EXHIBIT 15-C

ITEM: VII ACTION ITEMS

D. CONSIDER REQUEST FOR CONSIDERATION OF SPECIAL CIRCUMSTANCES (RULE 24-G) – SUNRISE ASSISTED LIVING

Meeting Date: April 26, 2001
Staff Contact: Stephanie Pintar

Budgeted: N/A
Program/Line Item No.: N/A
Cost Estimate: N/A

General Counsel Approval: N/A
Committee Recommendation: N/A
CEQA Compliance: N/A

SUMMARY: Sunrise Development has applied with the County of Monterey to construct a 64 unit (78 bed) assisted living facility in Carmel Valley. Currently, the applicant's development application is on hold pending Water District concurrence that Sunrise of Carmel Valley can operate within the 4.8 acre-feet annual water allotment available for the project from Monterey County. In this regard, the applicant has proposed to incorporate several extraordinary water conserving features into the facility to allow it to function with the water available. The applicant has supplied documentation to support water use of 4.44 acre-feet annually, and staff concurs with the applicant's projection if special circumstances can be applied.

Sunrise Development has proposed the following conservation measures to reduce water use on the site:

- 2-liter ultra-low flush (ULF) toilets
- 0.5 gallon-per-minute ultra-low flow (ULF) commercial style faucets
- 1.5 gallons-per-minute ULF shower heads
- Commercial recycling laundry system that uses fresh water for the rinse cycle only
- Front-loading ULF washing machines for residential use (18 gallons per cycle)
- Water saving Hobart commercial dishwasher
- Drought resistant landscaping, minimal turf and fruit trees or vineyards on drip irrigation

Staff is requesting the Board make findings of "special circumstances" due to the substantial uncertainty associated with water use for a residential care facility that incorporates state-of-the-art water saving appliances into the project. The District's current factor for assisted living facilities is outdated and does not consider the installation of low water using appliances and landscaping. The applicant's application packet is attached as **Exhibit D-1**. Additional project information is available at the District office.

RECOMMENDATIONS: Staff recommends that the Board make a finding of special circumstances for the proposed Sunrise of Carmel Valley. At such time, as the final construction drawings and approvals have been received, staff should be directed to review the plans to verify that the project is identical to the one reviewed for this application and to issue a water permit for a 78-bed assisted living facility with a water demand of 4.44 acre-feet annually. Staff should also

be directed to adjust the water permit based on the actual water use after a period of five years. The additional increment of water available in the county's allocation for this project should be set aside by the county for the project in the event that water use exceeds 4.44 acre-feet annually after five years. Any additional increment of water use above 4.8 acre-feet after the five year monitoring period will be debited from Monterey County's water allocation. Similarly, if water use is lower than staff's estimate, a refund will be issued for the unused increment of water.

BACKGROUND: Water permits for nonresidential water uses are based on a theoretical capacity for water use. The water use capacity is usually determined by using regional average water use records from other similar or identical uses that are broken down into water use per square-foot or other measurements. In situations where the proposed project is unique, or where there is limited information about the water used by the proposed project, staff may request information from the project proponent, including water use records for other businesses of the same type from other areas and/or professional water use analyses. This information is then verified by staff to determine the appropriate water demand and the appropriate connection charge for a project. Staff may also conduct its own research to determine the appropriate water use factor.

In some cases, the project is so unique that staff requests a finding of Special Circumstances under District Rule 24-G. District Rule 24-G allows the District to adjust connection charges (and change water used from a jurisdiction's allocation) if the Board of Directors finds that (a) special circumstances exist, and (b) that substantial uncertainty exists regarding the projected water use proposed by the permit applicant. Special circumstances exist if a project does not fall within a commercial water use category listed on Table II of Rule 24, and if there is no accurate and reliable method to project water use for that site. Substantial uncertainty refers to the inability of District staff to establish a precise water use factor for that particular type of water use.

DISCUSSION: Similar to the Pebble Beach Company proposal and the Monterey Hotel proposal, the applicant for Sunrise of Carmel Valley is unable to proceed toward project approval with the jurisdiction until the project's estimated water demand has been established.

Table II, Commercial Water Use Factors, in District Rule 24 does not list a water use factor for "assisted living" uses. Staff prepared an evaluation of local residential care facilities in the early 1990's, but questions have been raised by the public about the samples surveyed, and staff believes the information needs updating. Of the sample facilities used in the commercial survey of residential care facilities, there was disparity in the types of water fixtures and landscaping. Staff does not believe there are sufficient local facilities with low-flow fixtures to establish a reliable water use factor for residential care facilities at this time.

Sunrise Development has submitted two water usage studies pertaining to their proposed Sunrise of Carmel Valley assisted living facility. One study was conducted by Lee & Associates of Monterey and another was an internal study. The Lee & Associates study looked at water use from the "ground up" and from the"top down." The "top down" analysis concluded that the project would use 4.44 acre-feet annually, and the "ground up" analysis concluded the same thing. The internal study suggested water use would be slightly lower, at 4.25 acre-feet annually.

Staff strongly feels that the incorporation of state-of-the-art water saving fixtures and appliances should be encouraged by the District. The greatest incentive to install these fixtures and appliances is by granting adjustments to the water use factor customary used by the District to determine water use. Until enough new buildings are constructed with these fixtures and appliances that their impact on water use can be absolutely known, the application of Special Circumstances under District Rule 24-G is an appropriate way to both achieve the goal of installing state-of-the-art equipment and to ensure that there is accountability for water use.

IMPACT ON STAFF/RESOURCES: Staff will need to review consumption history after five years and may need to adjust the water permit to reflect a more accurate demand estimate.

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EXHIBIT D-1

SUNRISE
DEVELOPMENT, INC.

249 View Street
Mountain View, CA 94041
650-938-2249 Fax: 650-961-6452

April 15, 2001

Ms. Stephanie Pintar
Water Demand Manager
Monterey Peninsula
Water Management District
P. O. Box 85
Monterey, CA 93942-0085

Re: Water Usage – Sunrise of Carmel Valley

Dear Stephanie:

Pursuant to our letter to you dated April 4, 2001 and the submission of the study done by Lee & Associates dated March 20, 2001 and the study done by Sunrise, we are hereby requesting that the Water Management District, based upon these studies, concurs that the Sunrise project will operate within the 4.8 acre-feet allotted to the property.

As you can see in the study that Lee & Associates conducted using both a top-down and a bottom-up approach, both approaches yielded a usage for our project of 4.44 acre-feet per year. The Sunrise study from a bottom-up approach arrived at 4.25 acre-feet per year. As I mentioned in my previous letter to you, the Lee study used a visitor count of 78 per week. Sunrise used 30 visitors per week which is a more accurate number based upon our experience with over 165 homes. Our landscaping will consist of drought resistant stock with the use of fruit trees and/or grape vines and a liberal use of architecturally interesting hardscape elements all designed to allow for a minimum of exterior water usage. The Lee study and our study include both interior and exterior water usage.

We will provide in our management procedures for Sunrise of Carmel Valley water conservation policies and practices. Since part of our proposed mitigations include low flow faucets and showerheads, we will make sure that no one tampers with any of these devices. Our typical residents are in their mid-eighties and are not prone to do any tampering. Also, we typically assist residents in showers and any attempt to compromise any water saving device would be next to impossible without our staff knowing about it. We are more than willing to submit to a program of water monitoring during the first several years of our operation. We understand the need for monitoring and we look forward to working out a program that will allow for such.

We want to thank you for all of your help and cooperation in this matter. We look forward to the meeting of the Board on April 26th.

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Sincerely,

SUNRISE DEVELOPMENT, INC.

Daniel F. Zemanek
Development Specialist

SUNRISE
DEVELOPMENT, INC.

249 View Street
Mountain View, CA 94041
650-938-2249 Fax: 650-961-6452

April 4, 2001

Ms. Stephanie Pintar
Water Demand Manager
Monterey Peninsula
Water Management District
P. O. Box 85
Monterey, CA 93942-0085

Re: Water Usage – Sunrise of Carmel Valley

Dear Stephanie:

We are pleased to present to you water usage studies pertaining to our proposed Sunrise of Carmel Valley assisted living facility. Per your suggestion during our last meeting we contacted Paul Davis whom we subsequently engaged to coordinate the services of Lee & Associates of Monterey to do a water survey for our proposed facility which you will find enclosed. We are also submitting a study that Sunrise did internally. As you will see, the Lee study was done from both a "top-down" and a "bottom-up" approach. The Sunrise study was done from the "bottom-up". The bottom line is that Sunrise of Carmel Valley can operate well within the 4.8 acre-feet of water that has been allocated to the property. The Lee study shows 4.44 acre-feet usage and the Sunrise study shows 4.25 acre-feet. One difference is the amount of visitors used in the Lee study. Lee uses 78 visitors per week. Sunrise knows that one visitor per resident per week is very high. We have used 30 visitors per week which is an anecdotally correct number. Unfortunately, residents do not get many visitors on a weekly basis.

We have also included a memo from Victor Regnier, the former Dean of the University of Southern California School of Architecture, commenting on the study conducted by Sunrise. Victor is a unique individual inasmuch as his disciplines are both architecture and gerontology. Victor has written the books on assisted living. His Assisted Living Housing for the Elderly is one of the most popular books on the subject.

Part of the mitigation measures we will employ will be low flow faucets and showerheads. We want the Water Management District to know that our management policy will include periodic inspection of those devices to make sure no one has tampered with or replaced any of them once they are installed. Sunrise will provide a letter to all new residents setting forth the importance of water conservation at Sunrise of Carmel Valley. Keep in mind that our residents are typically in their mid eighties and require assistance showering. That assistance, of course, is provided by Sunrise personnel, so it would be nearly impossible to compromise any installed water saving devices without Sunrise's knowledge.

Currently our development application is being held up pending the Water Management District's concurrence that Sunrise of Carmel Valley can operate within the 4.8 acre-feet allotment. We hope that these studies presented to you today are reasonable evidence that the 4.8 acre-feet of water will supply the needs of our Sunrise home and that this can be conveyed to the Planning Department so our application can move forward.

Thank you very much for your time and consideration. Please call with any questions you might have. We at Sunrise look forward to providing a Sunrise community to the seniors in the Carmel Valley area.

Sincerely,

SUNRISE DEVELOPMENT, INC.

Daniel F. Zemanek
Development Specialist

LEE & ASSOCIATES
CONSULTING MECHANICAL ENGINEERS
2511 Garden Road Suite 140
Monterey, California 93940-5376
(831) 649-8000
FAX (831) 649-8038

March 20, 2001

#20010050

Paul E. Davis AIA
Davis Partnership
286 El Dorado Suite A
Monterey, California 93940-2907

Re: **Sunrise Assisted Living Water Conservation**

Dear Paul:

Lee & Associates was retained by Sunrise Development, Inc. to provide a professional engineering opinion as to the expected water use for its proposed 64 unit (78 resident) assisted living facility in Carmel Valley.

The Monterey Peninsula Water Management District regulations dictate a land use water demand factor of 0.085-acre feet/yr per bed for a residential care facility licensed by the California Department of Social Services. For an 78-bed facility this equates to 6.63-acre feet per year. The allocation to the proposed site for the facility is 4.8-acre feet/year.

The facility owners propose to incorporate several extraordinary water conserving features into the facility to allow it to function at the reduced allotment and to insure themselves, the public, and the authorities with jurisdiction that public health will be maintained at the reduced water allocation.

Our methodology for this opinion was two-fold. One approach was to build an estimate for the facility water use from the "ground up" based on a rational analysis of water using functions and the proposed water saving features being installed. The second approach was to work from the "top down" using the base District demand use factor of .085/bed and the proposed water saving features.

The same irrigation usage was factored into both estimates as it was prepared by an independent landscape consultant hired by Sunrise Development, Inc. to reflect an actual proposed landscape plan.

The results of the two methods are strikingly similar. Both the "bottom up" rationale method and the "top down" allocation method resulted in the identical estimate of 4.44 af/year required for the facility. These estimates are nearly 10% less than the allotment for the property of 4.8 af/year.

It is interesting to note that the landscape use is estimated at 33% of the total facility uses, even with the water conserving landscape design. This indicates the overall efficiency of the proposed interior water use.

TOP DOWN ANALYSIS

The .085 demand factor/bed includes an allocation for minimal landscaping around a facility. This analysis will deduct that allocation and add a separate irrigation allowance at the end because of the more extensive nature of the site and the Owner has a proposed irrigation plan with water use estimates. The included irrigation allowance will therefore be deducted initially from the allowance.

Interior Water Use

The City of Santa Barbara study (SBS) indicates in Table 2 that 30% of a retirement facility water use is exterior (landscaping) use and 70% was interior use. To be conservative, this analysis will assume that ratio to be 20% and 80%. Therefore, for an 78-bed facility at .085 af/bed, the allocation would break down to:

Exterior (irrigation) Use	20% x 0.085 x 78	=	1.35 af
Interior Use	80% x 0.085 x 78	=	5.28 af

Re: **Sunrise Assisted Living Water Conservation**

Toilets

The Santa Barbara study indicated that toilets are 30% of the interior use. The District's residential schedule allow ULF toilets to be counted as 1 FU vs. 1.7 FU for a standard low flush 1.5 gallon flush toilet (.7 FU credit). This analysis will use the ratio of the actual flush volumes (.5 gallons vs. 1.5 gallons) as the basis to estimate water use. At 33% of the consumption of a 1.5 gallon toilet, the use will be::

5.28 AF	x	30%	=	1.584 af (standard low flow toilet)
1.63 AF	x	33%	=	.523 af (ULF toilet)

Water Savings with Ultra low flow Toilets = 1.06 af

Therefore the resulting interior water use for the facility would be:

5.28 af/yr – 1.06 af/yr = 4.22 af/year

Lavatory Faucets

Similarly, lavatory faucets are equal to 10% of the interior water use per the Santa Barbara Study. ULF flow commercial style faucets use .5 gpm vs. standard State approved residential faucets which use 2.2 gpm. Therefore, the water savings would be

5.28 af	x	10%	=	.53 af/yr (standard faucets)
.53 af	x	.5/2.2	=	.12 af/yr (ULF faucet)

Water savings with ultra low flow faucets= .41 af/year

The cumulative net result interior water use would be

4.22 af /yr - .41 af /yr = 3.81 af/year

Re: **Sunrise Assisted Living Water Conservation**

Showers

Showers represent 10% of the interior water use per the Santa Barbara study. Likewise, a 1.5-gpm-shower head vs. a 2.0 gpm showerhead will result in a savings of:

5.28 af	x	10%	=	.53 af/yr (standard shower)
.53 af	x	1.5/2.0	=	.40 af/yr (ULF shower)
Water savings with ultra low flow Showers			=	.13 af/yr

and will result in a cumulative net interior water use of

3.81 af/year – .13 af/year = 3.68 af/year

Other Interior Water Uses

Toilets, showers, and lavatory faucets represent 50% of the interior water use per the Santa Barbara Study. The other uses are due to ordinary food preparation and dining, cleaning, and laundry use in a retirement facility.

Laundry

The Owners propose to use a recycle type laundry water system that only uses fresh water for a final rinse. One 50-pound commercial washer is planned for the facility to operate for 8 hours/day, five days per week. Currently these washers use about 100 gallons/cycle. The Owner's estimate that the maximum practical cycle rate for the washer is about 1 cycle/hr. With the recycle water system, the fresh water is reduced to about 16 gallons/cycle. Therefore, the water savings due to the laundry water recycle system is:

$$\frac{(100 \text{ gallons} - 16 \text{ gallons})}{\text{cycle}} \times 8 \text{ cycles/day} \times 5 \text{ days/wk} \times 52 \text{ wks/yr}$$

= 174,700 gals/yr = .54 af/yr

Re: **Sunrise Assisted Living Water Conservation**

Therefore, with the laundry savings, the cumulative interior net water use per year would be:

3.68 af/yr – .54 af/yr = 3.14 af/yr

Residential Laundry

4 ULF residential washing machines will be installed in the facility for the residents to do their private laundry. We have estimated this usage to amount to only one load of laundry per week per resident since not all residents will do their own laundry. The savings due to the ULF machines will be:

$$\frac{(32 \text{ gallons} - 18 \text{ gallons})}{\text{cycle}} \times 80 \text{ loads(cycle)} \times 52 \text{ weeks}$$

= 58,240 gallons/yr = .18 af/yr

The cumulative net water use will then be

3.14 af/yr - .18 af/yr = 2.96 af/yr

Kitchen Use

A water conserving commercial dishwasher will be installed in the facility. This unit uses 1.2 gallons of water per rack of dishes compared to standard units which use at least 2.5 gallons per rack.

The estimate is that for 30 staff and 78 residents with guests, the facility will prepare 97,192 meals/year.

Each meal will produce five pieces to be washed, plus dinnerware. The manufacturer estimates that each rack can hold forty pieces. Therefore, the water savings will be:

(97,192 meals/year x 5 pieces/meal ÷ 40 pieces/rack) (2.5 – 1.2)gal/rack
= 15,794 gallons/year = .05 af/yr savings.

Re: **Sunrise Assisted Living Water Conservation**

With the dishwasher savings the cumulative net interior water use for the facility would be:

2.96 af/yr - .05 af/yr = 2.91 af/yr

Irrigation Use

The Owner has retained a landscape architect that has developed an estimated irrigation water use of 496,300 gallons/year or 1.53 af/year for drought resistant landscaping, minimal turf, and fruit trees.

Adding this back to the interior water use, the total estimated water use is:

2.91 af/yr + 1.53 af/yr = 4.44 af/yr.

NOTE: 1.35 af/yr was assumed initially for irrigation when calculating the interior water savings above. Therefore, the estimated facility water consumption is conservative.

RATIONAL METHOD/BOTTOM UP
WATER USE ESTIMATES

DIRECT RESIDENT USE		GAL/YR PERSON
Toilet	8 flushes/day @ 0.5 gal/flush	1,060
Shower	4/week/resident @ 1.5 gal/min for 10 mins	3,102
Teeth Brushing	2/day/resident @ .5 GPM for 2 mins	730
Shaving	25 of residents shave @ .5 GPM for 5 mins	228
Washing Hands	5/day/resident @.5 GPM for ½ min	456
Wash Flrs/ Cleaning	5/gals/resident/wk	260
Hydrotub	5% of residents use daily @ 40gals/time (5 days/wk)	520
Total Estimated Gallons/Year/Resident		6,374

Average resident use in acre-foot/year/resident
af/yr/resident = 6,374 GPY/Resident ÷ 325,851 Gallons/af
= 0.0196 af/yr Resident (17.5 gallons/day/resident)

Total estimated direct Resident use
78 residents @ .0196 af/yr/resident 1.53 af/yr

Re: **Sunrise Assisted Living Water Conservation**

DIRECT EMPLOYEE USE

Toilets	5 flush/day/employee @ 0.5 gals/flush	2.5 gal/day
Hand Washing	10/day/employee @ 0.5 GPM for 1 min	5.0 gal/day
	Total Estimated Gallons/Day/Employee	7.5 gal/day

Total estimated direct employee use
20 staff positions @ 7 days/week
20 x 7 x 7.5 x 52 = 54,600 gal/yr
10 staff positions @ 5 days/week
10 x 5 x 7.5 x 52 = 19,200 gal/yr .23 af/yr

Visitors
78 visitors/week (1 per / week / Resident)
½ use restroom 0.5 gals for water closet
0.5 gals for hand wash
½ x 78 x 1 gal x 52 weeks = 2028 gallons = 0.0064 af/yr (rounded to) .0l af/yr

DINING WATER USE ESTIMATES

78 Residents x 3 meals a day x 365	=	85,410 meals/year
30 Employees x 1 meal a day	=	10,950 meals/year
78 Visitors/week x 20% = 16 x 52	=	832 meals/year
		97,192 meals/year

Dishwashing, Pan Washing etc.
@ 5 pieces/meal 40 pieces/rack
97,192 meals x 5 pieces ÷ 40 pieces/rack = 12,149 racks
Per Hobart 1.2 gallons/rack x 12,149 racks/yr = 14,580 gal/year

Spray Wand Washer (Pre-Rinse)
2 hours/meal x 10 mins/hr x 5 gpm x 3 meals/day
= 300 gal/day x 365 days = 109,500 gal/yr

Misc. Cooking (2)
1 gal/per meal/day (pan washing/cleanup, etc.)
280 gal/day x 365 days = 102,200 gal/yr
1 gal/person/day x 108 people x 365 days
(ice machines, steam tables) = 39,420 gal/yr

Total Dining Use	=	265,700 gal/yr
	=	.82 af/yr

Re: **Sunrise Assisted Living Water Conservation**

LAUNDRY WATER USE

Central Laundry with ozone and recycle (final rinse only fresh use)

(1) 50 Pound Washer
(2) Wash Time: 8 Hours shift 5 days week
(3) Washer cycle: 1 hour per load
(4) 15.6 gallons per cycle of fresh water

Water usage for washer with reuse cycle and ozone treatment

$$\frac{15.6 \text{ Gallons}}{\text{Cycle}} \times \frac{1 \text{ Cycle}}{1 \text{ Hour}} \times \frac{8 \text{ Hours}}{1 \text{ Day}} \times \frac{5 \text{ Days}}{\text{Week}} = 624 \text{ gal/wk}$$

$$= \frac{524 \text{ Gallons}}{\text{Week}} \times \frac{52 \text{ Weeks}}{1 \text{ Year}} \times \frac{1 \text{ AF}}{325{,}751 \text{ Gallons}} = .10 \text{ af/yr}$$

Residential Laundry @ 18 gallons/cycle (load) (Maytag or equal)
1 load/week/resident x 78 residents x 52 weeks
x 18 gals/load = 73,000 gal/yr = .22 af/yr

TOTAL WATER USE

Direct Resident Use	1.53 af/yr
Employee Use	.23 af/yr
Visitor Use	.01 af/yr
Food Preparation/Kitchen and Dining Use	.82 af/yr
Laundry Use	.10 af/yr
Residential Laundry Use	.22 af/yr
Total Interior Use	2.91 af/yr
Irrigation Use	1.53 af/yr
Total Required Water	4.44 af/yr
Allotted Water	4.8 af/yr

Re: **Sunrise Assisted Living Water Conservation**

Therefore, as previously stated the two methods of water use estimate resulted in an identical projection of 4.44 af/yr for the facility. This estimate is nearly 10% less than the 4.8 af/yr allotment (.36 af/yr reserve).

Please review the above information and contact us at your convenience if you have any questions or require any additional information.

Cordially,
LEE & ASSOCIATES

Raymond D. Cole

RAYMOND D. COLE, PE
Principal

Copy: Dan Zemanek
Sunrise Development Inc.

nel Valley Facility for Sunrise Assited Living — Water Allocation 4.8 acre-feet (1,564,320 gallons)

nits; 78 residents capapcity
aff/day & 30 visitors/week

ure/Unit Type		# Units	Water & Sewer (Gals/Yr) Typical	Proposed	Savings	Save %
dent Rooms (64) and Public Restrooms (2)						
Gravity Tank & Bowl	**Flushes/yr**	66				
78	170,820					
30 staff x 5 days x 3 flushes	23,400					
20 staff x 2 days x 3 flushes	6,240					
30 visitors/wk x .5 flush (Short Visits)	780					
	201,240					
1.6 gal			321,984			
Microflush by Microphor (0.5 Gal)				100,620	221,364	63.3%
Faucets (64+2)		66				
2.0 GPM to 1.0 GPM			116,800	58,400	58,400	50.0%
Showers (64 showers & 2 spas)	**Showers/yr**					
78 residents	16,224					
Average 4 showers per week						
Avg 10 min shower @ 2.5 GPM & 1.5 GPM						
Residents Room Showers		64	405,600	243,360	162,240	40.0%
Hydrotub (40gals 10 times/wk)		2	20,800	20,800	0	0
ident Rooms Subtotal:			865,184	364,780	500,404	57.8%
ndry						
Commercial Laundry (1 Unit)						
50 lb (25 loads/wk@37gals x 5cycles=185 gals)			240,500			
Ozone Process (3cycles@ 37 gals=111 gals per load)				156,325	84,175	35.0%
Residential Laundry (4 Units)						
Maytag Spec (21 gals 5 cycles x 80 loads/wk)			436,800			
Fisher&Paykel (14 gal x 3 cycles/80 loads/wk)				174,720	262,080	60.0%
Quiet Line (13.8gal x 3cycles/50 loads/wk)Vert W/D Alternate						
ndry subtotal			677,300	331,045	346,255	51.1%
tchen (assume 2 gals per meal)	**Meals/day**	**Meals/Yr**				
78 res. meals x 3 per day	234	85,410				
30 staff meals x 3 per day	90	32,850				
14 visitor meals per week	2	730				
	326	118,990				
Hobart Dishwashers do all warewashing						
Hobart AM14F is 80 gallons/day: Hobart AM-14C 70 gals/day			29,200	25,842	3,358	11.5%
Meals x 5 pieces/meal divide 40 pieces/rack x Hobart GPM						
Pre-rinsing 25% gals per rack or 10.375 gals/day			3787	3787		
Misc Preparation (coffee, ice, steamers etc.) 450 gallons per day			164,250	164,250		
Actual Gallons per Meal			*1.66*	*1.63*		
tchen subtotal			197,237	193,879	3,358	1.7%
tal (Inside)			1,739,721	889,704	850,017	48.9%
re-Feet			5.34	2.73		
re-Feet per bed (80 beds)			0.067	0.034		
rigation						
6% cov MAWA (Max Applied Water Allowance)			*1,775,029*			
dscape 33% turf; 66% groundcover w spray/drip			*1,727,680*			
20% turf; 80% groundcover w spray/drip			1,586,463			
20% turf; 80% groundcover with drip			*1,411,116*			
5% cov 0% turf; 100% gmdcover+drip & drought resistant plants		*Goal*	*481,126*			
landscape coverage (52k) & orchard/vineyard (59.5k) with drip				496,360		
rigation subtotal			1,586,463	496,360	1,090,103	68.7%
re-Feet			4.868	1.523		
re-Feet per bed			0.061	0.019		
			1	**2**	**3**	
tal Gallons (Inside & Outside)			**3,326,184**	**1,386,064**	**1,940,120**	**58.3%**
re-Feet			**10.21**	**4.25**		
re-Feet per Bed			**0.128**	**0.055**		
ater Allocation 4.8 acre-feet (0.062 acre-feet per bed)				1,564,320		
re-Feet including landscaping irrigation				4.80		
re-Feet per bed including landscaping irrigation				0.062		

unrise's % of Allocation: **88.6%** **TOTAL WATER USAGE** **1,386,064** **4.25 Acre-Ft**

victor regnier
ARCHITECT FAIA
10610 LINDBROOK DRIVE
LOS ANGELES, CALIFORNIA 90024
(310) 474-9560 FAX (310) 474-2718

memo:

DATE: 3/8/01

TO: Dan Zemanek, Senior Development Specialist, Sunrise
FROM: Victor Regnier FAIA, Professor of Architecture and Gerontology, University of Southern California
RE: Water Usage Study for Carmel

Thanks for the supportive materials that describe the assumptions made in the projections of water use and conservation for the Carmel Sunrise project. As you know, I have been evaluating Sunrise buildings for the last few years in preparation for a new book. This has given me a chance to examine the operations of a number of Sunrise and other assisted living buildings throughout the country.

I think you have done a very good job reaching some of the most knowledgeable people in the Sunrise organization as sources for this analysis. I would trust with the greatest confidence people like Dory Parker. Not only has she been with the Sunrise organization for more than a decade, she is a fountainhead of knowledge about the practical details associated with operations.

In my perusal of the data, it seems you have made good assumptions. In fact, I suspect that general water usage estimates for shower use may be a little high. In general, older residents in assisted living often opt for fewer than 4 showers a week and rarely is the time frame as long as 10 minutes. The process of taking a shower or bath is sometimes rejected by people with dementia. For many, It is such an unpleasant process that I would be surprised if showers were given twice/week. For the physically frail, the risks often outweigh the benefits. Taking a shower is a dangerous activity for a physically frail older person. Also, older people have thin sensitive skin which can easily bruise and may be subject to irritation from soap or other cleaning agents.

Beyond this potential overestimation regarding showers, the rest of the data seem very accurate to me. Your analysis raises lots of interesting questions regarding water and energy conservation in general, which could be the basis for policy in other assisted living projects or other Sunrise projects.

USC
UNIVERSITY
OF SOUTHERN
CALIFORNIA

School of Architecture

BIOGRAPHICAL SKETCH & QUALIFICATIONS OF VICTOR REGNIER FAIA

Victor Regnier holds a joint professorship between the USC School of Architecture and the Leonard Davis School of Gerontology, the only joint appointment of this nature in the US. From 1992 until January, 1996 he served as the Dean of the School of Architecture.

As a scholar he has published 5 books and research monographs, as well as over 50 articles and book chapters dealing with various aspects of housing for the elderly including an awarding winning book entitled *Assisted Living Housing for the Elderly: Design Innovations from the United States and Europe* (Wiley, 1997). He has also received award recognition for his scholarship from the American Society of Landscape Architects, the American Planning Association, Progressive Architecture and the Fulbright Association. In 1999 he received the Gerontological Society of America's coveted Polisher Award for applied research. In 2000, *Contemporary Long Term Care* selected him as one of 5 national leaders whose work has made a difference in the quality of life of older people.

As a researcher he has directed 21 projects dealing with the social and behavioral impact of the environment on older people, children and the homeless. His design research findings have been presented at over 120 professional and scientific conferences as well as more than 40 university symposia. He is currently on the editorial or advisory board of 5 journals or professional magazines.

As a teacher Professor Regnier has also received awards including selection as a USC Mortar Board Professor of the Year in 1994/95.

As a designer he has provided consultation advice on over 250 building projects in 35 states, Canada and England.

He is the only person to have achieved fellowship status in both the American Institute of Architects and the Gerontological Society of America.

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