Capitola Village Parking Structure Planning Project for the City of Capitola



February 18, 2011

WATRY DESIGN, INC. Architects · Engineers · Parking Planners





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February 18, 2011 Prepared by

Watry Design, Inc. Architects, Structural Engineers, Parking Planners

with

FIELD PAOLI Architects



420 Capitola Ave, Capitola, CA 95010 Phone: 831.475-7300 • Fax: 831.464-8659 This report was prepared by Watry Design, Inc. for the City of Capitola under award No. 07-69-06484 from the Economic Development Agency, U.S. Department of Commerce. The statements, findings, conclusions, and recommendatinos are those of the author(s) and do not necessarily reflect the views of the Economic Development Agency or the U.S. Department of Commerce.



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December 16, 2010

Mr. Steve Jesberg Public Works Director 420 Capitola Avenue Capitola,CA 95010

RE: Capitola Village Parking Structure Planing Project

Dear Steve,

Watry Design is pleased to submit to you the Capitola Village Parking Structure Planning Study. This feasibility report includes results from data collection and site analysis in conjunction with the efforts of Field Paoli. Watry Design and Field Paoli have endeavored to assemble this information into a clear and concise format. We believe that it addresses the concerns and criteria identified in the original Request for Proposal, as well as those raised during the study process.

We thank you for this opportunity to work for you and hope to do so again in the near future.

Sincerely,

WATRY DESIGN, INC.

Hichelle Wendle

Michelle Wendler, Architect Principal

Chapter 1 - Introduction



Background

This Parking Feasibility Study has been prepared by Watry Design, Inc. and Field Paoli, with direction from City of Capitola staff for short- and long-term planning purposes. It is the intent of this project to develop preliminary project details for the future development of a multi-level parking structure, which can then be incorporated with a future City Hall site redevelopment. The project will be developed in phases; the first phase is the parking structure with a possible City Hall/commercial development as a second phase.

Study Chronology

Task 1: Stakeholder meetings/background research – Watry met with City Staff and members of the City's Traffic and Parking Commission subcommittee for the Parking Structure to discuss background information, project vision and related issues. Prior to this meeting Watry reviewed documents provided by the City.

Task 2: Site meetings and Design coordination – Watry reviewed the site and developed design parameters and standards to be used in the preliminary design effort. The design parameters included, entrance and exit limitations, topography, number of parking spaces provided, and pedestrian access routes to the Central Village.

Task 3: Development of options for Parking Structure – Watry developed a set of preliminary options for the parking structure for review by the City and Commission. These options presented five alternative plan layout options. Preliminary cost estimates for each option were provided.

Task 4: Site Master Plan – Watry, in conjunction with Field Paoli, developed site plans for the entire site, incorporating parking structure and City Hall, developing spaces for future uses including civic functions and potential commercial space.

Task 5: Floor Plans for two selected parking structures. - Watry prepared plan sheets for two selected parking structure options. These plans included floor plans, basic structural elements, entrance and exit paths of travel for both vehicles and pedestrians and other elements necessary to visually depict the structure on site. Parking structures are placed on site background taken from aerial photography.

Task 6: 3-D renderings and visualization for site master plan - Based on direction from City staff Field Paoli prepared plan sheets for two final site master plans. An architectural rendering was prepared to represent architectural character of parking structure within the site context.

Task 7: Develop Parking Structure costs estimates – Rough cost estimates were developed for the two selected parking structure options. Include are cost estimates for planning, permitting, engineering, construction, and construction management costs, i.e. soft costs.

Task 8: Develop Site Master Plan costs – Watry and Field Paoli developed a budgetary cost estimate for the selected master plan. The estimate includes preliminary site development cost based on square footage of the buildings and site improvements.

Task 9: Project Report - The final project report describes the process of developing the selected options, specific details, costs estimates and reduced plan sheets.

Basis of Analysis

The study was established with the parameters that the structure should achieve a minimum of 325 new parking spaces to a maximum of 800 new parking spaces for a estimated cost of \$10,000,000. Below is a brief summary of the parking demand requirements derived from previous studies authorized by the City of Capitola. As the Pacific Cove Lot is the only parcel left large enough to develop structured parking, it would be ideal to maximize the number of parking stalls provided while remaining within the budget the City can finance.

The following chart was excerpted from the Report on Parking Expansion Alternatives for the Traffic and Parking Commission dated April 14, 2010.

Demand	Low	High
Current Shortfall	176	390
Village Hotel	60	120
Replace Theater Spaces	39	39
Esplanade Pedestrian Walk	0	100
Valet Parking Program	0	50
Other New Development	50	100
Total Long Term Parking Needs	325	799

Chapter 2 - Parking Capacity Analysis



Parking Structure Design Analysis

Watry Design was commissioned by the City of Capitola to evaluate the feasibility of accommodating structured parking within the Pacific Cove Parking Lot. The analysis was provided in two steps, an initial analysis of 5 options followed by the development of 2 final options derived from the initial analysis.

Parking structures are made up of parking bays that include a drive aisle with parking stalls on either side. Efficient parking layouts have parking on both sides of a drive aisle. This parking can either be angled parking or 90 degree parking. 90 degree parking is more efficient than angled parking, but requires a wider width than angled parking. Two bay solutions fit the parking structure within the existing parking lot area. Initial analysis determined that the width of the site in the north south direction was a critical factor in the layout of the structure. Both 2 bay and 3 bay parking solutions were compared to the width of the site. 2 Bay structures only yield the minimum parking stalls and require 4 levels of parking to achieve that goal. Three bay parking solutions exceed the footprint of the existing parking lot and extend past the fence line to the north. Using 60 degree parking with 3 bays, you can meet the minimum parking demand in three parking levels. Since the height above grade is a factor relative to the impact on the surrounding community and the distance below grade is a factor relative to increasing cost, it was determined that the parking structure should not be higher than the adjacent railroad tracks and ideally would not be below grade far enough to require mechanical ventilation or sprinklers. These conditions guided the development of the final two options.

In addition to the analysis above, the following factors played into the decision for the final options.

Angled versus. 90 degree parking

Both 90 degree parking and angled parking were reviewed in the initial options. For the 2 bay solutions, 90 degree parking was used throughout. For the three bay solutions, angled parking was used, except on the ramp. 90 degree stalls were utilized where two-way circulation is required. 90 degree parking is more efficient than angled parking, which means that it will cost less per parking stall to build. However, due to the narrow site, it was determined that three bays of 90 degree parking was not feasible. In the final 2 options, 3 bay solutions of both 45 degree and 60 degree angles were evaluated. These options were evaluated to determine the impact on the northern area beyond the parking lot and took into consideration the removal of existing trees. Option 2 is 45 degree parking and provides a narrower building, but less parking stalls on each floor. Option 1 uses a 60 degree solution, is more efficient, but extends 9'-6" further to the north. (14'-6" past fence versus 5'-0" past fence).

Parking Stall Size

The initial options were reviewed with both 9'-0" wide and 8'-6" parking spaces. The standard stall sizes required by the City of Capitola zoning regulations are 9'-0" wide by 20'-0" long, however the existing parking stalls in the Pacific Cove Lot are much smaller than that. The size of a parking space is usually relative to the type of user. High turnover spaces with less familiar users generally require wider parking spaces. Lower turnover spaces can have narrower parking spaces. Because the parking in this structure is longer term and lower turnover, we are recommending that 8'-6" wide by 18'-0".

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long stalls be used. In addition, the width of the stall has an affect on the efficiency which has a direct relationship to cost. Narrower stalls allow more stalls in the same square footage. It should also be noted that this is the most common stall size used in the Bay Area. This stall size is assumed for all the final options.

Ramp Type

Both express ramps and parked on ramps were investigated in the initial options. Express ramps are ramps that average up to 15% slope and connect the floors without parking. Parked on ramps are parking bays that are sloped to connect the floors. Express ramps provide a higher level of service because cars can circulate from floor-to-floor without interacting with cars pulling in and out of parking spaces. Although they allow the parking to be on flat floors, they are less efficient and therefore contribute to a higher cost per parking stall. Parked on ramps are generally more advantageous in low turnover parking, are more efficient and therefore contribute to a lower cost per stall. However, parked on ramps require one third of the stalls to be parked on sloping floors and since the circulation between floors must also interact with cars pulling in and out of parking spaces, it provides a lower level of service. Due to the site configuration, it was possible to use an express ramp with the two bay solutions and it was investigated as a possible option. The 3 bay solutions were studied with parked on ramps. The conclusion was to use parked on ramps, based on the type of user, a low turnover rate and the importance of maximizing new parking stalls within the site parameters and budget. The final options utilize a parked on ramp solution.

Number of Levels and Relationship to Existing Grade

Initial options were reviewed having three and four parking levels at a grade elevation of 33.5 and at 22. At elevation 33.5, the lowest level of parking did not require mechanical ventilation or sprinklers. At elevation 22, the lowest level requires both. After review of 3-D massing models to understand the proportions of the proposed options and their impact on the surrounding area, it was determined that the top deck of the parking structure should not be higher than the railroad tracks on the south side. The final options include a 3 and 4 level solution. Both options set the top deck at the tracks and therefore the lowest level of the 4 level option is completely below grade and would require mechanical ventilation and sprinklers.

The following programmatic items were included in all options.

Stairs and elevator cores were included at the southwest and southeast corners of the site providing connections to Monterey and Capitola Ave as well as to City Hall. The southwest core utilizes a new pedestrian linkage proposed to connect to Capitola Ave that will provide a more direct access to the Village. The vehicular access from Capitola Ave was widened to provide 2-way circulation at this entrance.

All options evaluated provide an area for valet parking on the top deck to provide additional new parking stalls into the Village area. The valet area would be utilized by hotels in the village and would be separated from the general use parking.



Chapter 2 - Parking Capacity Analysis

Parking Structure Descriptions for Final Options 1 and 2

The final options summary is provided below: Note both options retain 23 on grade stalls which are included in the stall count

	Option 1	Option 2
SQUARE FOOTAGE	168,300	213,400
STALL ANGLE	60 degrees	45 degrees
NUMBER OF LEVELS	3 levels	4 levels
ENCROACHMENT PAST FENCE	14'-6"	5'-0"
EFFICIENCY	317 sf/stall	331 sf/stall
NUMBER OF TOTAL STALLS	554 stalls	664 stalls
NUMBER OF NET NEW STALLS	320 stalls	430 stalls
TOTAL COST	\$12,777,863	\$18,813,270
COST PER STALL	\$23,065	\$28,333
COST PER NET NEW STALL	\$39,931	\$43,752
ADDED STALLS WITH VALET	26	24

Conclusions

After the evaluation of the final options it was determined that Option 1 was the preferred alternative for the following reasons.

1. It is within the limits of the possible funding scenarios of the City.

- 2. It meets the minimum parking demand.
- 3. It fits within the site parameters; below the railroad tracks while not requiring a below grade level.

While Option 2 provides more parking spaces, it's cost per new parking space is higher due to the higher sf/stall and the level below grade. While it is possible to add a level of parking to Option 1 and add approximately 190 parking spaces. The additional level would be below grade and would make the cost per new stall higher. This might be outside the funding limitations of the City.

The analysis provided the following insights.

- 1. It is not possible to meet the maximum parking demand within the funding limitations.
- 2. 4 levels of parking, if provided above grade to minimize costs, would be too tall.
- 3. Providing the 4th level of parking below grade may be cost prohibitive.
- 4. It is necessary to go beyond the limits of the existing surface parking lot to provide a more efficient solution.
- 5. The distance beyond the parking lot to the north can still be mitigated by landscaping.
- 6. It is possible to incorporate valet parking to increase the parking supply in the structure.
- 7. The pedestrian connection to Capitola Avenue is critical to the success of the project.
- 8. Widening the vehicular access to Capitola Avenue is critical to the success of the project.
- 9. The structure can be designed for both the current and future City Hall configurations.
- 10. Keeping the structure below the level of the railroad tracks is an important site consideration.
- 11. The architectural facade treatment and landscaping will be important to integrate the structure into the existing context and address community compatibility.



NET NEW STALLS: 554 - 234 (E) = 320

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Chapter 2 - Parking Capacity Analysis

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Second Level Parking Plan

Not to Scale

50 -

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Not to Scale







THIRD LEVEL PARKING PLAN

Not to Scale



(City Hall)

LONGITUDINAL SECTION - Option 1

(Exit to Monterey Ave)



TRANSVERSE SECTION - Option 1







NET NEW STALLS: 664 - 234 (E) = 430

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Chapter 2 - Parking Capacity Analysis



PROJECT NORTH

GROUND LEVEL PARKING PLAN

Not to Scale







PROJECT NORTH

SECOND LEVEL PARKING PLAN

Not to Scale



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Chapter 2 - Parking Capacity Analysis





THIRD LEVEL PARKING PLAN

Not to Scale



LONGITUDINAL SECTION - Option 2



Chapter 3 - Master Plans and Visualization



Site Master Plans

The Site Master Plans illustrate how the parking structure can fit into the larger context of Capitola. The site is well suited as a location for parking to serve the downtown and beach areas and integrates well with the existing City offices. This development can be an opportunity to create a "gateway" element that announces the arrival at downtown Capitola. In addition to providing needed parking, it can improve the experience of visiting the downtown for both residents and out-of-town guests.

Adjacent Residential Areas

The parking structure is well buffered from adjacent residential properties. The raised railroad bed to the south forms a physical barrier separating the garage structure and the residential buildings to the south; the parking structure will be lower than the railroad bed. Its width allows for dense planting that will remain in place. The floor elevation of the structure is significantly higher than the mobile home community to the north and the hillside between them allows for planting of vegetation to screen views of the garage.

City Office Site

The parking structure's relationship to the City Office site was evaluated for access and for potential reuse. The viability of future commercial development was taken into consideration. Connections to the existing structure were planned to ensure convenient access and to provide ADA compliant routes for the disabled. Future modernization or reconstruction of the City Offices was considered, allowing for better vehicular circulation to the garage and orientation to make the City Offices a civic "gateway" element.

Vehicular Access

Existing street entrances will be maintained and enhanced for safety and ability to carry the necessary traffic. The west entrance road will be regraded to a flatter slope and its intersection with the driveway serving the mobile home community will be improved. Visibility and identification of the parking structure entries will be designed to improve wayfinding.

Pedestrian Access

Pedestrian routes connecting the parking with the downtown areas will be separated from the vehicular roadways to increase safety. The design will create a welcoming experience that creates a much stronger visual connection to downtown. A "boardwalk" path will lead from the elevator core to Capitola Avenue, passing under the railroad trellis to connect with the existing downtown sidewalk. This path will be constructed to provide ADA compliant access to the disabled and will created a welllandscaped amenity to the community.

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Visualization

The artist's sketch (page 23) illustrates the design characteristics of the new parking structure as it relates to the surrounding community. Viewed from above, the structure is well-buffered by foliage on all sides. As many existing trees as possible will be preserved. At street level, the parking structure is visible only at the three entrance points where design features will identify it and relate it to the architectural character of Capitola.

The existing City Offices are shown in the foreground. A pedestrian connection to the upper level will be maintained.

The driveway to the north of the City Offices will be widened to provide safer access and increase the view to the garage entrance, which will make it easy to identify.

The proposed boardwalk connection will traverse a landscaped hillside above the Museum and will pass beneath the railroad trestle to improve the experience of walking from one's car to downtown.











Chapter 3 - Master Plans and Visualization



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Chapter 4 - Cost Analysis

Estimating Methodology

Please note that Watry Design developed it's database of unit costs from it's extensive experience working on similar parking structures. Recognizing that Watry Design has no control over the cost of materials, equipment, labor, or an individual contractor's method of determining prices, we cannot offer guarantees that the actual construction costs will not vary from this statement of opinion. These estimates are in 2010 dollars and include a 10% design contingency and 8% escalation costs. This would allow for approximately three years to start of construction. If construction on a structure is started later, costs would rise at approximately 4-6% per year. Depending on the timing of the construction bid, these unit costs may fluctuate. Construction costs assume a shallow foundation.

Soft costs may vary depending on the methodology of delivering the project. Soft costs generally would include full architectural and engineering services, soils report, site survey, ALTA report, title reports, permits and inspections, testing, traffic studies, construction management, and project management. We have included a 20% factor to cover soft costs(*). No land or financing costs have been included.

The costs assume mechanical ventilation and sprinklers only for levels completely below grade. The costs assume an architectural finish level above a standard parking structure in order to integrate the structure into the community.

As part of cost analysis, two program items that affect the cost were evaluated separately. We indicated the added cost for these program items on each option.

The first is the premium for upgrading the top deck of the parking structure to accommodate increased loading so that the possibility of using the top deck for something other than parking may be achieved. The typical parking structure is designed for 40 lbs/sf. Premium loading would increase this to 100 lbs/sf and allow for alternative uses, such as public gatherings.

The second is the premium for increasing the seismic importance factor. Currently, City police vehicles are parked on the surface lot next to City Hall. In some future scenarios, this parking may go away and it would be assumed that these vehicles may park in the parking structure. If these vehicles are first responding vehicles it may be considered important that the structure be designed above the base building code. The base building code only requires buildings to be designed to allow people to get out of the building prior to a possible collapse during a seismic event. While there is no such thing as an earthquake proof building, increasing the structural capacity of the seismic system provides a higher level of building protection. This is the same level of protection that Emergency Response Centers would be designed to. While the code does not mandate increasing the importance factor for first responding vehicles, we have provided this premium cost so that the City can make an informed decision on how to proceed.

We are also providing general order of magnitude costs for implementing the master plan scenario for a new City Hall.

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Capitola Village Parking Structure Cost Estimates

Option 1		Option 2	
Construction Costs Soft Costs* Project Costs	\$10,648,219 \$2,129,644 \$12,777,863	Construction Costs Soft Costs* Project Costs	\$15,677,725 \$3,135,545 \$18,813,270
Optional Program Items:		Optional Program Items:	
Premium Loading		Premium Loading	
Construction	\$823,843	Construction	\$1,213,883
Soft Costs*	\$988,611	Soft Costs*	\$1,456,660
Emergency Response Seismic Rating		Emergency Response Seismic Rating	
Construction	\$833,443	Construction	\$1,229,457
Soft Costs*	\$1,000,131	Soft Costs*	\$1,475,349

Rebuild City Hall at Existing Site

Demo Existing City Hall	\$106,000
New City Hall at same site	\$4,712,500
Site Development around City Hall	\$75,000
Temporary City Hall for 2 years	\$420,000
Escalation	\$410,680
Soft Costs*	\$1,108,836
Project Cost	\$6,653,016

For more detailed break down of these estimates please see the appendix.



APPENDIX

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Detailed Opinions of Probable Construction Cost Options 1 and 2

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Initial Options A-E



Parking Structure for City of Capitola Capitola, CA

STALL/ COST SUMMARY 9'-0" x 18'-0" STALLS

	TOTAL STALLS	TOTAL SQ. FT.	SQ. FT./STALL	NET NEW STALLS	TOTAL STALLS W/ VALET	NET NEW STALLS W/ VALET	Construction COST	COST/STALL no valet	COST/NET NEW STALL no valet	COST/SQ. FT
OPTION A	477	171,200	359	268	501	292	\$10,500,000	\$22,013	\$39,179	\$61
OPTION B	469	171,200	365	260	501	292	\$12,800,000	\$27,292	\$49,231	\$75
OPTION C	501	166,600	333	292	518	309	\$10,000,000	\$19,960	\$34,247	\$60
OPTION D	501	166,600	333	292	517	308	\$12,300,000	\$24,551	\$42,123	\$74

STALL/ COST SUMMARY 8'-6" x 18'-0" STALLS

	TOTAL STALLS	TOTAL SQ. FT.	SQ. FT./STALL	NET NEW STALLS	TOTAL STALLS W/ VALET	NET NEW STALLS W/ VALET	Construction COST	COST/STALL no valet	COST/NET NEW STALL no valet	COST/SQ. FT
OPTION A	508	171,200	337	299	551	342	\$10,500,000	\$20,669	\$35,117	\$61
OPTION B	508	171,200	337	299	551	342	\$12,800,000	\$25,197	\$42,809	\$75
OPTION C	550	166,600	303	341	565	356	\$10,000,000	\$18,182	\$29,326	\$60
OPTION D	550	166,600	303	341	565	356	\$12,300,000	\$22,364	\$36,070	\$74
OPTION E	530	173,100	327	321	547	338	\$10,200,000	\$19,245	\$31,776	\$59



NOTE: COSTS DO NOT INCLUDE PREMIUM FOR ESSENTIAL SERVICES PARKING





















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