in the study area to pinpoint exact demand. However, the trends indicated by the ITE curve rates suggest that demand will be around the peak rate or less. For planning purposes, until more specific data is available, our analysis provides a range within which the parking demand is believed to lie which reflects the potential deviation in peak rate. Based on ITE curves, the large portion of demand generated by various office uses and the concentration of development in a small area, our estimate of parking surplus/deficit considers a range where the peak demand rate is from 85% to 100% of the average peak demand rates shown in Table 2.

Based on conversations with operators and managers of various businesses in the study area and seasonal rates found in national parking publications, seasonal adjustments were made to each land use. Seasonal modifications are shown in Table 3.

Table 3. Seasonal Modifications

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
General Retail	65%	65%	70%	70%	70%	75%	75%	75%	75%	75%	80%	100%
Tourist Retail	75%	75%	75%	75%	100%	100%	100%	100%	100%	75%	75%	75%
Restaurant/Club	80%	75%	90%	90%	95%	100%	100%	85%	80%	80%	80%	90%
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Bank	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
General Office	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Government Office	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Legislative Office	100%	99%	100%	100%	99%	44%	38%	39%	36%	37%	37%	40%
Church/Fraternal Org.	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Hotel (per occupancy)	60%	60%	60%	60%	75%	85%	85%	85%	70%	30%	30%	30%
Library	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Youth Center/Armory	30%	30%	30%	30%	30%	40%	60%	100%	100%	100%	30%	30%
Theater	90%	70%	50%	70%	70%	100%	100%	70%	80%	70%	50%	50%

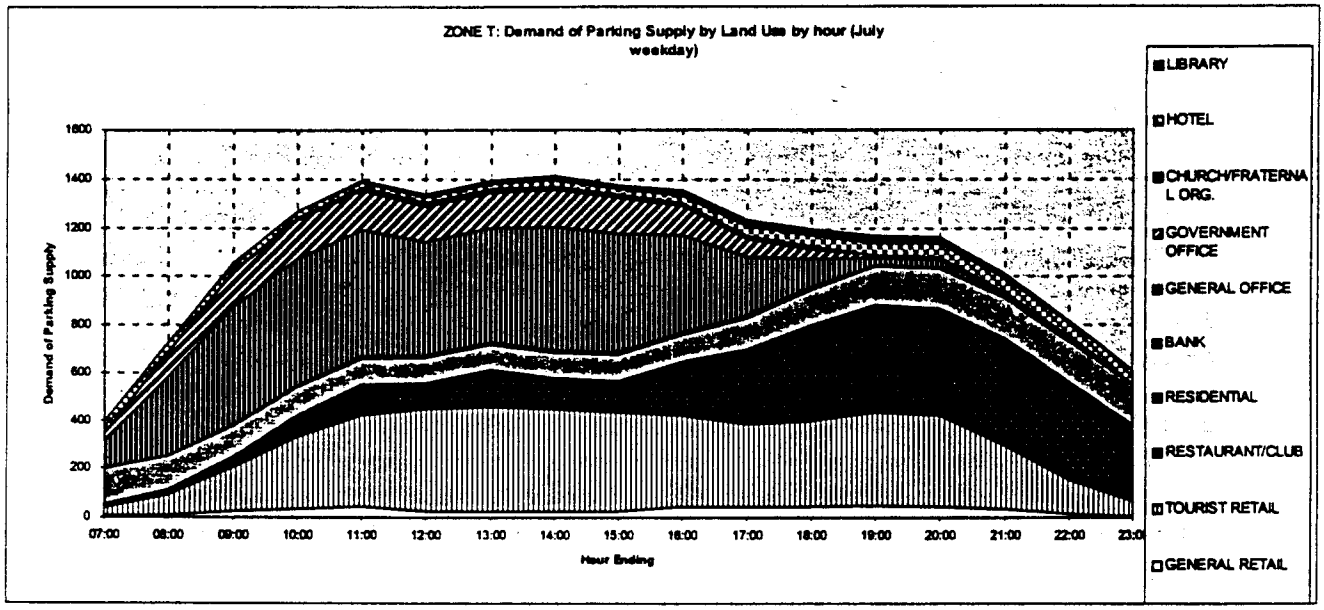
The demand calculations also recognize effects of the captive market or "internal capture." Certain land use combinations produce reductions in the cumulative parking demand of all individual uses combined. For example, office workers in a CBD will often dine or shop at commercial establishments within walking distance during their mid-day break. Very little information is available on quantifying capture rates. The Urban Land Institute researched the effect of captive markets in mixed-use developments which provides an indication of the number of employees who also patronize other uses in the same or nearby developments. The study indicated that in central business district (CBD) areas, an average of 61% of employees in mixed-use sites were also patrons of businesses in the same or nearby developments (the range was from 22% to 85%). In Non-CBD sites, an average of 28% of employees in mixed-use sites were also patrons of businesses in the same or nearby developments (the range was from 0% to 83%). For this analysis the most critical period for estimating internal capture is mid-day when restaurant and non-tourist commercial business are patronized by office workers within walking distance. Intuitively, a large percentage of lunchtime restaurant patrons (probably over half, depending on location) are employees in the study area. In this analysis, for weekdays, a 75% reduction in parking demand for restaurant patrons in the Office subarea and a 50% reduction in parking demand for restaurant patrons in the Residential/Commercial and Tourist Retail subareas around the noon hour were taken. A 50% reduction in parking demand for all non-tourist retail uses was also taken around the noon hour. This reflects an estimated patronage of these establishments by employees within the study area.

Another reduction was taken for the estimated percent of employees who live close enough to their place of employment and walk (or bike) regularly to work. Since no commute mode split information was available, for this analysis the 1997 CBJ Population Estimate was consulted. In 1997, 13% of the entire CBJ population lived within downtown Juneau. Using our current count of housing units in the study area, approximately 40% of the 13% live in the study area. Another unidentified amount live just outside the study area and could live close enough to walk or bike on a regular basis. Given the current shortage of parking spaces in the area, and the large employment base in the study area, it is likely that a fair amount of the employees who live close enough to walk or bike currently do so. This analysis assumes a

default value of 3% of the work force currently walk to their place of employment in the study area.

Parking accumulation varies throughout the day. The average peak rates, provided in Table 2, represent the rate at the peak hour of a day during the peak month of demand. ULI offers the most comprehensive source for hourly variation in parking demand for most land uses. Their parking accumulation curves are based on hourly parking counts taken at freestanding facilities and are represented by "% of peak" rates throughout the day. This analysis applied parking accumulation estimates to the rates derived through the steps described above. This was done for each land use and the cumulative demand for all uses in each zone over a daily period was determined. The end result is an estimate of parking demand for each hour throughout the day (both weekdays and weekend). The hourly demand in any sub-area is the cumulated total demand of every land use in that sub-area for the given hour. To illustrate this calculation, Figure 2 provides a representative weekday hourly parking demand for the Tourist Related Commercial sub-area (summer season).

Figure 2. Example of Daily Hourly Parking Accumulation



Note that the curve shown above provides cumulative demand. The variance in the width of the band indicates the extent to which the demand for a particular use varies over the course of a peak day. For example, the demand for general office use peaks at 11 a.m. but stays at a fairly constant rate from 10 a.m. to 3 p.m. On the other hand, restaurant parking demand Peaks around 7 p.m. The residential demand remains at its highest point around 7 p.m. and remains at the same level until around 7 a.m. as can be seen by the width (not the height) of the band for residential demand.

The **weekday** peak demand for each area is summarized in Table 4. Note that the numbers in Table 4 represent the **peak condition** in each season. The peak number represents the demand during the hour that experiences the greatest parking demand on one of the busiest days of the study period. In reality parking demand varies throughout the day, as was shown in Figure 1, and on a daily basis and will also vary on a daily basis. The detailed

calculations that provide this estimate for **peak** demand and daily fluctuation during the legislative season are provided in Attachment B.

For each period, a range of peak demand is given. This reflects the potential deviation in peak rate described in the section on demand analysis. Note that in Table 4, the range for average peak demand, and therefore the identified surplus/deficit, represents the **peak condition** in each season or the number represented by the top of the cumulative demand seen in Figure 1. In reality parking demand varies throughout the day, as was shown in Figure 1, and on a daily basis. The detailed calculations that provide this estimate for **peak** demand, provided in Attachment B, also provides the daily fluctuation for the **peak** day.

Table 4. Weekday Parking Demand

	Zone			
Season	Office	Residential/ Commercial	Tourist Retail	Overall
Legislative	2,050-2,412	802-943	1,121-1,318	3,913-4,604
Summer	1,834-2,158	837-964	1,223-1,438	3,811-4,483
Off-Season	1,829-2,152	807-949	1,112-1,308	3,691-4,343

The **weekend** peak demand for each area is summarized in Table 5.

Table 5. Weekend Parking Demand

	Zone			
Season	Office	Residential/Commercial	Tourist Retail	Overall
Legislative	522-614	653-768	797-938	1,892-2,226
Summer	492-579	675-794	905-1,065	1,993-2,345
Off-Season	489-576	661-777	790-930	1,865-2,194

PARKING SUPPLY

Both on- and off-street parking was inventoried. Where parking spaces were individually metered or striped the parking capacity was easily determined. Where lots were not striped or on-street parking was not striped or individually metered, the parking supply inventory was estimated based on apparent capacity. Measurement of legal supply in such cases requires lineal measurement of all curb and roadside surfaces, measurement and placement of items such as driveways, fire hydrants, no-parking zones and corners. This type of measurement was not within the budget and time constraints of this study so apparent capacity was determined using aerial photography and visual checks. Therefore, the parking supply represented in this analysis is likely to be slightly higher than the "legal" supply. However, this identified supply for unmarked parking areas is estimated to be within 10 percent of "legal" supply which can be used for planning purposes. When parking is in high demand, such as in the majority of the study area, people often park more closely and in areas that exceed the "legal supply". The inventory of off-street parking by block is included in Attachment A. Figure 3 summarizes the parking inventory in each subarea.

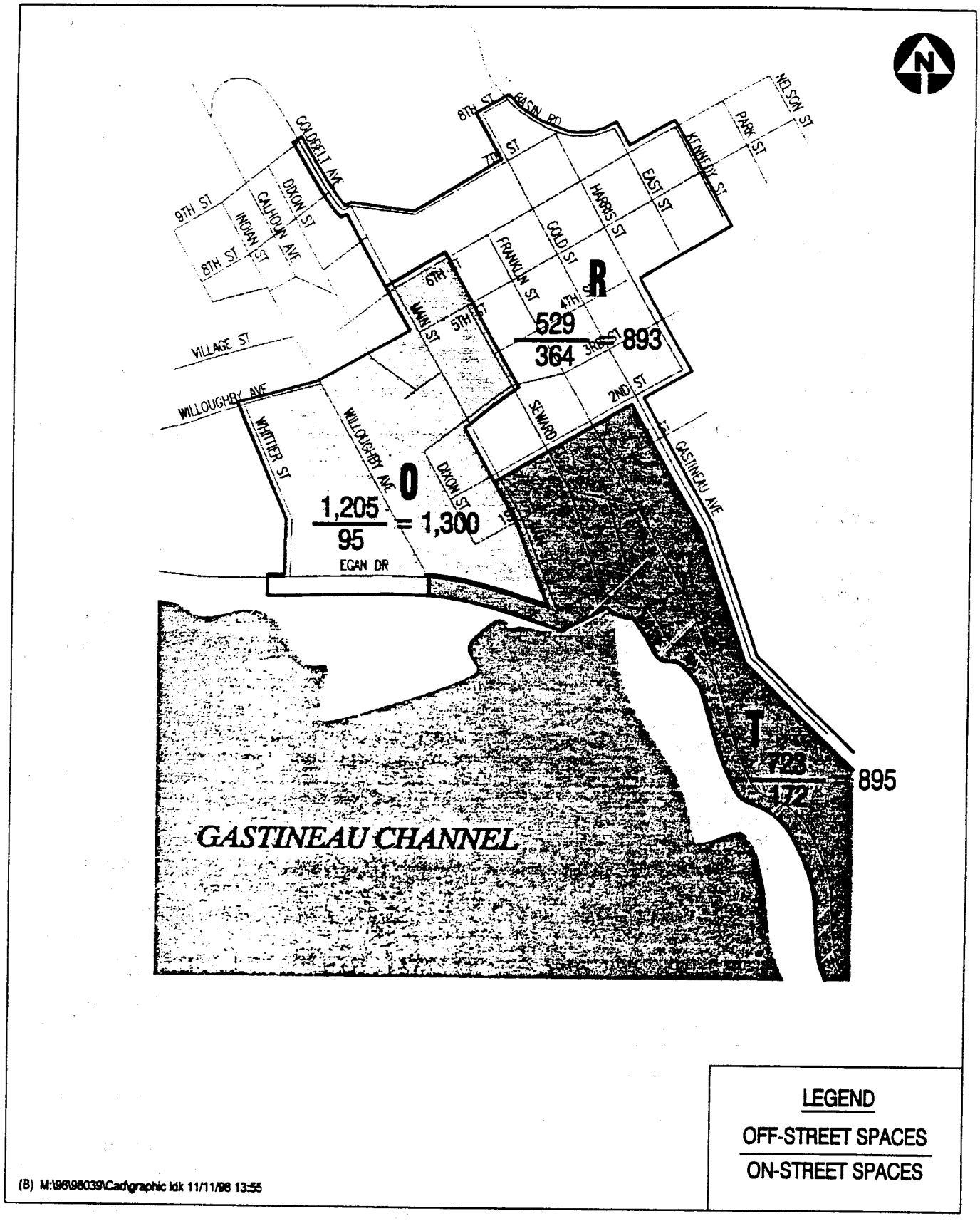


Figure 3
Parking Supply

SHORTFALLS

The estimated peak parking demand was compared to the supply in order to identify the magnitude of any deficits or surpluses. Table 6 provides the estimated range of surplus/deficit **for weekdays** by season for each zone and overall.

Table 6. Weekday Surplus/Deficit in Parking Supply

	Zone			
Season	Office	Residential/Commercial	Tourist Retail	Overall
Legislative	-750 to -1,112	+ 91 to –50	-226 to –423	-825 to –1,516
Summer	-534 to –858	+56 to –91	-328 to –543	-723 to –1,395
Off-Season	-529 to –852	+86 to –56	-217 to –413	-603 to –1,255

Table 6 provides the estimated range of surplus/deficit **for weekdays** by season for each zone and overall.

Table 7. Weekend Parking Demand

	Zone			
Season	Office	Residential/Commercial	Tourist Retail	Overall
Legislative	+778 to +686	+240 to +125	+98 to -43	+1,196 to +862
Summer	+808 to +721	+218 to +99	-10 to –170	+1,095 to +743
Off-Season	+811 to +724	+232 to +116	+105 to –35	+1,223 to +894

There are a few important issues that the reader should consider when viewing the summary in Tables 6 and 7. These include:

- The Convention Center is the use with the most variable parking demand because it relies on the level of activity taking place at the Center. In the summaries, the demand is limited to 36 spaces at all times. On many days actual demand may be less but since the Convention Center parking requires permits the demand rate was set at full use of these spaces. On many days (both weekdays and weekends) the Convention Center often will have as many patrons as 300 to 500. At an estimated average of two occupants per car, additional demand may be as much as 150 to 250 parking spaces. Operators of the Convention Center report that they have this level of activity from two to four days per week fairly consistently throughout the year with the exception of during the summer months when activity drops off, but still with occasional events for 300 to 500 people. When there is a demand for **150-250 more parking stalls in Zone O during a Convention Center Event the deficit increases by a similar event.**
- **The surplus for parking in Zone C/R on weekends is overstated** because approximately 60 percent of the off-street supply is limited to private businesses and not available to neighborhood residents.
- Future changes to the sub-port property are likely to eliminate approximately 100 to 180 parking spaces in the Office Zone, which are currently leased by the State for employee parking. Even if the redevelopment of this property provides for site generated parking needs on site, the displacement of the current parking on site **will add another 100 or more spaces to the deficit in the Office zone.**
- Though the downtown area is mostly fully developed, any future changes in land use may change the deficit estimates, particularly if they displace existing parking.

ALTERNATIVES FOR THE FUTURE

Several alternative approaches have been identified to deal with the shortages. Because of the extent of the deficit, no one solution will resolve the shortfall; there is no "Silver Bullet." While it might be tempting to build new parking to the extent that no shortfalls would exist, financial restrictions and land availability would limit the ability to do this. Other options, such as reducing demand can reduce the demand for parking to some extent, but realistically would not be expected to address the entire deficit. A parking shortage will, to some extent, reduce demand for parking as some potential drivers will consider alternatives that don't rely on hard-to-find parking. On the other hand, an extreme shortage leads to illegal parking, spillover into neighboring communities and businesses, attrition in customer base and the exiting of businesses from the area in which the shortage is profound. In order to determine the best course of action, individual alternatives should be understood, both in general terms and their potential for application in Juneau. For purposes of understanding the alternatives, they have been grouped into three major categories. These include:

- Management of Existing Spaces
- Reducing Demand for Parking
- Adding to the Parking Supply

A summary of benefits and costs related to the different alternatives is provided as Attachment C.

Management of Existing Spaces

With the exception of offering preferential parking for non-SOVs (single occupancy vehicles), the modifications described here are not likely to have much effect in reducing the current deficit but are aimed at improving availability of parking for certain groups.

Restricted Residential Parking Zones (RPZ's)

Restricted or Residential Parking Zones (RPZ's) apply to on-street parking spaces in specified zones. They typically are utilized in neighborhoods where adequate off-street parking is not supplied because

- the homes were built before off-street parking was required or vehicle ownership at the time of home construction was much less than in current society, and
- There are competing demands for the parking, often from major institutions, sport venues and other surrounding uses.

Typically, on street parking in an RPZ is limited to a short time-period (one to two hours) during specific hours (on weekdays generally or specific dates such as those of major sports events) unless the vehicle displays a special permit. A permit is issued for each vehicle owned by a resident. Often a guest permit is also issued.

Since the permitting program does impact residents, particularly if they have multiple visitors, a petition must be signed by a major percentage of residents. Some jurisdictions require baseline studies to determine the boundaries of and need for RPZs.

Administration of an RPZ program includes issuance and renewal of resident and guest permits, enforcement and punitive steps against violators. Application to multi-unit dwellings and other small businesses in the RPZ must be established.

It appears that there are portions in the study area in which an RPZ would be appropriate, if desired by the residents. A sampling of blocks within the R/C zone indicate that about half of the single-family homes do not supply any off-street parking. For those that do, many only supply one off-street space. The multi-unit housing developments also do not provide enough parking spaces off-street, if any, for renters. The on street parking in these neighborhoods is within walking distance to large centers of employment (State buildings and the tourist retail district) and utilization observations and descriptions of conditions indicate that much spillover parking is taking place in these areas. Adoption of an RPZ would result in displacing spillover long-term parking for employees who currently park on-street in the residential areas. Until a survey off office workers or a more intense observation of on-street parking is conducted it is not possible to know exactly how many vehicles parking on street in the residential areas represent long-term spill-over parking from work related uses. During the Legislative Season, on-street parking in the Residential/Commercial Zone was utilized at 85% with just over 300 spaces utilized. If one-half to one-third of those vehicles are spill-over parking for long-term work related uses, then about 100 to 150 vehicles would be displaced by instituting and enforcing an RPZ. Therefore, instituting an RPZ in the residential area, depending on the extent and area of the RPZ, could result in an increase in the deficit of long-term parking by an additional 100 to 150 vehicles.

Metered Street Parking

Though not specifically measured, descriptions and observations of the on-street parking, particularly in the vicinity of the Tourist Retail sub-area indicate that some employees downtown use the short-term parking for extended periods, moving their vehicles around so as not to be ticketed. Staffing levels of enforcement officers seems to be adequate. However, actual enforcement is reported to be inconsistent as the enforcement officers are often assigned to duties other than parking enforcement. The episodic nature of enforcement has led to apparent widespread abuse of the use of short-term space by employees needing longer-term parking. It appears that many employees do use the parking, accepting the inconvenience of frequent shuttling throughout the day and risking receiving a ticket. While employees tie up this parking, visitors to downtown businesses have difficulty finding places to park. Adding meters would help to resolve this issue, or at least impact abusers financially. Some jurisdictions have implemented enforcement programs that discourage this shifting of long-term parkers. Steeper fines for time violations could be considered, particularly if additional long-term parking is provided.

Portions of the downtown did have meters in the past. It was reported that street clutter, maintenance and snow removal issues prompted their removal. Advances in meter technology can address these concerns. New metering systems allow for centralized collection boxes (out of the snow removal area). Additionally, systems can accept validation tokens from businesses and pre-stored value cards as well as cash. Positive elements of a metered system include:

- Good revenue source
- Easier to enforce time zones than simple posting
- Discourages long term parking by employees with financial impacts and inconvenience in meter feeding
- Frees up space for customers of businesses

The negative aspects of adding meters include:

- Inconvenience of needing required change
- Additional cash handling by public employees
- The newer centralized collection boxes may be difficult for users to understand at first
- Reduces the perceived supply of parking available to employees in a tight parking supply situation

As an example of the financial impacts to employees, a metered space at $0.50 per hour would cost at least $4 per day to feed the meter. With a twenty-day work month, that would add up to $80 in meter costs per month.

Through the course of this study, an overriding concern to encourage the vitality and success of the downtown commercial center was expressed by committee members and the general public. Making parking more available for patrons of commercial businesses is necessary to achieve this. Because of the current apparent abuse of short-term on-street parking and the need for more available short-term parking, additions of meters in portions of the downtown area, particularly along portions of Franklin Street, Marine Way, Front and Seward Streets may be appropriate. Additional research, such as license plate surveys, is recommended to identify the actual extent of abuse if this is the major motivating factor for adding meters.

As a replacement to the traditional single or double head meters, centralized meter stations are now available. This approach provides meter stations, typically in every block, at which a parking receipt is issued for a specific amount of time. The patron then places the issued permit in the dashboard of their car where it can be inspected for enforcement purposes. The station will accept cash, tokens or fees from a stored value card. Credit card payment is an option at some stations. Centralized collection boxes cost approximately $12,000 each, and approximately an additional $500 each for shipping and installation. The collection stations eliminate the weather-related problems associated with traditional meter heads. The City of Aspen, which deals with snow removal requirements, installed the centralized meter stations and reports that the collection stations do not hinder snow removal programs. Approximately 10 such meter stations would be needed in the area of Franklin Street, between Mariner Way and Second Street, on Ferry Way and on Front Street. Total cost for centralized collection boxes in this area would be approximately $125,000.

Single head meters cost approximately $350 each, with approximately another $300-$400 each for shipping and installation. It would take around 80 to 90 individual meters in the same area described in the previous paragraph. Total cost for individual meters in the study area would be approximately $55,000.

Because metered parking is expected to displace some of the vehicles that now park for longer periods than permitted in the short-term locations, the displacement may cause more spillover into the residential areas north of the site. An RPZ program would help discourage the spillover and encourage would be abusers to consider alternatives to using private vehicles.

If using individual meters at each space, the capacity for some on-street parking may be reduced. However, with collection centers, such as are currently used in Aspen, the current capacity of on-street spaces would not be diminished. The procedure for using collection centers involves making payment at the centralized box, taking the "receipt" issued from the box and placing the receipt in view on the vehicle dashboard. Specific site assignment is not

required and parkers do not have to figure out and remember a specific spot in which they parked. On-street capacity is not reduced with striping of spaces.

Adding On-Street Parking

Additional on-street parking could be added where the street widths would accommodate it. Willoughby Avenue and Egan Drive are potential locations. Due to bus turn-out requirements and turn lanes, there is little opportunity to increase on-street parking on Main Street beyond current levels. Approximately 12 additional short-term spaces could be accommodated on Willoughby Avenue. On Egan Drive, between Whittier and Main Street, on-street parking could be added with the reduction in through lanes (would need further exploration of impacts of this change) and elimination of the curbing channelization in Egan Drive east of Whittier. With these changes, roughly 70 spaces could be added if parallel parking was provided on both sides. Another option would be to provide back-in parallel parking on one side. In this case, using 75° angled parking, roughly 90 spaces could be added on the water-side of the street. Issues regarding the addition of parking on Egan, that would require additional exploration are: loss of street capacity[1], impacts related to channelization needs for future signal at Whittier and Egan Drive, safety of pedestrian crossing from parking, safety of vehicles entering through traffic, potential time limitations on parking. Any additional on-street parking in the area would provide some badly needed short-term parking for visitors to State offices and other businesses.

Modifications to Library Garage

The library garage provides 296 parking spaces, 199 which are reserved for permit parking, 25 for use by library patrons and the remainder, 72 spaces, for short-term parking for which a nominal fee is charged. The City Parks Department administers the permits for the garage. The number of monthly permits that are issued for the approximately 200 spaces reserved for permit parking varies throughout the year: 276 in July, 248 in November and 238 in March). The list of permit holders in July indicates that approximately 35 percent are issued to City employees (with automatic payroll deduction) or departments, 25 percent to various businesses, 10 percent to residential operators and the remaining 30 percent to individuals who could live downtown or work in businesses there.

[1] The need for street capacity could be affected by the location of any added parking facility. For example, if a large parking facility were added to the Telephone Hill site, more capacity may be needed on Egan Drive than is currently the case.

During the course of this study, utilization of Library Garage spaces was collected mid-day in July and October. Table 8 summarizes Library Garage utilization during those periods of measurement:

Table 8. Library Garage Utilization

		July		October	
	Supply	# Utilized	% Utilization	# Utilized	% Utilization
Permit Spaces	199	115	58%	125	63%
Pay Short-term Spaces	72	15	21%	13	18%
Library Spaces	25	8	32%	6	24%
Total	296	138	47%	144	49%

Utilization of the permitted spaces is reported to be less during nice weather in the summer months. Permit holders indicate that if they see parking available on their journey in to town, such as in the sub-port lot or on street, they will often utilize those in order to avoid awkward traffic circulation patterns around the garage or heavy pedestrian traffic when cruise ships are in. It is a common phenomenon for drivers to prefer surface parking to structured space if available.

Since parking supply is deficient in the study area, it appears that the location, layout, lighting or other qualities of the existing garage may contribute to its underutilization. The garage spaces are equivalent in size to the minimum City standards. However, as described in the later section on parking requirements, the size may be inadequate particularly for the high turnover spaces on the lower levels.

Potential modifications to the library garage include restriping spaces to provide slightly larger spaces, particularly in the lower high turnover spaces, and additional lighting in the garage. The sampling of the short-term spaces measured in the Library Garage had widths ranging from 8'3" to 8'6" and the overall width on the first floor was 58'. Parking spaces in the upper level permits spaces were approximately 9' wide and the width was also approximately 58'. Recommended dimensions are provided later in this report. If meters are added to the street spaces downtown, consideration could be given to converting the lower level parking to short-term, free parking.

Special Parking Zones (Taxi Loading, Service Delivery, Tour Bus Loading)

There are several on-street parking spaces reserved for special parking needs. These include short-term parking for delivery vehicles and loading zones for Taxis and Tourist Buses. Though several businesses do not have their own off-street parking spaces for delivery vehicles, several on-street spaces are reserved for delivery vehicles. It was observed that when on-street parking and delivery spaces were occupied, some delivery vehicles parked on-street in a travel lane, with emergency lights flashing, with just enough room left for vehicles to go around. This created a hazardous situation for pedestrians, crossing near the illegally parked vehicles as well as created difficult maneuvering for vehicles. Stricter enforcement of short-term on-street parking should help accommodate delivery vehicles. Further exploration of business owner needs may indicate whether enough delivery spaces are provided. However, because of the need for public short-term parking, businesses should be encouraged to move all deliveries that can be made to late night hours, to a period of 9:00 p.m. to 7:00 a.m. Local business

owners should be consulted to find out if suppliers are able to shift their hours outside the peak demand for on-street parking.

The Taxi loading and Tourist Bus spaces appeared to be well located and able to handle the demand during the peak tourist season. The seasonal changing of the tourist loading spaces near the waterfront park to short-term parking during the tourist off-season is an efficient use of those spaces.

Preferential Parking for High Occupancy Vehicles2 (HOVs)

Providing special parking accommodations for carpools and vanpools gives users time and convenience advantages, and sometimes financial advantages, as compared to SOV drivers. In large lots, such as those near the State Office Building, some of the spaces closer to the building could be designated for use of carpools and vanpools. Convenient on-street spaces could also be designated for carpool/vanpool parking, but only in places where enough short-term parking is available for commercial patrons.

Preferential parking programs do require intense enforcement to reduce abuse. Costs include HOV parking signs and striping, enforcement, program promotion costs, administration of HOV parking passes and registration of participants in the program.

Valet or Stacked Parking

Depending on the layout of a parking facility, valet parking can increase the supply by as much as 20 percent in the portion devoted to valet parking. Valet parking requires employment of staff and sometimes costly insurance services. Valet parking is appropriate for uses that experience turnover at various times throughout the day but is difficult to apply to situations where arrival and departure times occur simultaneously for many parkers, such as office workers. Visitors to special events, such as conventions are more accepting of a longer wait for return of vehicles since the delay does not occur on a daily basis.

Stack parking is another way to increase parking efficiency but requires coordination between individuals. A stack parking space is twice the length of a standard space. Though stack-parking layouts are difficult to retrofit into garages, surface lots are more easily re-striped to accommodate stacked parking arrangements.

Reducing Demand

Reducing the demand for parking has many benefits including less use of valuable land for parking facilities and reducing congestion and air pollution associated with automobiles. Many communities have taken measures to reduce dependence on the automobile. Success varies, depending on the nature and extent of the alternatives offered, out-of-pocket costs and time involved for drivers of automobiles and the "character" of the population affected. A 1993

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[2] High Occupancy Vehicles, often called HOVs, are vehicles with more than one occupant. HOV facilities, such as exclusive lanes, have differing requirements for the number of vehicle occupants required to use such facilities. In this report, HOV refers to vehicles occupied by at least one passenger in addition to the driver. An SOV refers to a "single occupant vehicle," a driver and no passengers.

study sponsored by USDOT, Federal Transit Administration and Federal Highway Administration measured the effectiveness of a variety of Travel Demand Management (TDM) programs.[3] The reduction in vehicle trips resulting from TDM programs for the 22 employers studied ranged from 47% to 4%.[4] Areawide TDM programs, which work with a more diverse group of travelers traveling to a wide variety of location and many different times, are less effective. The study estimates an area-wide mandated TDM could expect between a 4 to 8 percent reduction in vehicle trips. This analysis assumes that, by involving major employers in downtown Juneau in TDM programs, a reduction in parking demand for work employees could realistically be in the range of 5 to 15%. This relies on enhancing transit service, developing carpool programs, a tight parking supply for long-term parkers, the State, CBJ and other employers, providing a TDM program to employees. Extensive, costly programs might result in even slightly higher reductions.

As an example of an effective area-wide TDM program, the City of Aspen, Colorado, with a resident population of 5000, had been experiencing increasing traffic and parking congestion. In 1995, Aspen introduced paid parking in its downtown. As a result, peak-parking occupancy dropped from 95% - 100% to about 70%. This pay parking, in addition to a doubling of transit service (from 1 hour to ½ hour headways resulted in a 135% **increase in transit ridership** in the 1991 to 1997 period. Please note that such an increase is transit ridership does not result in an equivalent reduction in parking. While there is a corresponding reduction in parking, the amount is much smaller.

Several programs that focus on reducing auto usage are described below. This is not intended to be an all-inclusive list, but rather to give some general information on several program options. Should Juneau adopt a parking policy that incorporates demand reduction as a key element, more extensive information on a variety of vehicle and parking reduction programs will be needed. This study focuses on parking demand and this document begins to explore some of the demand reduction strategies and programs that can be considered.

Enhanced Transit Service

Buses can be added to the existing service and the frequency of service can be increased to reduce waiting time. Travel time is one of the most important variables affecting travelers' decisions. Current transit service to the valley runs on an hourly frequency between 7 a.m. and 11:30 p.m. Monday through Saturday. Half hour service to the Valley and Douglas is available from 4 and 5:30 p.m. Monday through Friday. Express service is available to the Valley hourly between 7:30 and 5:30 and on Sundays from 9 a.m. to 6 p.m. It is estimated that currently approximately an average of 5 percent of the commuter population into downtown from the Mendenhall Valley and Douglas takes transit.

In experience elsewhere, each one- percent increase in service frequency or route coverage (measured in bus trips or bus miles) has led to a 0.9 percent increase in ridership.[5] For example, if current ridership represents approximately 5 percent of the work commuters, doubling the frequency to provide half-hour frequency, especially during peak work commute periods would be expected to increase the transit share of work commutes to approximately 9½ percent. This is in line with Capital Transit's informal estimate that peak hour service

[3] Implementing Effective Travel Demand Management Measures, USDOT, FWHA and FTA, Published by ITE, 1993.

[4] IBID, section 1, p. 1-6.

[5] Implementing Effective Travel Demand Management Measures, USDOT, FWHA and FTA, Published by ITE, 1993, section II-A p. 1-18.

improvements, such as doubling current service levels, could double commuter ridership into downtown over a five year period. Bus ridership might be positively effected by the provision of dedicated HOV lanes or transit signal pre-empting or bypasses, depending on the extent of delays now experienced in traffic along travel routes. However, the need and costs for these types of provisions would be considered in the Areawide Transportation Plan, currently under development.

Enhancing the transit service would require added capital, operational and maintenance costs, funding for the subsidized portion of fares. Capital transit estimated that it would take approximately $3.1 million more annually in operating plus marketing costs plus purchase of three new transit vehicles ($247,000 in 1998 dollars each) to effectively double current service levels beginning in year 2002.

Because of the concentration of employees along a narrow and lineal geographic location, simple transit routing appears possible, reducing the dependence on feeder routes and transfers: arrangements that are less attractive to potential riders.

Park and Ride/Park and Pool lots provide free parking in a designated location for transit users to catch a bus or those ridesharing to meet for vanpools and carpools and complement a good transit program. The development of a Park & Ride lot in the Valley should be explored with an expanded transit program.

The addition of a free downtown shuttle may have a minimal effect on reducing current parking demands but could reduce the number of vehicles moving around the downtown. The shuttle, along with expanded basic transit services, could serve remote parking locations, and, if frequent enough, would accommodate longer distances from parking to destinations. The tour operators who currently sell shuttle services around Juneau during the summer tourist season might consider expanding shuttle services throughout the year to serve year-round needs. A shuttle service will cost around $50 per hour to operate.

Incentives For Ride-Sharing

Carpool and vanpool programs reduce parking demand. Carpool and vanpool program elements include:

- Matching commuters with similar origins, destinations and schedules so they can form a carpool or vanpool
- Discounted or free parking for HOVs
- Preferential parking for carpools/vanpools or self-contained, centrally located HOV lots accompanied by large violation penalties.
- HOV lanes through congested areas.

USDOT estimates reduction of work trips from area-wide ridematch programs of between 0.14 percent and 1.00 percent.

Vanpool Program

Vanpools are groups of six or more commuters that travel to work in a passenger van. Costs of operating the van are shared between the participants and are often subsidized by an employer or transit provider. According to the Institute of Transportation Engineers, it is

generally thought that a one-way trip length of at least 20 miles is the minimum necessary to support a vanpool. The Juneau market for vanpooling appears to be eliminated, or at least very minimal, due to the lack of commuter population pockets living more than 20 miles away.

Car Sharing

A car sharing organization is a group of individuals formed to share car ownership and access, in an approximately one-car-to-ten person ratio that provides access to a vehicle. The program, that originated in Germany in 1988, is now being tried in the United States. Portland has a program that currently has approximately 40 vehicles. Programs vary, but typically, participants reserve a car, when needed, and pick up the vehicle at a specific lot or space. Auto keys are accessed from a key safe with an assigned key and computerized card. Usage is reported and at the end of each month the user is billed based on mileage and time entries. The program handles maintenance and insurance. Such a program may have limited application in downtown Juneau because of the size of the residential population, but several members of the community have expressed an interest at public meetings regarding this study.

Transportation Coordinators

A transportation coordinator is a person in charge of promoting and administrating transportation management programs. A transportation coordinator conducts individual commute trip planning, rideshare matching, transit marketing and evaluations of programs. Some parking management tasks can also be managed by a transportation coordinator, such as stack parking and HOV parking programs. A Seattle study found that 48% of those who began ridesharing cited the Transportation Coordinator as contributing to their decision. In Juneau a full- or part-time provision of a transportation coordinator will be beneficial, especially if ridematching and special parking programs are instituted. Because of the large State employee population, the transportation coordinator should be on-site, at least part-time, in the government offices.

Guaranteed Ride Home

Guaranteed ride home (GRH) provides those who use transit or rideshare with a limited number of free rides home in the event of emergencies, or unexpected work obligations. Typically, the program subsidizes the cost of taxi service in the event of an emergency, need to work later than transit service operates or other circumstance. GRH is seen as a complimentary program to other efforts, in that it provides a sense of "insurance" to commuters.

In other communities, 10-30 percent of commuters who switched to alternative commute modes indicated that the GRH program was their main reason for making the switch. In Seattle, a study indicated that those who already used transit on an occasional basis indicated that they took 71 percent fewer SOV trips after the GRH program was instituted.

Bicycle and Pedestrian Improvements

In some locations, during good weather, many short SOV trips can be replaced by either bicycling or walking. Designation of bicycle routes within Juneau, as well as providing shower, locker and bicycle storage facilities would encourage bicycle and walking trips. Results from the National Personal Transportation Survey show that the average walking trip length is between 0.7 to 0.9 miles and bicycle trips average from 1.8 to 2.1 miles[6].

Weather and grades influence bicycle and pedestrian trips. Parking demand needs to be addressed for those who might walk or bike in good weather but not in bad weather. An extensive program including showers, lockers and bike lockers is not likely to have an extensive effect on reducing typical parking demand based on the commute length for many workers and weather and grade issues. However, a minimal reduction, probably less than 1 percent of the parking demand, on a regular, year round basis, would be expected.

Bicycle rack module costs range from around $250 for a four bike rack to $350 for an eight bike rack (not including shipping and installation costs). Bike lockers cost around $1,000 for a one-bike locker to $12,000 for a unit that would hold 20 bikes (also not including shipping and installation costs). Bicycle racks could be added nearly anywhere but potential initial sites that should be considered first are:

- Inside the first level of the Library Garage
- At the waterfront park
- Near the upper and lower entrances to the State Office Building

Adding bike racks to transit vehicles could enhance a bicycle program. METRO, the transit provider in the Seattle area, has added bike racks to nearly all of their service vehicles. Though the program hasn't been identified as adding a noticeable increase to transit ridership, the bike racks are popular and highly utilized. Capital Transit priced bike racks for their fleet. The unit cost was $650 each in 1997-98 dollars. Juneau should continue to pursue the addition of bicycle racks to it's fleet.

Because of the inclement weather experienced in Juneau, covered walkways should be encouraged to lessen the practice of using a "car for an umbrella." Awnings over sidewalks as well as hill climb stairs and pedestrian connections from centralized parking facilities should be encouraged.

Partner with State for State Employee Trip Reduction

State Government and Legislative office uses produce at least half of the peak parking demand during the peak legislative season. Currently all Administrative state employees are issued a permit to use parking supplied or leased by the State. Currently, the Administrative Branch issues approximately 2,000 permits for about 760 general parking spaces, 500 of which are under their ownership or lease within the study area. (this may include some expired or multiple permits issued to individuals). This supply of 500 spaces includes approximately 100 spaces that the State leases from State Mental Health at the sub-port. The gap in supply compared to number of permits issued results in "jungle rules" where parking often takes place in drive aisles and landscaping strips, tension mounts as drivers circle to get last available spaces or idle near cars that might be leaving. Eventually, spillover into neighboring streets and private lots occurs.

[6] National Personal Transportation Survey (NPTS)

As the City develops preferential non-SOV parking programs, ridematching and other travel demand reduction programs, the City should work closely to involve the State offices.

Pricing

The most effective measure in reducing the use of personal vehicles is to institute pay parking. Revenues can be used to provide increased transit services or other commute programs. Administrative costs such as fee collection and parking enforcement must be considered. However, parking payment programs on existing spaces often generate revenues beyond program costs. Experience in instituting pay parking programs has resulted in reductions from 10 - 35 percent in parking demand. Instituting pricing programs where parking costs have not been previously borne by individual drivers is often quite unpopular. Drivers often feel that free parking is a right. The State offices would have to work with the employees union to institute such a change. Any pricing program should be accompanied by increased alternatives (enhanced transit and preferential non-SOV parking) and assistance programs (GRH and ridematch programs)

Limited Supply

As a general rule, the tighter the supply of parking, the more likely drivers will consider using alternative transportation. Some deficit in long-term parking will help influence employees to consider alternatives. A parking policy may include some element of maximum supply aimed at encouraging alternative transportation, especially for commuters. With the extent of the current shortfall in parking, there is little incentive to institute limiting supply measures, such as supply requirement maximums, at this time. Developers should be encouraged to provide as much parking as possible since excess parking could be made available to the general public and reduce the amount of parking funded using public resources. However, if, in the future, the supply begins to near the peak demand, consideration may be given to instituting a maximum parking supply measure within the parking ordinance.

Policy Regarding Personal Use of Government Vehicles

A City employee suggested that the City should revise its policy so that employees would be able to use an assigned City vehicle, where applicable, for commute purposes. This would eliminate the need for additional parking of a personal vehicle and a City vehicle during periods when the employee is in the office. The extent that such a modification to policy would have on the parking shortfall is limited, as City vehicles make up a very small portion of parked vehicles (amount unknown at this time). However, the suggestion warrants further consideration. Insurance, employee benefits and other issues would need to be explored.

Add Supply

The extent of the current parking deficit indicates that at least some additional parking is needed. A discussion of the amount of which should be provided follows. New parking can be provided in several ways:

- New surface lots
- New above-grade or underground structures
- Centralized parking
- Increased parking with new development, referred to herein as "Piggy Back Parking"
- In remote lots with shuttles

Centralized parking With Fee-in-Lieu Option

The City could provide centralized parking facilities within the study area. Typically, centralized parking facilities would provide space for several different user groups.

The following guidelines can be used when considering placement and size of centralized structures:

- Generally, 350 sf per parking space can be used for planning purposes. This includes circulation and landscaping needs. This is roughly equivalent to 125 parking spaces per acre. Generally, a ½ acre structure at four levels would provide about 250 parking spaces.
- Though surface-parking facilities could provide an interim solution, it is not typically an economic choice if land values rise above $30 per square foot or land availability is particularly scarce.
- Ten to twelve feet height per floor of a parking structure is typical.
- Structure spaces above ground will cost around $16,700[7] per space, excluding land costs
- Construction costs of below ground spaces are usually about two to three times more expensive than above ground spaces
- Operating costs typically range from $400 to $600 per year per space
- Height limitations and width of parcel limit the amount of parking that can be built in a structure.
- New parking structures may displace existing surface spaces. This loss needs to be figured into net gains in parking supply
- Walking distance: in many other geographical locations, employees will typically walk up to 1,000 to 1,200 feet from their parking location to work (In the CBJ State employees walk approximately 800' from the sub-port lot to the State Office Building.) Inclement weather and steep terrain can reduce the typical walking distance and appears to be the case in Juneau. However, covered walkways from parking and a large unmet demand for spaces in close proximity to a place of employment increases the distance for acceptable walking distance. Acceptable walking distance for retail and personal business is about half as far as for employees.

Height limitations, size and shape of available property will significantly affect the number of spaces that can be accommodated and the cost effectiveness and efficiency of the facility.

[7] Based on HMS Inc, Anchorage estimate for highly efficient, well-designed facility.

Topography and size of land parcels have affected developers of new business facilities ability to provide needed parking on site which has caused developers to apply for exceptions to parking requirements. A way to address these situations is to allow development projects to make payments for a centralized parking facility "in-lieu" of meeting some or all of the on-site parking requirements. If located within acceptable walking distances, this can be advantageous for several reasons:

- Costs at a centralized facility may be lower than on site, underground parking.
- The centralized parking may be more identifiable to users.
- Spaces may be used for more hours of the day for different trip purposes than are single-purpose spaces located on site (spaces under an office building, for example).

Typically, an in-lieu parking fee would be submitted to the City for each required parking space that is not provided on-site. The in-lieu parking fee should be based on current land and construction costs. A special fund is created into which in-lieu fees are deposited, to be used only for paying off the construction of public parking facilities. In-lieu fees build up slowly and may require up-front capital from the City. In-lieu programs could have an element of on-going fees that cover operations, maintenance and taxes.

Piggy-Back Parking

In this alternative, the City would pay private developers of new projects to add a certain number of public parking spaces to their garage. The advantage to the City would be that these spaces could probably be added at a marginal cost, without any land costs. This option has no current application in Juneau and may have limited potential in the future. Piggy-back Parking works best with larger projects that can support additional floors of parking. However, as underutilized land is redeveloped, an opportunity for this alternative may present itself. It is mentioned as an option in this document so that if the opportunity should present itself in the future, the CBJ will be familiar with the concept and be prepared to consider its application.

Remote Parking

For this option, parking is provided off-site (beyond reasonable walking distance) and is served by shuttles or transit. Shuttles can be privately or publicly operated. Ideally, the satellite lot should be located within a range of ½ to 1½ miles from the source of demand, which allows for quick, frequent shuttle service. A potential shuttle lot is identified in the site options alternatives.

Considerations of a satellite lot include the market acceptability, shuttle costs, security of vehicles at the lot as well as the availability of lots.

As an alternative, a reduction of required parking could be granted for any building or use that implements and maintains a continuous shuttle service, or contracts with a public or private agency to provide such a service. Remote parking should only apply for the portion of parking demand generated by employees, not for clients, customers or other visitors. Failure to maintain the program could result in the building owner being charged an in-lieu fee equal to the value of the reduced parking spaces. This potential reduction is not strongly recommended by these consultants, as the shuttle service would require monitoring and the potential for severe undersupply with a change of ownership or use.

Park & Pool/Ride Lots

Development of Park & Pool or Park & Ride lots, served by the public transit authority could help reduce parking demand as an enhancement to the transit service. Current home locations of the downtown employee population and existing transit service would need to be further explored to establish the effectiveness of Park & Pool lots. The resulting reduction in the parking demand downtown would be considered a transit enhancement for this alternative.

Potential Locations of New or Expanded Parking Facilities

The identified shortfall suggests that additional parking supply is needed. A variety of potential locations where new or expanded parking could be considered were evaluated. A total of ten locations were identified based on their proximity to major pockets of demand, current underdevelopment and/or potential for the expansion of existing parking facilities. After initial review of these potential sites, the sites were classified as either "Highest Potential" locations and "Other Optional Locations." All potential sites are shown in Figure 4. In this figure the highest potential sites are identified by numbers and the other optional locations are identified by letters. This list is not presented in any priority order, nor are the numbering of potential sites intended to suggest such a priority. An approach to subjectively rank the potential sites is provided later in this report. In order to assess the parking space capacity of several of these potential locations, MRV Architects explored potential layout and circulation. The sketches that were developed are included as Attachment D.

Comments regarding each site follow:

Highest Potential Garage Locations

1. New structure at the south end of **Telephone Hill**: The location is very well situated, with easy walking distance to major pockets of parking demand in the Office and Tourist sub-areas. Current design options consider the portion currently utilized by the existing surface parking lot. Due to the relatively small footprint, the efficiency and cost effectiveness of the site, in its current configuration, is of concern. The design includes one story of retail space along Egan Drive. The 5 story structure could accommodate 204 parking spaces.

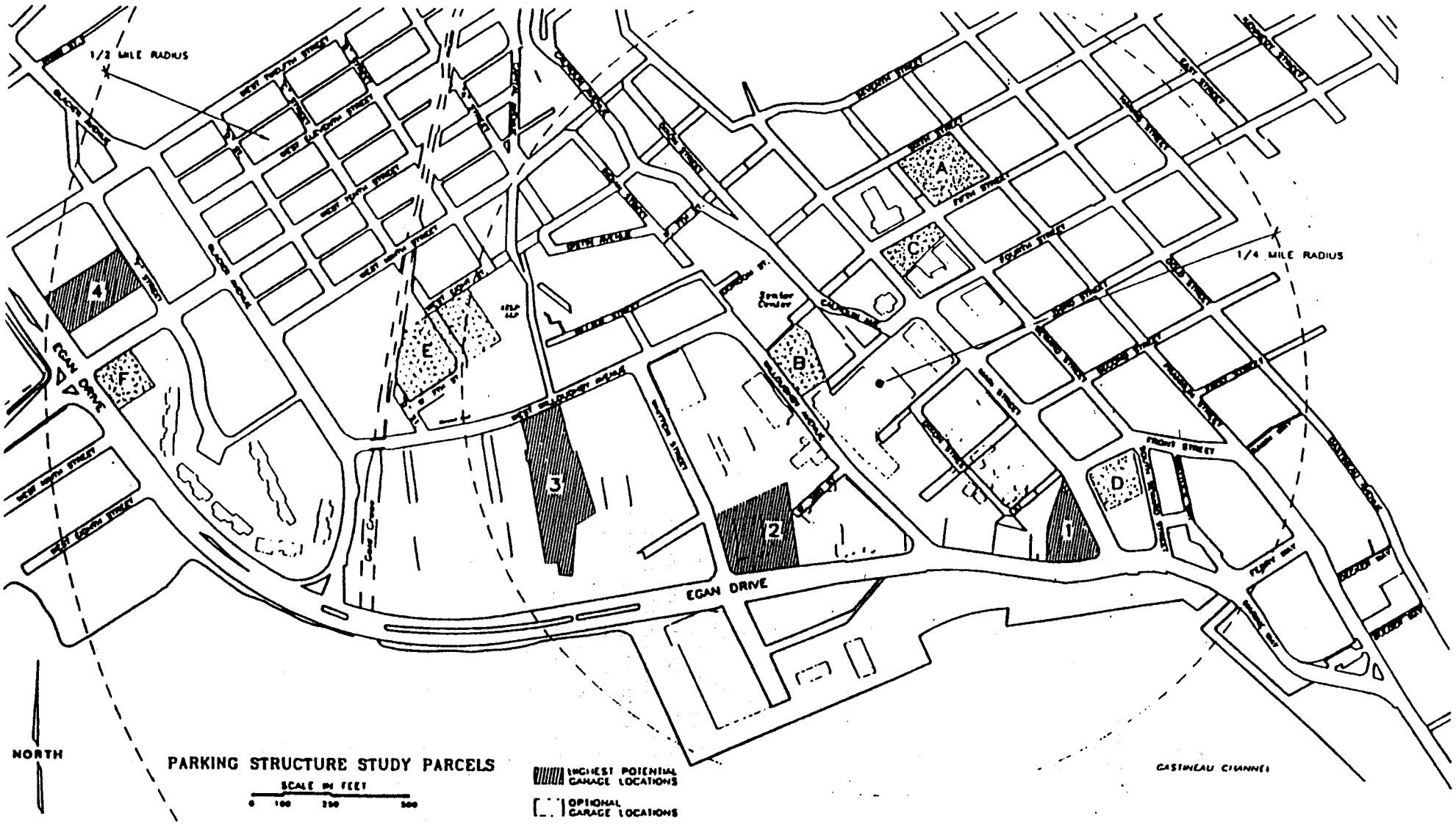

Figure 4: Potential sites considered for new parking structures.

2. New structure between Willoughby and Whittier Streets, on the site of the **Armory Building**: A new armory is currently under design at a different location. The property may be redeveloped for other uses. Current land ownership and parcel shapes may require some modifications to property ownership to provide a parcel conducive to a parking structure. Current landowners include State Mental Health, the State, and the CBJ. Two options were developed for this site. Option 1 is a large parking-only structure providing 404 stalls in 163,200 s.f., 4 stories. Option 2 leaves the existing large surface lot next to the Public Safety Building and provides retail/office space along Egan Drive. This structure accommodates 302 stalls in 111,800 s.f. and 4 stories.
3. New structure on **"Tank Farm"** site: This property, accessed by West Willoughby Avenue, is currently for sale. The walking distance to the State Office Building Willoughby Avenue entrance is approximately 1,000 feet (with a pedestrian connection to Whittier Street near the south end of the lot). By comparison, the current walking distance to the same State Office Building entrance from the sub-port lot where many of these employees currently park is approximately 750 feet. Rough layouts of the site indicate that approximately 500 spaces could be accommodated in a 170,100 s.f. structure.
4. New structure on **Bill Ray** parking lot: The existing parking lot provides 72 surface spaces that serve the Bill Ray building. This lot could potentially be developed with a shuttle service to serve the study area. It is approximately a 0.55 mile route to the State Office Building and another 0.3 miles to the City Hall location. The capacity is approximately 350 spaces.

Other Optional Garage Locations

A. Capital Park: This location has a very desirable proximity to the Capitol, State Office Building, and other offices. It is currently a public park, and a major part of the residential fabric. Any new structure should provide an equivalent or improved playground on the upper level, with parking concealed below. An initial look at the site suggests that the parking structure, beginning on 5th Street, could incorporate four floors of parking with a roof top public park at approximately 6th Street level. Approximately 75 spaces per floor could be accommodated for a total of 300 spaces. Excavation costs may be substantial depending on site layout. The access route would be via Main Street and Fifth Street with an entrance on Fifth Street or Seward Street. The intersection and Main Street and Fifth Street would need further study as to its ability to accommodate increased traffic from this option. On-street parking on Fifth Street from Main Street to Seward or Franklin Street would probably need to be eliminated so as to accommodate the additional traffic.

B. Expansion of the existing **State Office Building Parking**, north: The existing north structure has been studied in the past to see if its capacity could be increased. In the current layout, there are 42 spaces per floor. The ability of the structure to incorporate additional stories of parking is in question, particularly with new earthquake design requirements. This fact, coupled with more restrictive building codes now in place, makes it impractical to add capacity. It is possible that the degree of structural modification necessary, if at all possible, will require costs approaching that of a demolition and reconstruction. Impacts on Main, 5th Street and Seward Street would require further analysis, depending on the location of the entrance(s).

C. Adding to the structure adjacent to (north of) the **State Capitol Building**: This option has been explored in the past, as part of major improvements to the facility. There are currently 37 spaces on the roof level. Additional levels would supply even less spaces per floor due to ramping requirements. The Capital Building rises three stories above

the top surface of the lot. Four stories (which would include roof top parking) would provide 120 spaces or less. Due to the small floor template, the efficiency of this structure is of concern. As with the Capital Park site, access at Fifth and Main is a major concern.

D. Development of a structure over the surface lot adjacent to **Sealaska Corporation**: The Sealaska Corporation has been considering development of this site as a mixed-use property with some sub-surface parking. This development plan assumed the displaced surface parking and demand generated by the new development would be included in parking developed on the "Capital Motors" site across Main Street from the facility. Because the property is currently privately owned, and because this site is so close to the Telephone Hill option (see option 1) this site is seen as lesser potential.

E. The **Federal Building Parking Lot**: This site was identified as a potential location for a satellite lot with shuttle service to the State Office Building. Before this can be further explored, the potential for a CBJ/Federal government joint use should be explored. Past efforts to secure joint parking agreements were not successful.

F. The surface lot currently serving the **Goldbelt Office Building**: This site provides 118 parking spaces available by permit to employees of the building. This site would require shuttle service to serve the study area. The shuttle costs and distance are similar to those estimated for development of the Bill Ray lot. However, the smaller template would affect the efficiency of the parking structure.

Others

In the course of this analysis, other options were mentioned as potential for adding to the parking supply. Some of those others that were mentioned are:

- Mineshafts: abandoned mine shafts were mentioned as potential for adding to the supply. This option was not explored further at this time because of safety concerns and distance from major pockets of demand for parking.
- Retrofitting vacant buildings: no vacant buildings within acceptable walking distance to the large pockets of employee demand were identified in the course of analysis. There may be other options outside the study area. Retrofitting buildings that were not originally designed for parking typically does not provide very efficient layout of parking and is typically not cost effective compared to the development of new parking structures.
- Provision of parking in the air space above vacant land or streets. This solution builds on the notion that land-costs for public parking are negligible if parking is built in the air space over public property, such as street right-of-ways. Major considerations include efficiency of layout (street must be wide enough to allow for parking and circulation space and the ability to go up more than one story which helps justify the costs for the support structures) and impacts to views. Based on the topography of downtown Juneau, Egan Drive or streets to the west of Telephone Hill (such as Whittier or Willoughby) are the most likely candidates for potential air space parking. Because of the impacts to water-view, particularly from the hills to the north and east, development of parking in the air space over Egan Drive is not recommended. If desired, parking over the air-space on Willoughby or Whittier could be further explored, particularly as an extension of a potential new parking structure adjacent in order to provide sufficient efficiency in parking structure circulation.

Ranking of Build Alternatives

In order to objectively compare the different build alternatives and identify those that should be pursued first, the different alternatives were rated based on the following categories:

- Potential # of new spaces gained
- Walking distance to area of greatest demand
- Estimated cost per space
- Access
- How well a parking structure fits into surrounding neighborhood
- Other issues regarding the individual locations

It is recognized that the importance of the different rating factors is subjective. Three different weighting approaches were analyzed to illustrate the sensitivity of the sites to ranking approaches. Tables summarizing the ranking of the potential alternative build locations are provided in Attachment E. According to the ranking process, if all factors are rated evenly, the highest ranked location is the Armory lot. This site is followed by the Tank Farm site and the Telephone Hill site. Based on direction from the Public Works and Facilities Committee, this consultant team was directed to focus on three build alternatives for providing design concepts and basic structural and cost analysis:

- The Armory site, a hybrid of the two previous design options which include a larger footprint with first floor retail
- Telephone Hill site with footprint contained to the Capital Motors Site
- Telephone Hill site with footprint extending up hill and could be tied into potential future Capital Building complex

The conceptual design and cost analysis is provided under separate cover.

IMPLEMENTATION CONSIDERATIONS

Parking Supply Policy

Juneau needs a policy about how much parking to supply. A supply policy establishes to what extent parking deficits should be addressed by adding to the supply. To meet 100% of the demand at the peak time is like designing the church for Easter Sunday. Just as that provides too many seats for all the other Sundays, such a parking policy would provide a wasteful excess of parking spaces for the other days of the year. Additionally, building to satisfy the peak demand, specifically for work commuters, is also inappropriate because it takes away the incentive of tight supply, which will lead some commuters to consider alternative commute modes.

On the other hand, an insufficient parking supply leads to illegal parking, spillover into neighboring communities and businesses, attrition in customer base and the exiting of businesses from the area in which the shortage is profound.

Typically, a policy is set based on knowledge of annual patterns of demand. Shopping centers, for example, often design for the 20th highest hour of the year. That means that for 19 hours of the year, there may be more cars than parking spaces (source: Parking for Shopping Centers, Urban Land Institute).

For downtown Juneau, there simply aren't data for definitive parking supply analysis. While the peak demands for each of three seasons have been estimated, nothing is known of the patterns of demand within the seasons. Therefore, a "Shopping Center Approach" tied to a ranked hour of demand is not feasible.

The following is a suggested approach to establishing a supply policy for dealing with the current estimated shortfall:

- Determine the realistic goals for reducing demand created by work commuters.
- Since the parking demand estimates cover a range based on potential deviations in the assumed rates, the supply strategy should focus on the lower end of the range, to start. As additional information is gathered, the range can be narrowed down and the planned supply adjusted accordingly.

The shortfall could be as high as the upper end of the range (or even higher, with Convention Center events and loss of the sub-port lot). However, for the Juneau situation, because there are still a few particular items that need further study (see short-term Steps in Recommendations section), a prudent course of action would:

- Start with an early action program of demand reduction, parking management, and, if opportunities present themselves, provision of interim surface lots, if available, and remote lots with shuttles.
- Proceed with site acquisition, design and construction of a 300 to 500 space garage. It is very unlikely that even an aggressive demand reduction program could reduce the deficit below this level, especially if the site could serve more than one sub-area
- Structured parking shouldn't go beyond this until there is some experience.

Attachment F provides a draft policy statement for consideration.

Demand Reduction Potential

As noted earlier, workers on regular schedules are those most likely to be affected by demand reduction programs. Capital transit estimates that it currently serves about 5 percent of the work commuters on a regular basis. With aggressive reduction programs such as enhanced transit service and carpool incentives an additional 5-10 percent reduction in work commuter demand might be realized. For the purposes of this analysis, we assume that it is in the interest of the CBJ to reduce work related travel in order to reduce parking demand as well as reduce vehicle trips in the study area. In planning for parking supply, we assume that up to

10 percent additional work related demand could be reduced with aggressive programs. The recommended phased approach, as provided later, includes a measure to evaluate the success of TDM programs and adjust the supply accordingly.

Parking Supply Approach

The additional parking spaces can be provided as a combination of new stand alone parking facilities, expansions to existing structures, "piggy backing" on new developments and other opportunities. If appropriate satellite lot locations can be identified this may also help address the needed additional supply.

Modifications to Zoning Requirements

A review of existing parking requirements (Chapter 49.40.210) indicates that current parking requirements for most land uses are not out of line with requirements in many other jurisdictions and certainly represent reasonable requirements of developers. A few specific modifications are listed here for consideration:

Residential Uses. The requirement for two spaces per home or one space per bedroom in multi-unit housing may be excessive for residential uses in the study area. Based on comments from residents, a low standard rate was used in the demand calculations. Several residents stated that they do not own a vehicle, and many others indicated that only one vehicle was owned in the household. This indicates that the often used standard rate of 2 per household (ITE), **for the downtown residents**, may be excessive. (A study indicated of multi-unit housing in the CBD conducted by CBJ several years ago indicated that the peak parking demand for multi-unit housing was around ½ space per unit. This study should be updated.) The rate assumed in this analysis was 1 per residential unit, based on CBD specific estimates provided the Urban Land Institute. However, additional study should be conducted to establish car ownership and geographical boundaries for a lower requirement if such a standard is indicated.

Reductions to Reflect Internal Capture in CBD. Also, if additional data collection (as described later under short-term steps, Recommendations section) indicates a consistent level of internal capture, a reduced rate for restaurant and commercial uses in the specific areas may be appropriate.

Tourist Retail. Another exception that may merit reconsideration is the requirement for retail commercial use. Currently the requirement for retail commercial use is 1 space per 200 square feet gross floor area or five spaces per 1,000 gsf. Tourist retail appears to be generating a peak demand of around 3 spaces per 1,000 gsf and other retail, around 4 spaces per 1,000 gsf. However, no different requirements are recommended for tourist related retail uses as the definition of such would be subjective and could change focus from tourist related to more traditional retail uses without going through a reassessment of requirements.

Fee-In-Lieu Program. It appears that, in general, the problem with the current parking supply is not with the requirements. The problem comes from the fact that so many commercial businesses, offices and residential units do not currently meet the code requirements. A centralized parking program with a fee-in-lieu component would offer

developers who would have difficulty meeting code requirements on site with a way to provide code required parking supply within walking distance. Rather than granting exceptions to the parking requirement because of land constraints or other reasons, parking could be provided in a centralized parking structure.

Revision to Current Allowed Reduction. The current requirements allow for a reduction in the off-street parking and loading requirements of 30% in the PD1 District and 40% for new or expanded developments in the PD2 District. Given the current shortfalls, it is recommended that this reduction be eliminated and replaced with a fee-in-lieu option that allows for the development, if unable to provide required parking on site, to pay for unsupplied parking in a centralized parking structure. This option should apply only to the area within which centralized parking is planned and instituted only after the centralized parking is identified and planned for completion (interim surface lots could suffice). Note that contributing to centralized parking does not have to be site specific. As centralized parking is developed, short-term parking on street frees up (assuming enforcement steps) and patrons can use any spaces that are convenient to them, not necessarily spaces in a new facility built with in-lieu fees.

Parking Dimensions. The current minimum requirement for parking space is 17' by 8½' and a drive aisle width of 24' for 90° parking. This area is suitable, but considered minimal, for long term parkers. According to the National Parking Association, it is not considered adequate for spaces that experience high turnover. Spaces that experience high turnover should provide a minimum of around 9' width and a module width (drive aisle plus two parking spaces) for 90° parking of 62'. Some reductions in module width can be made with increases in space width.

It is recommended that the CBJ adopt standards that provide specific dimensions for angled parking, as the current standards do not. Specific standards will be recommended in a future version of this report. As described earlier in this report, the small size of the high turnover spaces in the garage may contribute to their underutilization. In a sampling of lots in the study area, approximately 30% of the vehicles fit in a "large" category. This included full size pick-ups with cab extensions, large sport utility vehicles and full size vans. Specifications for a sample of vehicles that fit into this category and were observed with some frequency in the study area are summarized in the following table:

Vehicle	Overall Length (inches)	Width (inches)
Chevy Suburban	219.5	76.7
Ford F-10 Pickup	212	74
Ford F-250 Pickup (Regular Cab)	222.3	78.4
Ford Windstar Wagon	201.2	75.8
Ford F-150 SuperCab Flareside	224.5	79.1
Chevy Express Van	218.7	79.2
Ford Expedition	204.6	77.5

Based on the high percent of large category vehicles, the recommended parking dimensions are based on a design car of 77"x215". Several sources were researched to determine recommended dimensions. During the late 1980's and early 1990's, car trends were moving towards smaller cars. At that time, standard parking dimensions were revamped, many jurisdictions moved towards basing dimension requirements on smaller design vehicles than in

the past and allowances were made for compact vehicles. Those are the standards that many jurisdictions base their parking dimension requirements on. Because of the need to accommodate larger vehicles in Juneau, standards specific to larger design vehicles were consulted as well as applying general design approaches.

As a general rule, the recommended practice for stall width requirements for any given design vehicle is to add 24 inches to the width of the vehicle. For a high turnover lot the added amount should be from 26 to 28 inches for door clearance. For low turnover lots, it should be 20 to 24 inches for door clearance. Based on these general guidelines, and the size of the design car, minimum stall widths for spaces with high-turn over (general public, retail related, etc.) should be 9' and for spaces with lower turn over should be 8'6".

The following dimensions are recommended for overall dimension of parking stall and modules.[8]

Table 3. Minimum Dimensions for high turnover spaces (in feet)

Parking Angle	Stall Width Parallel to Aisle	Stall Depth to Wall	Aisle Width	Wall to Wall Module
90°	9.0	18	25 (two way aisle)	61
75°	9.3	19	22 (one way aisle)	60
60°	10.4	18.5	16 (one way aisle)	54
45°	12.7	17	12 (one way aisle)	46

Table 4. Minimum Dimensions for Lower Turn-over Spaces (in feet)

Parking Angle	Stall Width Parallel to Aisle	Stall Depth to Wall	Aisle Width	Wall to Wall Module
90°	8.5	18	26 (two way aisle)	62
75°	8.8	19	23 (one way aisle)	61
60°	9.8	18.5	17 (one way aisle)	55
45°	12.0	17	139 (one way aisle)	47

Based on the high percent of large category vehicles, compact spaces are only recommended where the space remaining at the end of the parking row is not sufficient to provide a full size parking space, in which case a stall width of 8 feet or more would be acceptable.

For curb parking, where specific spaces are marked, or in calculating the capacity of curb parking, the minimum length for parking stalls should be 22'.[9]

[8] Box, Paul and Neil Kenig. "Parking Layout and Dimension Guidelines. "ITE Journal, April 1984 and ITE Technical Council Committee 5D-8, "Guidelines for Parking Facility Location and Design. ITE Journal, April 1990.

Historic District. Establishment of unique requirements for the historic district is worthy of consideration. Such requirements may include prohibition of development of primary parking facilities and first floor parking. This would prevent the demolition of historic buildings to accommodate parking. However, development of parking in the district could be required to contribute to the public parking supply by contributing to a fee-in-lieu fund.

Financing

There are several opportunities for financing and/or accommodating the new parking supply. Though the scope of this study does not include financing the following list identifies some, but not necessarily all, of the options:

- Local Improvement Districts (LIDs) or Parking District. This measure requires existing landowners (and sometimes business operators) to contribute to the cost of developing parking facilities, an asset from which they will directly or indirectly benefit. Specifics will depend on current legal capability of establishing an LID. New legal procedures may need to be adopted.
- Fees-In-Lieu of Parking Programs (Note these can include up front payments equivalent to hard costs of parking supply and incremental or annual payments for operations, maintenance and taxes)
- Bonding. The ceiling for debt financing is 7% of the assessed value, or approximately $150,150,000. The CBJ currently has debt equal to approximately one third of that amount. Under current interest rates it would take about $500,000 per year to retire a debt load of $6,600,000 over 20 years.
- Downtown Parking Fund. This fund currently exists and has an annual income of about $197,000 from lease revenues and $10,000 from ordinance violations. The funds are expended primarily for costs and services related to maintaining and operating the parking garage.
- General Sales Tax. The general sales tax has been used for financing of capital improvements. A 1% tax was used to fund the new police station. A similar tax could be proposed to partially fund a new parking facility.
- Local Sales Tax Capital Project Funding. The current plan would provide $2.7 million for general capital projects and $5.4 million for street capital projects. This may be a potential source to fund a parking structure in the future.
- Donation of City Land to Developers of Public Parking
- Use of State Land on which the City could develop parking
- Price Parking Fees to Reflect Market Value
- Revenues from metered parking, if instituted
- State and Federal grants for economic development. There is a State Municipal Capital Project Matching Grant Program which requires a 30% match. This program requires specific legislation for specific projects. Since the State offices create a large portion of the parking demand in the study area, it appears that this would be an appropriate source of funding for this project.

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[9] Standard based on 8'6" x 18' stalls. From Robert A. Weant and Herbert S. Levinson, Parking, ENO Foundation, 1990.

Management Responsibility

Responsibility for Parking Management is often scattered in several departments with separated responsibilities for planning, enforcement and regulation. This is not uncommon. However, as parking becomes more of an issue and constraint to development, there will be a need for more coordinated responsibility. This responsibility can lie within the current City structure or with a separate Parking Authority. Because of the dual goals of providing adequate parking and reducing demand for long-term parking, it is recommended, at this time, that the CBJ identify a Director of Parking and Demand Reduction, probably within the Public Works Department, that will be responsible for coordinating all aspects of parking and demand reduction. A separate Parking Authority is probably not necessary at this time. The Director of Parking and Demand Reduction can coordinate physical aspects of parking, such as construction of parking, modifications to parking spaces (additional on-street parking and restriping of facilities, such as the short-term public parking in the Library Garage) with Public Works and enforcement of parking limitations with the Police Department. A new position(s), such as a Transportation Coordinator, should be established to promote demand reduction programs. This position could report to the Director of Parking and Demand Reduction and also coordinate with Capital Transit and be responsible for the promotion and administration of all demand reduction programs such as carpool match service, coordinating transit subsidy programs for employers and a Guaranteed Ride Home program. The Director of Parking and Demand Reduction should have overall responsibility for the leasing and permitting of spaces in all new parking facilities as well as the existing Library Garage. It may be possible that the Transportation Coordinator could assist in this aspect of Parking Management, splitting the time between Transportation Coordination activities (marketing and program administration) and parking permitting and leasing of spaces.

City Structure

A Parking Division could be created within an existing department, such as Planning or Public Works. This division would be responsible for the coordination of all City department activities related to parking. Alternatively, a new department responsible for parking could be created within the City structure.

Parking Authority

A Parking Authority is a semi-autonomous agency of local government with typically broad responsibilities for parking. These responsibilities may include planning, design and construction, finance, land acquisition, operation, monitoring, and enforcement. It may provide centralized control of both off-street and on-street parking.

The advantages of a Parking Authority are that it creates a body with a central focus on the issue of parking, with minimum distraction by other unrelated responsibilities. It also provides visibility for parking as a critical need. It typically would pay all of its operating and maintenance costs from revenues and may pay a portion of capital costs.

The authority director should involve other City Departments including traffic operations and Capital transit.

The necessity of a parking authority is related to the size of the current City Structure, the availability of staff in different departments to support parking related functions and the amount of parking under City control.

RECOMMENDATIONS

In order to address the current shortfalls, a phased approach is recommended. This strategy focuses on specific steps to be taken in the short term (within six to twelve months), mid term (one to three years) and long term (three years and more). Attachment G provides a Gannt chart that illustrates this phased approach over a period of time and represents the consultants recommended actions and programs for addressing the current parking situation in downtown Juneau.

Short Term Steps (within six to twelve months)

- Establish a parking supply policy that defines supply levels for commercial short-term supply and long-term parking supply.
- Increase the parking availability for commercial patrons:

  -Identify the extent of use of short-term parking by employees (license plate surveys and/or cooperation with employers)

  -Test enforcement and meter options
- Modify layout of short-term parking in Library Garage
- Establish need and desire for RPZ
- Identify location for mid term build alternatives, begin financing work
- Adopt a transportation management program for CBJ employees.
- Build partnership with State to address and reduce employee parking demand
- Establish Fee-In-Lieu program, eliminate parking reduction allowances
- Lay groundwork for potential future piggy-back arrangements
- Install bicycle racks at a few key locations (3 to 4 to start)
- Identify steps needed to expand transit service
- Collect additional data, particularly for the State employees (mode of travel, vehicle occupancy, parking location, home location), restaurants and commercial businesses (what % of their patrons are employees or residents who walked/biked to the business) and for residents (car ownership, walk/bike to work). If possible, it would also be helpful to know the percent of seasonal legislative staff have cars in Juneau. The data will help narrow down the parking demand and provide guidance for designing demand reduction programs as well as indicate whether modifications to zoning requirements are appropriate.

Mid Term Steps (one to three years)

- Establish demand reduction programs including:
- Appointment or hiring of a transportation coordinator

- Identification of preferential HOV parking
- Ridematch services.
- Secure funds for enhanced transit service
- Development of additional parking supply: construction of centralized parking structures should be phased in and reevaluated on a case by case basis. Surface lots can be established on a temporary basis to act as place holders for potential future structures and provide additional parking while a centralized structure is being developed and the initial use of the structure evaluated. Because of the immediate need for a fee-in-lieu program, and the extent of the current shortfall, at a minimum a surface lot and/or 300 to 500 spaces of new parking should be provided in the near future.

Long Term

- Determine effectiveness of demand reduction programs, modify programs where appropriate
- Re-evaluate supply strategy based on results of reduction programs

APPENDIX

Attachment A

Land Use and Off-Street Parking Supply by Block

ZONE	BLOCK ID	GOVT OFFICE	LEGISLATIVE OFFICE	GENERAL OFFICE	Bank	Church/Fraternal Org	RESTAURANT /CLUB	RESIDENTIAL UNITS	HOTEL UNITS	TOURIST RETAIL	OTHER RETAIL	STORAGE	Misc. Land Use	Misc. Land Use Area	# OFF-ST PARKING SPACES
		OFFICE SUBAREA													
O	A1							2							18
O	A20					2,048		9					Library	6,747	7
O	A6	92,000						3							34
O	A7	108,149						1							18
O	K72							67							36
O	BOD							6							
O	BOE							3							
O	A8	94,988													12
O	K68	116,943				959	5,332	3					Youth Center & Armory	18,129	500
O	K73	318,132													388
O	K74												Convention Center	30,800	
O	K75	13,101							105			4,167			121
O	A19		82,670												77
O	A22		36,000					8						12,840	14
O	K00											7,200			186
TOTAL		743,313	118,670	0	0	3,007	5,332	102	105	0	0	4,167	0	68,316	1,206

Land Use and Off-Street Parking Supply by Block

ZONE	BLOCK ID	GOVT OFFICE	LEGISLATIVE OFFICE	GENERAL OFFICE	Bank	Church/Fraternal Org	RESTAURANT /CLUB	RESIDENTIAL UNITS	HOTEL UNITS	TOURIST RETAIL	OTHER RETAIL	STORAGE	Misc. Land Use	Misc. Land Use Area	# OFF-ST PARKING SPACES
R	A7-2							18							7
R	A8-2							10							8
R	A9-2							8							7
R	A10			14,054	6,258	4,660	3,118	2							57
R	A11			15,511				19							53
R	A17			13,848				156							26
R	A18			13,313		13,792		14							10
R	A24					700		10							22
R	A4							8			30,078				52
R	A5			18,428	6,722		12,848		6		5,736	7,575			17
R	A12							8							5
R	A13							10							3
R	A14							6							
R	A15							2							
R	A16			22,686				3					School	9,874	56
R	A25			19,000		15,725		9					Nursing Home	22,377	11
R	A26							17					Youth Hostel	4,548	31
R	A27							16							6
R	A28			4,693				5							3
R	A29							11							10
R	A36							10							16
R	A37							30							3
R	A38							7							3
R	A51							6							1
R	A55			1,100				20							16
R	Goldbelt Avenue							7							6
R	F01							14							19
R	A9			41,103				23				2,200			67
R	BOO							4							2
R	BOP							2							0
R	BOQ														0
R	BOR							1							1
R	BOS							1							
R	BOT							8							2
R	BOU							2							0
R	H02			3,120				8		10,898		760			
R	H03			3,922				3		9,355					1
TOTAL		0	0	170,781	12,980	35,077	15,966	494	6	20,253	35,812	10,535	0	36,799	629

Land Use and Off-Street Parking Supply by Block

ZONE	BLOCK ID	GOVT OFFICE	LEGISLATIVE OFFICE	GENERAL OFFICE	Bank	Church/Fraternal Org	RESTAURANT /CLUB	RESIDENTIAL UNITS	HOTEL UNITS	TOURIST RETAIL	OTHER RETAIL	STORAGE	Misc. Land Use	Misc. Land Use Area	# OFF-ST PARKING SPACES
T	1														19
T	2b-c					5,100		2	194			12,320			46
T	A12					15,717		52							42
T	A13			42,028			3,456	1			9,821	11,838			6
T	A2			45,294	12,534		5,267	14		11,970	7,965	14,102	Theater	6,627	36
T	A3						3,026	1		7,994					
T	BOH								42						
T	BOI			7,720			6,568			11,928					
T	BOJ									2,349					
T	BOK			6,000				2		10,686		1,272			
T	BOL			4,244		4,399		1					Shelter	5,658	
T	BOM									150					
T	BON							3							
T	I1							2							
T	I3			17,112			9,043			10,861					92
T	K76			40,628	1,850										70
T	K77			17,742			1,800			11,897					0
T	K78											1,872			0
T	K79	14,640		20,832			12,176	26		58,156		5,673			10
T	K81			9,849			6,502	60		14,419					84
T	K82	28,175						7		10,357			Library	17,306	336
T	K83												0	28,593	723
TOTAL		42,815	0	211,449	14,384	26,216	49,868	171	236	180,767	17,786	47,077			

Attachment B

OFFICE ZONE LEGISLATIVE SEASON WEEKDAY

MAR Time	% of PK. Time	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	LEGISLATIVE OFFICE	CHURCH/FRATERNAL ORG.	CONVENTION CENTER	HOTEL	LIBRARY	YOUTH CENTER/ARMORY	THEATER	SHELTER	TOTAL	PEAK H'
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
		Check Peak parking month %'s above																
06 00	07 00	0	0	1	59	0	0	382	87	0	0	46	13	11	0	0	599	
07 00	08 00	0	0	2	53	0	0	1150	260	0	37	35	13	34	0	0	1586	
08 00	09 00	0	0	4	49	0	0	1694	384	1	37	30	13	51	0	0	2264	
09 00	10 00	0	0	9	46	0	0	1815	411	1	37	25	13	54	0	0	2412	Pk Hr.
10 00	11 00	0	0	13	40	0	0	1815	411	2	37	19	13	54	0	0	2405	
11 00	12 00	0	0	16	40	0	0	1634	370	2	37	16	13	49	0	0	2178	
12 00	13 00	0	0	23	40	0	0	1634	370	2	37	16	13	49	0	0	2184	
13 00	14 00	0	0	20	40	0	0	1755	398	2	37	19	13	53	0	0	2337	
14 00	15.00	0	0	20	41	0	0	1694	384	2	37	19	13	51	0	0	2261	
15 00	16.00	0	0	22	44	0	0	1392	315	2	37	25	13	42	0	0	1892	
16 00	17.00	0	0	31	52	0	0	847	192	2	37	33	13	25	0	0	1232	
17:00	18:00	0	0	39	57	0	0	424	96	2	37	38	0	13	0	0	705	
18:00	19:00	0	0	44	63	0	0	127	29	0	0	41	0	4	0	0	308	
19:00	20:00	0	0	44	65	0	0	127	29	0	0	49	0	4	0	0	317	
20:00	21:00	0	0	44	66	0	0	64	14	0	0	52	0	2	0	0	241	
21:00	22:00	0	0	39	67	0	0	64	14	0	0	55	0	2	0	0	240	
22:00	23:00	0	0	31	67	0	0	0	0	0	0	55	0	0	0	0	152	
23:00	00:00	0	0	22	67	0	0	0	0	0	0	55	0	0	0	0	144	
MAXIMUMS:		0	0	44	67	0	0	1,815	411	2	37	55	13	54	0	0	2,412	

PARKING DEMAND BY LAND USE: PEAK WEEKDAY

RESIDENTIAL COMMERCIAL ZONE LEGISLATIVE SEASON WEEKDAY

MAR	% of PK	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	LEGISLATIVE OFFICE	CHURCH/FRATERNAL ORG.	CONVENTION CENTER	HOTEL	School	Youth Hostel	Nursing Home	SHELTER	
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
		(Check Peak parking month %'s above															
Time	Time																TOTAL
05 00	06 00	0	0	0	494	0	15	0	0	0	0	3	0	10	7	0	529
06 00	07 00	8	1	3	430	1	88	0	0	2	0	3	0	10	7	0	551
07 00	08 00	18	2	7	390	2	264	0	0	4	0	2	9	10	14	0	721
08 00	09 00	40	4	13	361	3	389	0	0	9	0	2	18	5	14	0	859
09 00	10 00	65	6	26	336	6	417	0	0	15	0	1	44	2	24	0	943
10 00	11 00	83	38	39	291	7	417	0	0	19	0	1	13	0	24	0	933
11 00	12 00	46	42	33	296	8	375	0	0	22	0	1	13	2	24	0	863
12 00	13 00	48	43	46	291	8	375	0	0	22	0	1	13	2	24	0	874
13 00	14 00	46	42	39	296	8	403	0	0	22	0	1	27	2	24	0	911
14 00	15 00	45	41	39	301	8	389	0	0	21	0	1	13	2	24	0	885
15 00	16 00	83	38	65	326	7	320	0	0	19	0	1	13	6	24	0	903
16 00	17 00	75	34	91	380	6	195	0	0	18	0	2	44	6	24	0	877
17 00	18 00	78	35	117	420	7	97	0	0	18	0	2	0	8	24	0	807
18.00	19.00	85	8	130	464	0	29	0	0	0	0	2	0	10	14	0	744
19.00	20.00	83	8	130	474	0	29	0	0	0	0	3	0	10	14	0	751
20.00	21:00	58	5	130	484	0	15	0	0	0	0	3	0	10	7	0	712
21.00	22:00	30	3	117	489	0	15	0	0	0	0	3	0	10	7	0	674
22:00	23:00	13	1	91	494	0	0	0	0	0	0	3	0	0	7	0	609
23.00	00.00	0	0	65	494	0	0	0	0	0	0	3	0	0	7	0	570
MAXIMUMS:		85	43	130	494	8	417	0	0	22	0	3	44	10	24	0	943

PARKING DEMAND BY LAND USE: PEAK WEEKDAY

TOURIST ZONE LEGISLATIVE SEASON WEEKDAY

MAR	% of PK	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	CHURCH/FRATERNAL ORG.	HOTEL	LIBRARY	THEATER		
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%		
		Check Peak parking month %'s above												
Time	Time												TOTAL	PEAK HR.
06:00	07:00	4	5	10	149	1	109	30	1	50	0	0	359	
07:00	08:00	9	12	20	135	2	327	96	3	38	0	0	642	
08:00	09:00	20	27	41	125	4	482	141	7	32	0	0	879	
09:00	10:00	32	44	81	116	6	516	152	11	27	0	0	986	
10:00	11:00	41	281	122	101	8	516	152	14	21	10	0	1266	
11:00	12:00	23	315	102	103	9	465	136	16	18	14	32	1231	
12:00	13:00	24	323	143	101	9	465	136	16	18	17	48	1299	
13:00	14:00	23	315	122	103	9	499	146	16	21	17	48	1318	Pk Hr.
14:00	15:00	22	306	122	104	9	482	141	15	21	17	48	1288	
15:00	16:00	41	281	204	113	8	396	116	14	27	24	48	1271	
16:00	17:00	37	255	285	132	7	241	71	13	35	28	48	1152	
17:00	18:00	39	264	367	145	7	121	35	13	41	31	64	1127	
18:00	19:00	42	58	407	161	0	36	10	0	44	35	64	857	
19:00	20:00	41	56	407	164	0	36	10	0	53	28	79	875	
20:00	21:00	29	39	407	168	0	18	5	0	56	17	79	819	
21:00	22:00	15	20	367	169	0	18	5	0	59	7	79	740	
22:00	23:00	6	9	285	171	0	0	0	0	59	0	64	593	
23:00	00:00	0	0	204	171	0	0	0	0	59	0	48	481	
MAXIMUMS:		42	323	407	171	9	516	152	16	59	35	79	1,318	

PARKING DEMAND BY LAND USE: PEAK WEEKEND

OFFICE ZONE LEGISLATIVE SEASON WEEKEND

MAR	% of PK	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	LEGISLATIVE OFFICE	CHURCH/FRATERNAL ORG.	CONVENTION CENTER	HOTEL	LIBRARY	YOUTH CENTER/ARMORY	THEATER	SHELTER		
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
		Check Peak parking month %'s above																
Time	Time																TOTAL	PEAK HR.
06 00	07 00	0	0	1	64	0	0	74	12	0	0	38	0	2	0	0	191	
07 00	08 00	0	0	1	59	0	0	223	36	1	0	33	0	11	0	0	364	
08 00	09 00	0	0	2	55	0	0	297	47	4	37	27	0	34	0	0	504	
09 00	10 00	0	0	3	50	0	0	297	47	6	37	22	0	51	0	0	512	
10 00	11 00	0	0	3	48	0	0	372	59	9	37	19	0	54	0	0	602	
11 00	12 00	0	0	10	48	0	0	372	59	11	37	16	7	54	0	0	614	Pk Hr
12 00	13 00	0	0	15	47	0	0	297	47	12	37	16	8	49	0	0	530	
13 00	14 00	0	0	15	48	0	0	223	36	13	37	19	9	49	0	0	449	
14 00	15 00	0	0	15	49	0	0	149	24	13	37	22	11	53	0	0	372	
15 00	16 00	0	0	15	50	0	0	74	12	12	37	27	13	51	0	0	292	
16 00	17 00	0	0	20	55	0	0	74	12	10	37	33	11	42	0	0	293	
17 00	18 00	0	0	30	57	0	0	74	12	6	0	38	0	25	0	0	245	
18 00	19 00	0	0	32	59	0	0	74	12	0	0	44	0	13	0	0	233	
19 00	20 00	0	0	33	62	0	0	0	0	0	0	49	0	4	0	0	148	
20 00	21 00	0	0	33	64	0	0	0	0	0	0	52	0	4	0	0	153	
21 00	22 00	0	0	32	65	0	0	0	0	0	0	55	0	2	0	0	153	
22 00	23 00	0	0	28	68	0	0	0	0	0	0	55	0	0	0	0	149	
23 00	00 00	0	0	23	67	0	0	0	0	0	0	55	0	0	0	0	145	
MAXIMUMS		0	0	33	67	0	0	372	59	13	37	55	13	54	0	0	614	

PARKING DEMAND BY LAND USE: PEAK WEEKEND

RESIDENTIAL COMMERCIAL ZONE LEGISLATIVE SEASON WEEKEND

MAR	% of PK	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	LEGISLATIVE OFFICE	CHURCH/FRATERNAL ORG.	CONVENTION CENTER	HOTEL	School	Youth Hostel	Nursing Home	SHELTER		
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
		Check Peak parking month %'s above																
Time	Time																TOTAL	PEAK HR.
05 00	06 00	0	0	0	494	0	0	0	0	0	0	3	0	7	0	0	504	
06 00	07 00	3	0	3	469	0	17	0	0	4	0	2	0	7	0	0	505	
07 00	08 00	10	1	3	435	0	51	0	0	15	0	2	0	14	0	0	531	
08 00	09 00	30	3	5	400	0	68	0	0	45	0	2	0	14	0	0	568	
09 00	10 00	45	4	8	366	1	68	0	0	68	0	1	0	24	0	0	584	
10 00	11 00	73	31	10	351	1	85	0	0	109	0	1	0	24	0	0	686	
11 00	12 00	85	37	30	351	1	85	0	0	128	0	1	0	24	0	0	742	
12 00	13 00	95	41	45	346	1	68	0	0	143	0	1	0	24	0	0	765	
13 00	14 00	100	43	45	351	1	51	0	0	151	0	1	0	24	0	0	766	Pk Hr.
14 00	15 00	100	43	45	361	1	34	0	0	151	0	1	0	24	0	0	761	
15 00	16 00	90	39	45	371	1	17	0	0	136	0	2	0	24	0	0	724	
16 00	17 00	75	33	60	400	1	17	0	0	113	0	2	0	24	0	0	725	
17 00	18 00	65	28	90	420	1	17	0	0	98	0	2	0	24	0	0	745	
18 00	19 00	60	5	95	430	0	17	0	0	0	0	2	0	14	0	0	624	
19 00	20 00	55	5	100	454	0	0	0	0	0	0	3	0	14	0	0	632	
20 00	21 00	40	3	100	469	0	0	0	0	0	0	3	0	7	0	0	623	
21 00	22 00	38	3	95	474	0	0	0	0	0	0	3	0	7	0	0	620	
22 00	23 00	13	1	85	484	0	0	0	0	0	0	3	0	7	0	0	593	
23 00	00 00	0	0	70	494	0	0	0	0	0	0	3	0	7	0	0	574	
MAXIMUMS		100	43	100	494	1	85	0	0	151	0	3	0	24	0	0	766	

PARKING DEMAND BY LAND USE: PEAK WEEKEND

TOURIST ZONE LEGISLATIVE SEASON WEEKEND

MAR	% of PK	GENERAL RETAIL	TOURIST RETAIL	RESTAURANT/CLUB	RESIDENTIAL	BANK	GENERAL OFFICE	GOVERNMENT OFFICE	LEGISLATIVE OFFICE	CHURCH/FRATERNAL ORG.	CONVENTION CENTER	HOTEL	LIBRARY	YOUTH CENTER/ARMORY	THEATER	SHELTER		
		70%	75%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
		(Check Peak parking month %'s above)																
Time	Time																TOTAL	PEAK HR.
05 00	06 00	0	0	0	171	0	0	0	0	0	0	53	0	0	0	0	224	
06 00	07 00	1	2	8	182	0	21	4	0	3	0	41	0	0	0	0	243	
07 00	08 00	5	6	8	150	0	63	13	0	11	0	35	0	0	0	0	292	
08 00	09 00	15	19	16	139	0	85	17	0	33	0	30	0	0	0	0	353	
09 00	10 00	22	29	23	127	1	85	17	0	49	0	24	0	0	0	0	376	
10 00	11 00	36	234	31	121	1	106	21	0	79	0	21	0	0	0	0	650	
11 00	12 00	42	275	94	121	1	106	21	0	92	0	18	17	0	36	0	824	
12 00	13 00	47	307	141	120	1	85	17	0	103	0	18	21	0	72	0	931	
13 00	14 00	50	323	141	121	1	63	13	0	108	0	21	24	0	72	0	938	Pk Hr.
14 00	15 00	50	323	141	125	1	42	9	0	108	0	24	28	0	72	0	923	
15 00	16 00	45	291	141	128	1	21	4	0	98	0	30	35	0	72	0	866	
16 00	17:00	37	242	187	139	1	21	4	0	81	0	35	28	0	72	0	849	
17 00	18 00	32	210	281	145	1	21	4	0	70	0	41	0	0	91	0	897	
18 00	19 00	30	39	297	149	0	21	4	0	0	0	47	0	0	91	0	677	
19 00	20 00	27	36	312	157	0	0	0	0	0	0	53	0	0	109	0	694	
20 00	21:00	20	26	312	162	0	0	0	0	0	0	56	0	0	109	0	685	
21 00	22:00	19	24	297	164	0	0	0	0	0	0	59	0	0	109	0	671	
22 00	23:00	8	8	265	168	0	0	0	0	0	0	59	0	0	91	0	597	
23 00	00:00	0	0	219	171	0	0	0	0	0	0	59	0	0	72	0	521	
MAXIMUMS:		50	323	312	171	1	106	21	0	108	0	59	35	0	109	0	938	

Attachment C

ALTERNATIVES

MANAGEMENT OF EXISTING SPACES

RESIDENTIAL PARKING ZONES

BENEFITS
- Increases availability for residential uses
- Increases availability for short term parkers (depending on limitations)
- Income from fines

COSTS
- Loss of spillover parking (approx. 100-150 spaces)
- Increased enforcement
- Signage
- Sticker program
- Administrative time
- Flexibility for visitors/guests of residents

INCREASED/IMPROVED ENFORCEMENT

BENEFITS
- Increased availability for retail and visitor parking
- Income from fines
- Increased sense of security
- Discourages long-term parking: encourages alternative modes

COSTS
- Increased staffing
- Negative Perception

METERED PARKING

BENEFITS
- Increased availability for retail and visitor parking
- Income from meters
- Discourages long-term parking: encourages alternative modes

COSTS
- May discourage some short-term parkers (depends on price structure)
- Increased enforcement staff
- Increased administrative costs
- Cost of equipment (In central downtown area: up to $55,000 for indiv. meters, $125,000 for collection stations)

LIBRARY GARAGE RESTRIPE/MODIFICATION

BENEFITS
- Increased utilization

COSTS
- Loss of approximately 4 short-term spaces
- Restriping costs

ADD ON STREET PARKING (Willoughby)

BENEFITS
- Approximately 12 additional short-term parking spaces for visitors in Office zone

COSTS
- Restriping
- Striping
- Enforcement

PREFERENTIAL HOV PARKING

BENEFITS
- Encourages ridesharing/reduces demand (coupled with reduced parking fee and short supply could have major impacts)

COSTS
- Limits use of preferential spaces
- Signage costs
- Program enforcement

VALET/STACK PARKING

BENEFITS
- Increase capacity (up to 20% increase in area for valet, for stack park area around 30%-40% increase in capacity, depending on layout)

COSTS
- Requires coordination
- Staffing costs (for valet)
- Striping/signage costs
- Limited market for use

REDUCE DEMAND

TRANSPORTATION COORDINATOR

BENEFITS
- Coordination of program elements

COSTS
- Full or part time personnel costs
- Marketing budget

CARPOOL MATCHING PROGRAM

BENEFITS
- Personalized service encourages alternate modes (up to 1% reduction in work related SOV trips)

COSTS
- Software, computers for ridematch program
- Staff time to manage database
- Promotion of program
- May attract some riders from transit

INCREASED TRANSIT SERVICE

BENEFITS
- Encourages alternate modes (5%-10% reduction in work related SOV trips)
- Reduces parking demand and congestion (up to 300 vehicles w/ doubling of services)
- Could include free downtown shuttle

COSTS
- Approximately $3.1 mil. per year increase for doubling service (as per Capital Transit)
- Increased interface transit vehicles in mixed traffic

VANPOOL PROGRAM

BENEFITS
- Encourages alternate modes)
- Reduces parking demand and congestion (very limited application in Juneau

COSTS
- Subsidies (if offered)
- Fleet costs
- Administration staff and costs

CAR SHARING

BENEFITS
- Reduced parking demand (minimal application in Juneau)

COSTS
- Fleet costs
- Insurance costs
- Administration costs

GUARANTEED RIDE HOME (GRH)

BENEFITS
- Encourages alternate modes (2-5% reduction in SOV experienced)

COSTS
- Costs for taxi reimbursement (use rate of 1%-10% of eligible participants)
- Program administration

BICYCLING AND PEDESTRIAN IMPROVEMENTS

BENEFITS
- Eliminates some vehicle trips
- Encourages non-pollutant transportation
- Relatively low costs

COSTS
- Bike racks ($250=$350 each for 4-8 bikes plus installation)
- Bike lockers ($1,000 each for 1-2 bikes)
- Bike racks on buses ($650 each)
- Covered walkways: materials

PARKING PRICING

BENEFITS
- Discourages single occupant vehicles (one of the most effective programs)
- Increased income from fees

COSTS
- Can discourage visitors

LIMITED SUPPLY

BENEFITS
- Discourages single occupant vehicles

COSTS
- Unrealized potential income from fees
- Can discourage visitors

ADD TO PARKING SUPPLY

CENTRALIZED PARKING

BENEFITS
- Promotes shared use: more efficient use of parking
- Economy of scale in development costs
- Reduces requests for exceptions to supply requirements (with fee-in-lieu option)

COSTS
- Land and construction costs
- Operational costs
- Increases walking distances for some

PIGGY BACK PARKING

BENEFITS
- Reduced development costs
- Provides parking in centralized location (depending on location)

COSTS
- Reduced control over management of parking
- Potential loss of revenue

REMOTE PARKING

BENEFITS
- Availability of property
- Potentially lower property costs

COSTS
- Reduced market demand
- Shuttle costs: varies by location and service levels
- Land and construction costs
- Operational costs

Attachment D

DOWNTOWN PARKING STUDY
CONCEPTUAL GARAGE OPTIONS

November 12, 1998

The Transpo Group

MRV Architects

Highest Potential Garage Locations

1. New structure at the south end of **Telephone Hill**: The location is very well situated, with easy walking distance to major pockets of parking demand in the Office and Tourist sub-areas. Current design options consider the portion currently utilized by the existing surface parking lot. Due to the relatively small footprint, the efficiency and cost effectiveness of the site, in its current configuration, is of concern. The design includes one story of retail space along Egan Drive. The 5 story structure could accommodate 204 parking spaces.

2. New structure between Willoughby and Whittier Streets, on the site of the **Armory Building**: A new armory is currently under design at a different location. The property may be redeveloped for other uses. Current land ownership and parcel shapes may require some modifications to property ownership to provide a parcel conducive to a parking structure. Current landowners include State Mental Health, the State, and the CBJ. Two options were developed for this site. Option 1 is a large parking-only structure providing 404 stalls in 163,200 s.f., 4 stories. Option 2 leaves the existing large surface lot next to the Public Safety Building and provides retail/office space along Egan Drive. This structure accomodates 302 stalls in 111,800 s.f. and 4 stories.

3. New structure on **"Tank Farm"** site: This property, accessed by West Willoughby Avenue, is currently for sale. The walking distance to the State Office Building Willoughby Avenue entrance is approximately 1,000 feet (with a pedestrian connection to Whittier Street near the south end of the lot). By comparison, the current walking distance to the same State Office Building entrance from the sub port lot where many of these employees currently park is approximately 750 feet. Rough layouts of the site indicate that approximately 500 spaces could be accommodated in a 170,100 s.f. structure.

4. New structure on **Bill Ray** parking lot: The existing parking lot provides 72 surface spaces that serve the Bill Ray building. This lot could potentially be developed with a shuttle service to serve the study area. It is approximately a 0.55 mile route to the State Office Building and another 0.3 miles to the City Hall location. The capacity is approximately 350 spaces.

Other Optional Garage Locations

A. **Capital Park**: This location has a very desirable proximity to the Capitol, State Office Building, and other offices. It is currently a public park, and a major part of the residential fabric. Any new structure should provide an equivalent or improved playground on the upper level, with parking concealed below. An initial look at the site suggests that the parking structure, beginning on 5th Street, could incorporate four floors of parking with a roof top public park at approximately 6th Street level. Approximately 75 spaces per floor could be accommodated for a total of 300 spaces. Excavation costs may be substantial depending on site layout. The access route would be via Main Street and Fifth Street with an entrance on Fifth Street or Seward Street. The intersection and Main Street and Fifth Street would need further study as to its ability to accommodate increased traffic from this option. On-street parking on Fifth Street from Main Street to Seward or Franklin Street would probably need to be eliminated so as to accommodate the additional traffic.

B. Expansion of the existing **State Office Building Parking**, north: The existing north structure has been studied in the past to see if its capacity could be increased. In the current layout, there are 42 spaces per floor. The ability of the structure to incorporate additional stories of parking is in question, particularly with new earthquake design requirements. This fact, coupled with more restrictive building codes now in place, makes it impractical to add

capacity. It is possible that the degree of structural modification necessary, if at all possible, will require costs approaching that of a demolition and reconstruction.

C. Adding to the structure adjacent to (north of) the **State Capitol Building**: This option has been explored in the past, as part of major improvements to the facility. There are currently 37 spaces on the roof level. Additional levels would supply even less spaces per floor due to ramping requirements. The Capital Building rises three stories above the top surface of the lot. Four stories (which would include roof top parking) would provide 120 spaces or less. Due to the small floor template, the efficiency of this structure is of concern. As with the Capital Park site, access at Fifth and Main is a major concern.

D. Development of a structure over the surface lot adjacent to **Sealaska Corporation**: The Sealaska Corporation has been considering development of this site as a mixed-use property with some sub-surface parking. This development plan assumed the displaced surface parking and demand generated by the new development would be included in parking developed on the "Capital Motors" site across Main Street from the facility. Because the property is currently privately owned, and because this site is so close to the Telephone Hill option (see option 1) this site is seen as lesser potential.

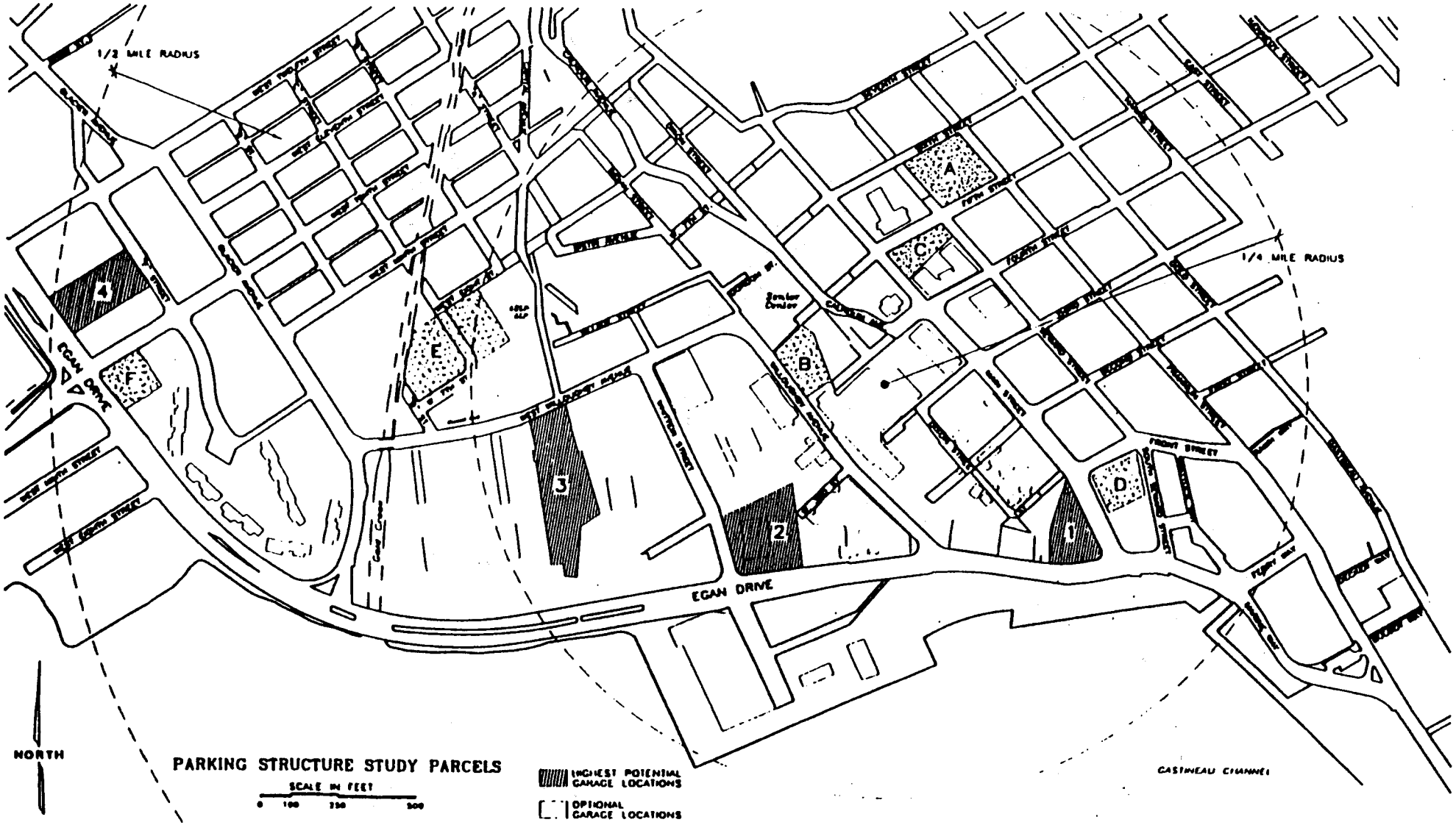
E. The **Federal Building Parking Lot**: This site was identified as a potential location for a satellite lot with shuttle service to the State Office Building. Before this can be further explored, the potential for a CBJ/Federal government joint use should be explored. Past efforts to secure joint parking agreements were not successful.

F. The surface lot currently serving the **Goldbelt Office Building**: This site provides 118 parking spaces available by permit to employees of the building. This site would require shuttle service to serve the study area. The shuttle costs and distance are similar to those estimated for development of the Bill Ray lot. However, the smaller template would affect the efficiency of the parking structure.

Others

In the course of this analysis, other options were mentioned as potential for adding to the parking supply. Some of those others that were mentioned are:

- Mineshafts: abandoned mine shafts were mentioned as potential for adding to the supply. This option was not explored further at this time because of safety concerns and distance from major pockets of demand for parking.
- Retrofitting vacant buildings: no vacant buildings within acceptable walking distance to the large pockets of employee demand were identified in the course of analysis. There may be other options outside the study area. Retrofitting buildings that were not originally designed for parking typically does not provide very efficient layout of parking and is typically not cost effective compared to the development of new parking structures.


1/2 MILE RADIUS
1/4 MILE RADIUS
EGAN DRIVE
GASTINEAU CHANNEL
NORTH
PARKING STRUCTURE STUDY PARCELS
SCALE IN FEET
0 100 250 500
HIGHEST POTENTIAL GARAGE LOCATIONS
OPTIONAL GARAGE LOCATIONS
A
B
C
D
E
F
1
2
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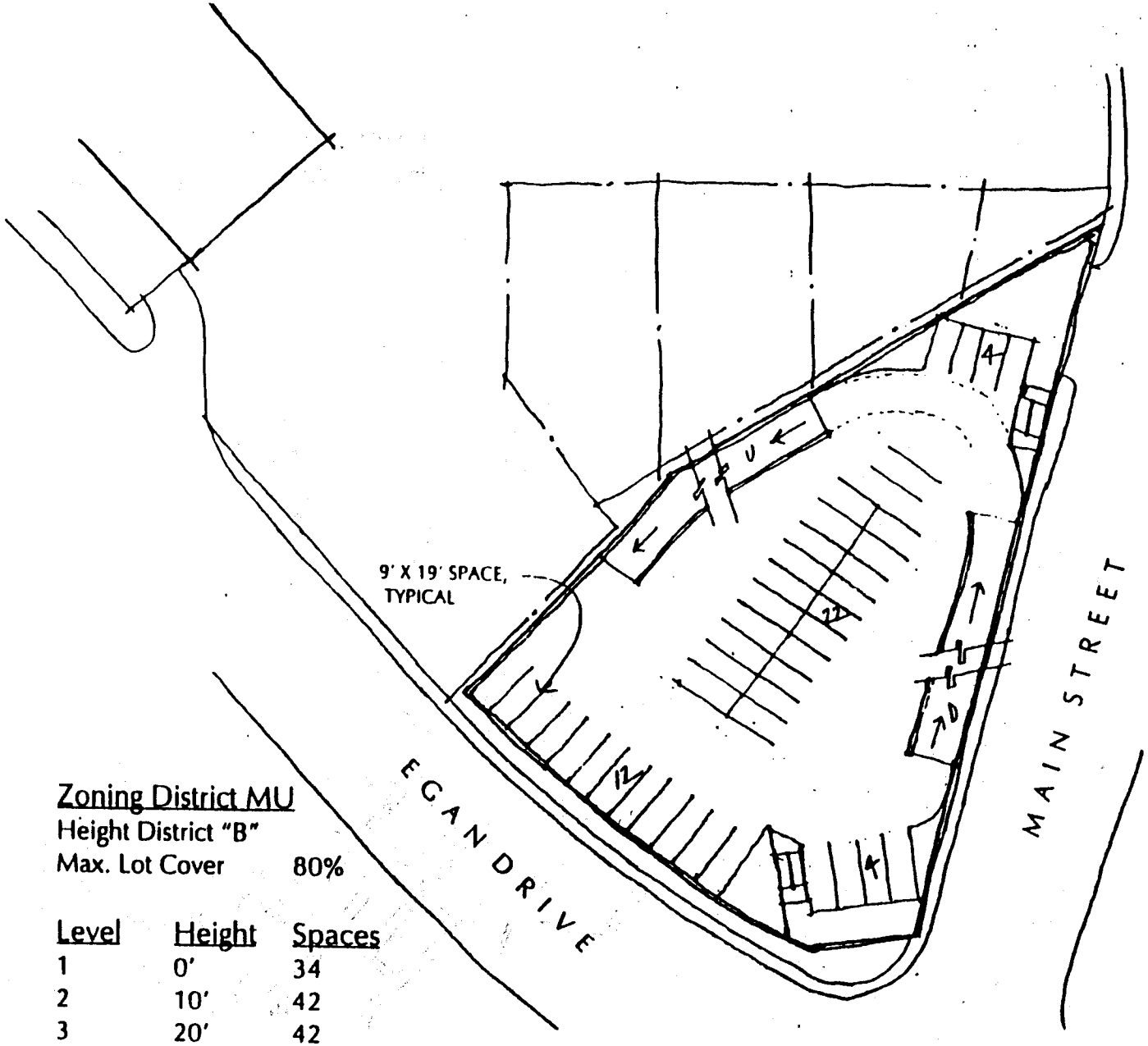
4



Zoning District MU
Height District "B"
Max. Lot Cover 80%

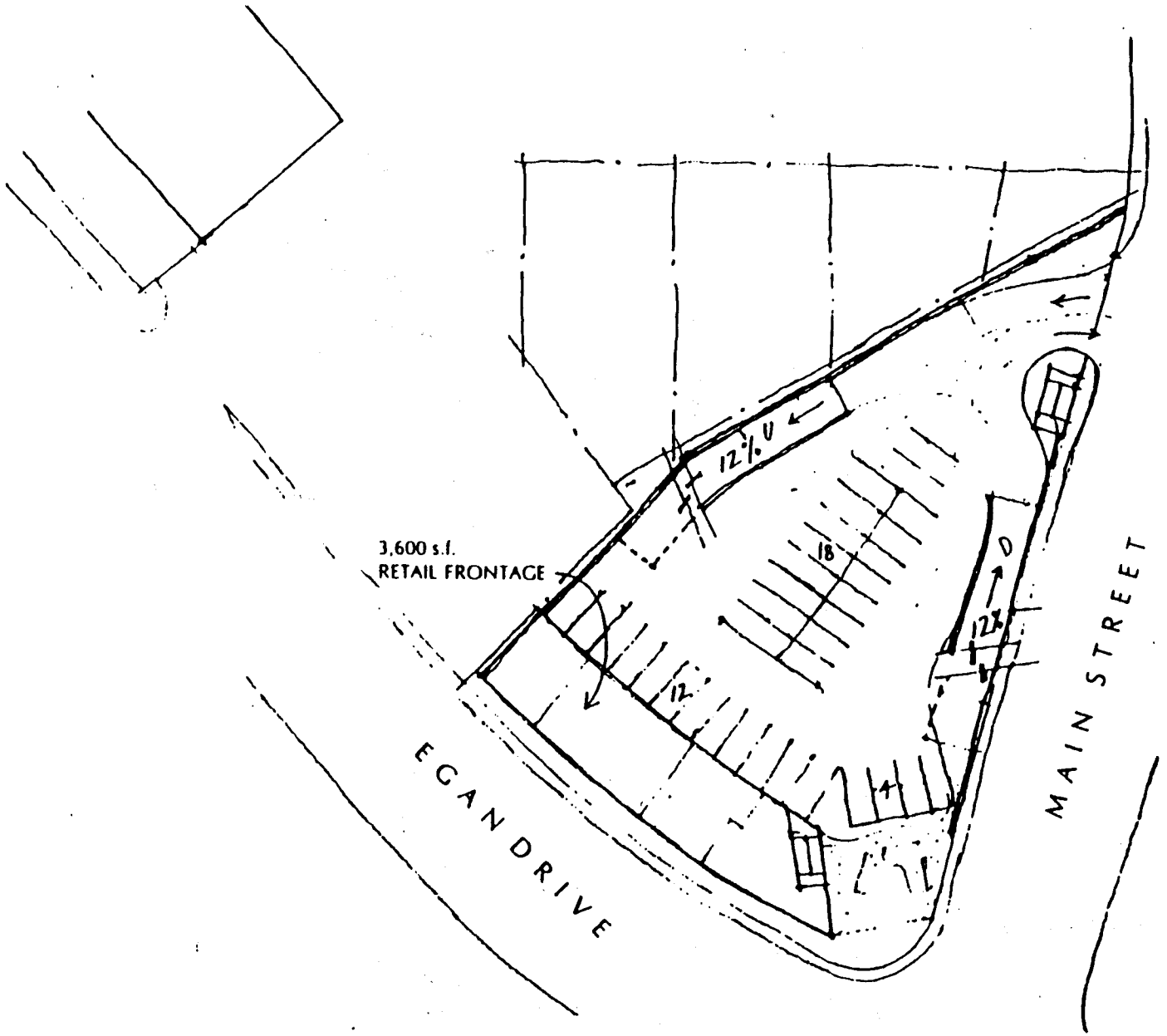
Level	Height	Spaces
1	0'	34
2	10'	42
3	20'	42
4	30'	42
5	40'	42
Total		204

(Loss of 55 surface spaces
Total Net Gain 149 Spaces)

SITE N° 1

LEVELS 2,3,4,5

0 50 100

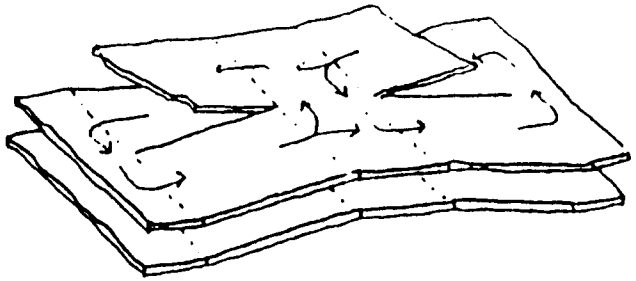


SITE N° 1

LEVEL 1

0 50 100

NORTH



CENTENNIAL HALL

LANDSCAPING

EGAN DRIVE

ZACH GORDON

9' X 19' SPACE, TYPICAL

PUBLIC SAFETY

RETAIL/COMMERCIAL FRONTAGE

COVERED WALKWAY

WHITTIER STREET

135'

207'

16

Zoning District MU2

Max. Height	35'
Max. Lot Cover	80%

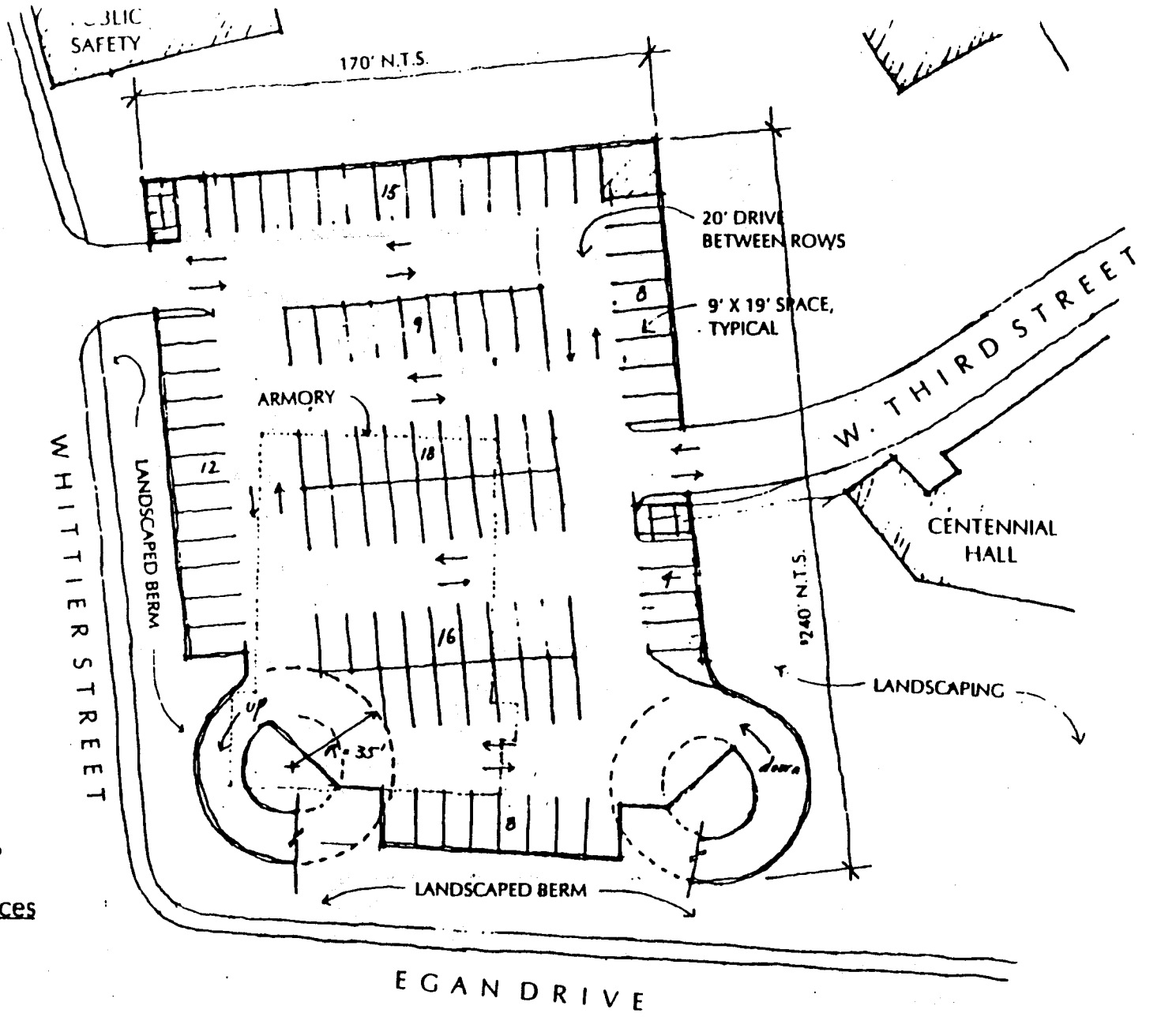
Level	Area	Sp.
1	27,950	80
2	27,950	74
3	27,950	74
4	27,950	74
Total	111,800	302

(Loss of 76 surface spaces
Total Net Gain 226 Spaces)

SITE N° 2 W/RETAIL

0 50 100

NORTH



Zoning District MU2

Max. Height	35'
Max. Lot Cover	80%

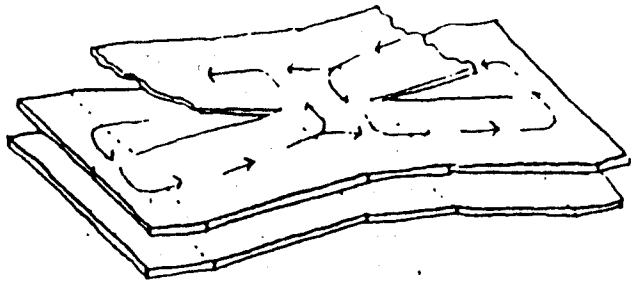
Level	Area	Spaces
1	40,800	98
2	40,800	102
3	40,800	102
4	40,800	102
Total	163,200	404

(Loss of 101 surface spaces
Total Net Gain 303 Spaces)

SITE N° 2

0 50 100

NORTH



STATE MUSEUM

FIDDLEHEAD

SALVATION ARMY

9' X 19' SPACE, TYPICAL

LIMIT OF 370 CAR GARAGE

PROPERTY LINE

135'

WALK TO EGAN DR.

POTENTIAL RETAIL OR TRANSIT CENTER

IOU

BY AVENUE

STREAM

315'

32

28

22

31

Zoning District MU2

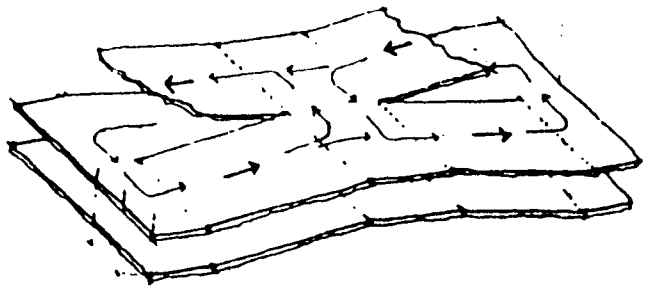
Max. Height	35'
Max. Lot Cover	80%

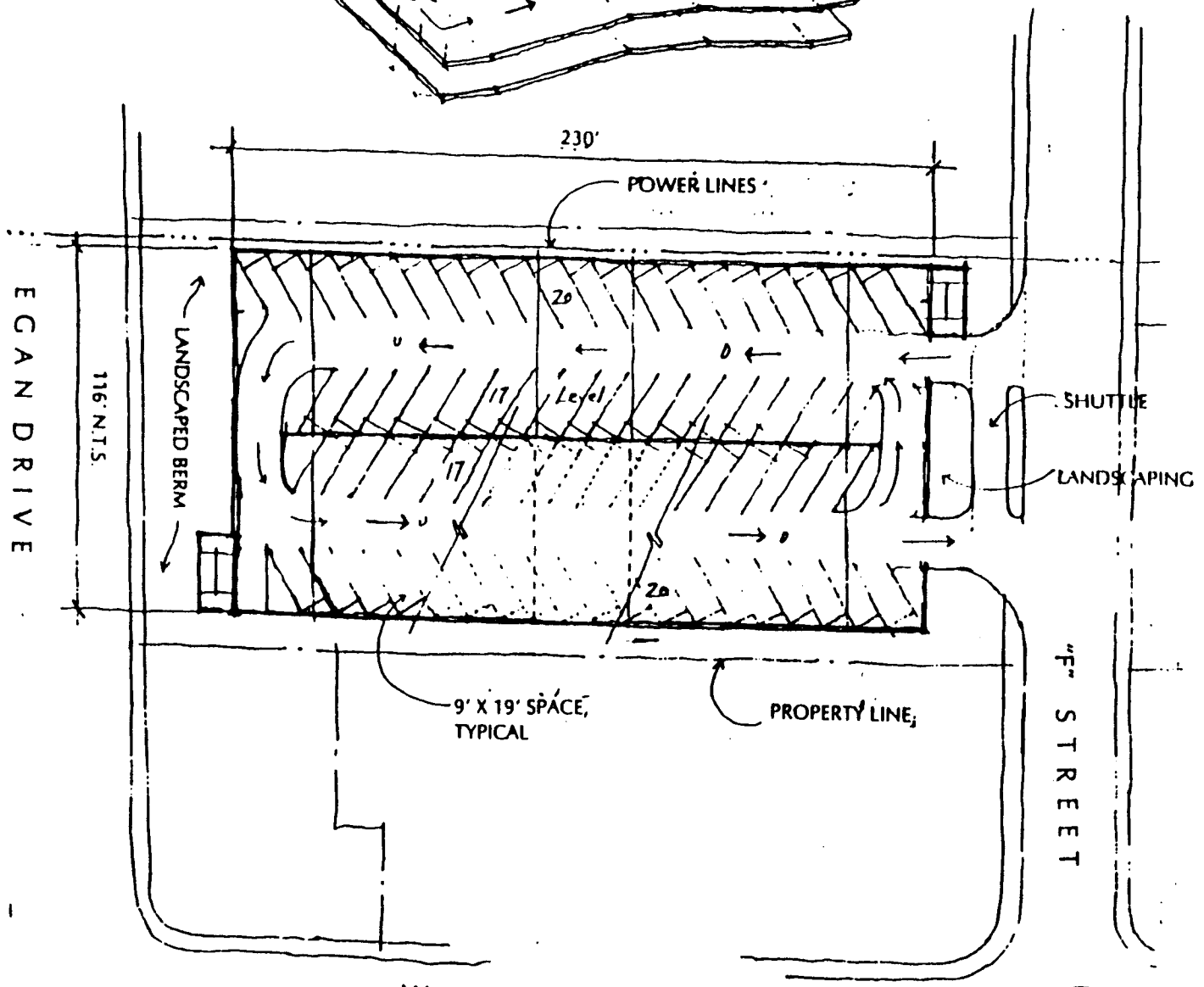
Level	Area	Spaces
1	42,525	120
2	42,525	116
3	42,525	116
4	42,525	116
Total	170,100	468

SITE N° 3

0 50 100

NORTH





Zoning District LC

Max. Height	35'
Max. Lot Cover	None

Level	Area	Spaces
1	26,900	74
2	26,900	70
3	26,900	70
4	26,900	70
Total	111,800	284

(Loss of 76 surface spaces
Total Net Gain 208 Spa

SITE N° 4

0 50 100

Attachment E

RANKING OF BUILD ALTERNATIVES

SITE		POTENTIAL # OF SPACES (NET GAIN)	WALKING DISTANCE TO STATE OFFICE BUILDING	DEVELOPMENT COSTS	ACCESS	FITS WITH NEIGHBORHOOD CHARACTER	OTHER
Weight			*1*	*1*	*1*	*1*	
TELEPHONE HILL	2	500	1	3	2	2	3	Short & Long Term Parking (+) Incorporates ground retail (+)
ARMORY SITE	1	303	2	4	1	1	2	Incorporates ground retail (+)
TANK FARM	4	302	3	6	5	4	6	Covered Walkway to Whittier (-)
BILL RAY	5	208	5	7	5	5	5	Shuttle Required (-)
STATE OFFICE GAR EXP	3	126	7	1	3	3	1	
CAPITOL BLDG GAR EXP	5	50	8	2	3	7	7	
CAPITAL PARK	8	300	4	5	4	8	8	Loss or Modification to Park (-)
GOLDBELT OFFICE BUILDING	5	160	5	7	5	6	4	Shuttle Required (-)
ranking type			*numerical*	*relative*	*estimated relative*	*subjective*	*subjective*	

RANKING OF BUILD ALTERNATIVES

SITE		POTENTIAL # OF SPACES (NET GAIN)	*No Variance* WALKING DISTANCE TO STATE OFFICE BUILDING	DEVELOPMENT COSTS	ACCESS	FITS WITH NEIGHBORHOOD CHARACTER	OTHER
Weight		*1*	*1*	*1*	*1*	*1*	
TELEPHONE HILL	2	500	1	3	2	2	3	Short & Long Term Parking (+) Incorporates ground retail (+)
ARMORY SITE	1	303	2	4	1	1	2	Incorporates ground retail (+)
TANK FARM	4	302	3	6	5	4	6	Covered Walkway to Whittier (-)
BILL RAY	5	208	5	7	5	5	5	Shuttle Required (-)
STATE OFFICE GAR EXP	3	126	7	1	3	3	1	
CAPITOL BLDG GAR EXP	5	50	8	2	3	7	7	
CAPITAL PARK	8	300	4	5	4	8	8	Loss or Modification to Park (-)
GOLDBELT OFFICE BUILDING	5	160	5	7	5	6	4	Shuttle Required (-)
ranking type			*numerical*	*relative*	*estimated relative*	*subjective*	*subjective*	

RANKING OF BUILD ALTERNATIVES

High Variance

SITE		POTENTIAL # OF SPACES (NET GAIN)	WALKING DISTANCE TO STATE OFFICE BUILDING	DEVELOPMENT COSTS	ACCESS	FITS WITH NEIGHBORHOOD CHARACTER	OTHER
Weight		*2*	*3*	*3*	*1*	*1*	
TELEPHONE HILL	1	500	1	3	1	2	3	Short & Long Term Parking (+) Incorporates ground retail (+)
ARMORY SITE	2	303	2	4	2	1	2	Incorporates ground retail (+)
TANK FARM	5	302	3	6	5	4	6	Covered Walkway to Whittier (-)
BILL RAY	7	208	5	7	6	5	5	Shuttle Required (-)
STATE OFFICE GAR EXP	3	126	7	1	3	3	1	
CAPITOL BLDG GAR EXP	4	50	8	2	3	7	7	
CAPITAL PARK	6	300	4	5	4	8	8	Loss or Modification to Park (-)
GOLDBELT OFFICE BUILDING	7	160	5	7	6	6	4	Shuttle Required (-)
ranking type			*numerical*	*relative*	*estimated relative*	*subjective*	*subjective*	

RANKING OF BUILD ALTERNATIVES

SITE		POTENTIAL # OF SPACES (NET GAIN)	***Low Variance*** WALKING DISTANCE TO STATE OFFICE BUILDING	DEVELOPMENT COSTS	ACCESS	FITS WITH NEIGHBORHOOD CHARACTER	OTHER
Weight			*2*	*2*	*1*	*1*	
TELEPHONE HILL	1	500	1	3	1	2	3	Short & Long Term Parking (+) Incorporates ground retail (+)
ARMORY SITE	2	303	2	4	2	1	2	Incorporates ground retail (+)
TANK FARM	4	302	3	6	5	4	6	Covered Walkway to Whittier (-)
BILL RAY	7	208	5	7	6	5	5	Shuttle Required (-)
STATE OFFICE GAR EXP	3	126	7	1	3	3	1	
CAPITOL BLDG GAR EXP	5	50	8	2	3	7	7	
CAPITAL PARK	6	300	4	5	4	8	8	Loss or Modification to Park (-)
GOLDBELT OFFICE BUILDING	7	160	5	7	6	6	4	Shuttle Required (-)
ranking type			*numerical*	*relative*	*estimated relative*	*subjective*	*subjective*	

RANKING OF BUILD ALTERNATIVES: SUMMARY

SITE *Weight*	*no variance*	*high variance*	*low variance*
TELEPHONE HILL	2	1	1
ARMORY SITE	1	2	2
TANK FARM	4	5	4
BILL RAY	5	7	7
STATE OFFICE GAR EXP	3	3	3
CAPITOL BLDG GAR EXP	5	4	5
CAPITAL PARK	8	6	6
GOLDBELT OFFICE BUILDING	5	7	7

Attachment F

DRAFT

A PARKING SUPPLY AND MANAGEMENT POLICY RESOLUTION FOR THE CITY AND BOROUGH OF JUNEAU

This document defines a supply and management policy regarding parking in the downtown area of the City and Borough of Juneau which includes the area shown in Figure 1.

Findings

The findings of a recently completed parking study include:

1. The current parking supply serving the downtown area shown in Figure 1 is approximately 3,100 parking stalls including approximately 2,460 off-street spaces and 630 on-street parking spaces.
2. Depending on time of year, the demand exceeds supply by as much as 1,250 to 1,500 spaces.
3. Approximately 75% of the peak parking demand is for long-term parking (i.e. employee focused land uses).
4. This shortfall in parking supply causes spillover to on-street parking and outside the study area.
5. The amount of demand exceeding supply is expected to increase as lots currently providing surface parking are redeveloped to higher uses.
6. Empirical evidence indicates that improved transit service and other programs designed to reduce dependence on single occupant vehicles could reduce long-term parking demand by up to 10%.
7. Short-term parking is often difficult to find in the study area due to the spillover of long-term parking and inconsistent enforcement of parking time limitations.

Objectives

The objectives of the parking policy include:

1. Enough long-term off-street parking should be provided to eliminate spillover of long-term demand to on-street parking spaces. (Note: long-term parking refers to parking periods of over two hours.)
2. Programs should be instituted to reduce parking demand by encouraging alternative commute modes such as transit and carpooling.
3. The availability of short-term parking should be improved in order to support the vitality and health of downtown businesses.

Resolutions

The City and Borough of Juneau (CBJ)shall pursue financing to secure the addition of a minimum of 500 new parking spaces and identify location(s) for the addition of up to an additional 500 parking spaces. The parking shall be located so that employees that the parking will serve will have to walk no farther than 800 feet from parking facility to place of employment and clients and shoppers needing short-term parking will have no farther than 400 feet from parking facility to primary destination.

The CBJ will work closely with the State to establish current parking demand so as to more closely pinpoint the extent of the peak parking deficit.

Financing options, which shall be considered, include:

- Local improvement districts or parking improvement districts

- Increasing fees for long-term parking in City managed lots and encouraging private parking operators to increase parking fees as well
- Use of long-term bonds
- Downtown Parking Fund
- General sales tax
- Local sales tax capital project funding
- State and Federal grants for development

The CBJ shall adopt a fee-in-lieu of parking program whereby developers in the downtown area may be permitted to provide a supply of on-site parking that is less than required by ordinance if they contribute to a CBJ fund for providing centralized parking.

The CBJ shall develop programs and support programs that will reduce the long-term parking demand by supporting the following elements:

- Enhancing the transit service serving the downtown area of the CBJ, including reducing headways and increasing peak hour capacity, a plan for which must be submitted to the Assembly by the Manager within three months of adoption of this policy.
- Identification of a parking entity (could be an Authority, Office or Individual) which will coordinate all parking related functions including capital improvements, enforcement, demand reduction, variances to development requirements and management of parking spaces (both on- and off-street) within three months of adoption of this policy and will begin work immediately with the State and other major employers in the study area to improve parking supply and reduce parking demand for employees.
- Providing a coordinator that will work with employers and individuals to promote alternative modes of transportation and administrate supporting programs within six months of adoption of this policy.
- Supporting programs that shall be instituted include: rideshare matching, preferential parking for carpools, provision of additional bicycle racks in key locations.

Other program elements that *may* be adopted and supported after additional consideration and identification of funding include:

- Add on-street parking where possible and practical
- Provision of a Guaranteed Ride Home program
- A car sharing program

Other program elements that *may* be adopted and supported after additional consideration but shall not be instituted until demand reduction programs are in place and/or off-street parking has been added to the supply in the study area include:

- The addition of parking meters for short-term parking enforcement and revenue generation
- Implementation of a Residential Parking Zone (RPZ)

Within one year of establishing improved transit service and other vehicle reduction programs, the reduction in peak parking demand will be measured and, depending on the magnitude of reduction in peak parking demand, additional parking supply (up to 500 more spaces) will be identified and/or additional demand reduction programs will be instituted.

The CBJ shall improve the consistency and coverage of enforcement of short-term parking time limitations.

The CBJ shall adopt the recommended standards for parking space dimensions that will accommodate the vehicle mix in Juneau. The existing short-term parking in the Library Garage, as well as other currently under-utilized short-term parking, will be modified to provide parking with the recommended standards wherever practical and possible.

DRAFT

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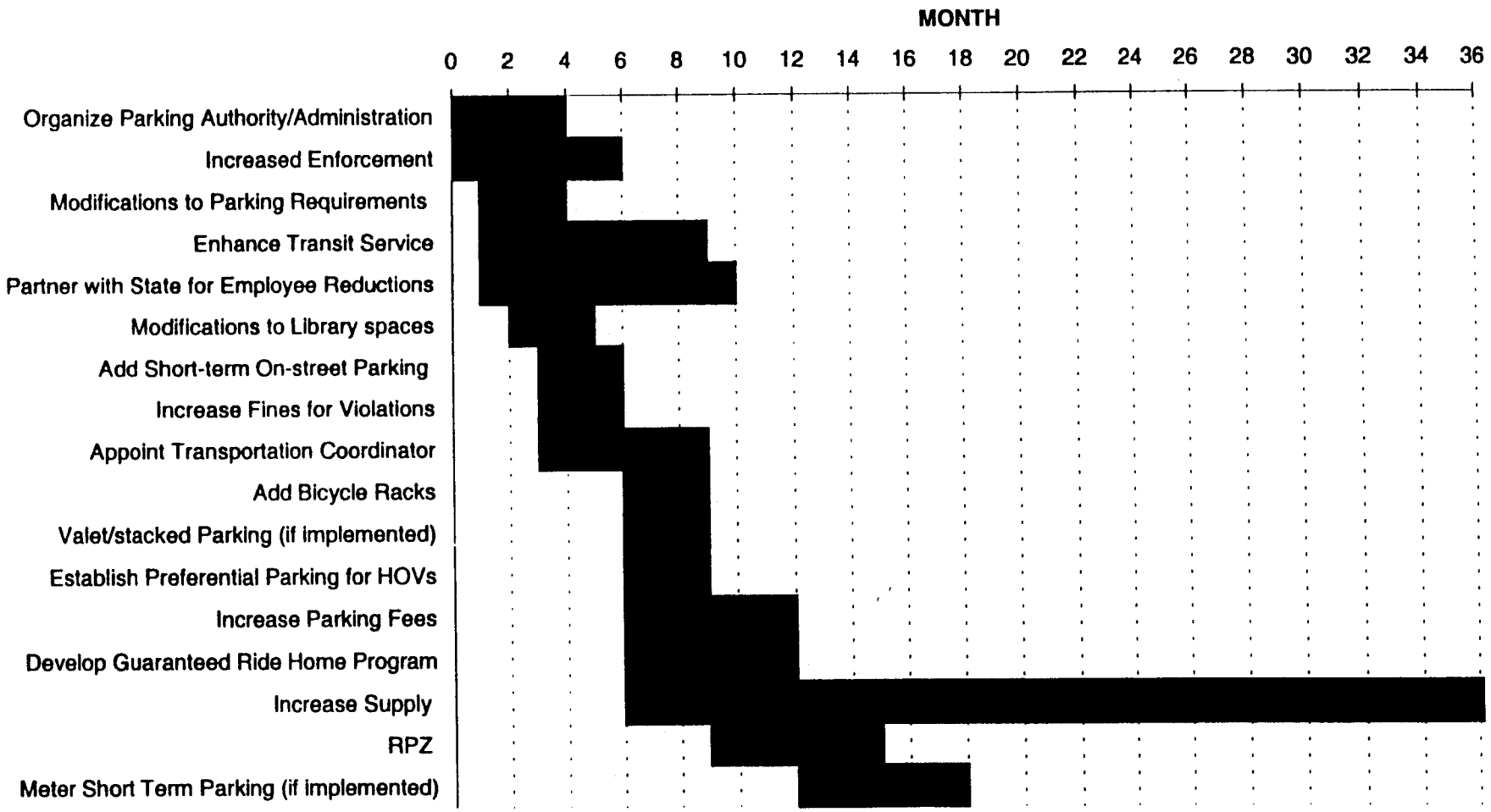
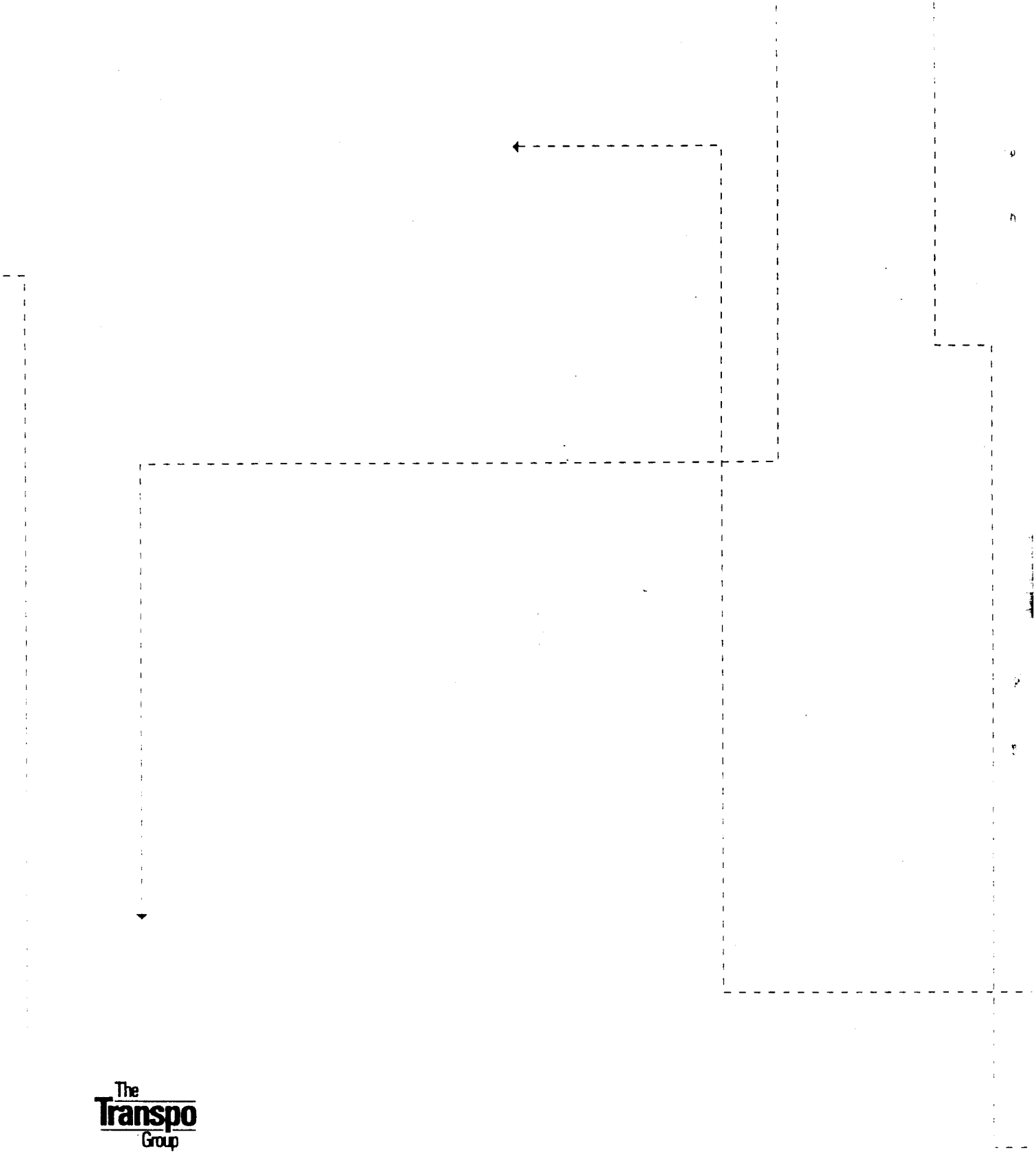
Attachment G

IMPLEMENTATION SCHEDULE
DRAFT





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