

MEMBERS PRESENT: Chairman Dini  
Vice Chairman Schofield  
Mr. Craddock  
Mr. DuBois  
Mr. Jeffrey  
Mr. May  
Mr. Mello  
Mr. Nicholas  
Mr. Polish  
Mr. Prengaman  
Mr. Redelsperger

MEMBERS ABSENT: None

GUESTS: Mr. George Tackett, Nevada Bell  
Mr. Chuck King, Central Telephone  
Mr. Steve Tapogna, City of Reno  
Mr. Earl Hawkes, Clark County  
Mr. Mike Ewald, Airport Authority  
Mr. Frank Rothwell, City of Sparks  
Mr. G. P. Etcheverry, Nev. League of Cities  
Mr. Joe Cathcart, City of North Las Vegas  
Mr. Bob Loux, Dept. of Energy  
Mr. Julius Conigliaro, City of Las Vegas

VC Schofield called the meeting to order at 9:05 A.M.

The first bill to be discussed is AB-384. Mr. George Tackett testified in support of the bill. His testimony is attached hereto as EXHIBIT A and is made a part of these minutes. This proposed legislation corrects an important omission in existing statutory procedure for the sale of real property as a result of tax delinquencies.

In answer to Mr. Redelsperger's question as to when something like this might arise, Mr. Tackett answered that if a property were sold because of failure to pay taxes, the existing statute says that if that property tax is not paid, the tax receiver will convey a deed to that property in trust for the county and state to the county treasurer, free of all encumbrances. If a utility has an easement across that property, or a right of way, and the property is transferred free of all encumbrances, that easement or right of way is lost. All the utility can do is exercise on the subsequent owner a condemnation or negotiation for easement right of way again or relocation of our facility. To date, we have had no loss of easement because of this. We are attempting to avoid this in the future by using careful planning and follow the trend that 30 states have already chosen to incorporate in their statutes.

This concluded testimony on AB-384.

The next bill to be discussed is AB-385. Mr. Bob Loux, Dept. of Energy, testified that the bill was introduced as a result of a request to Mr. Bob Rusk. The bill talks about enacting a system to evaluate the energy use of major items of equipment that use energy which will show those that use less energy over their useful life. There is a great deal of discrepancy between major appliances and automobiles about their energy use. An analogy can be made similar to AB-48 on the life cycle cost of municipal and state buildings. A recommended amendment on Line 16, Paragraph 3, with the wording: "the Department of Energy shall assist upon request.....". This would indicate an involvement upon request. There has been a similar system in effect at the state level since April 30, 1978 to evaluate automobiles, fluourescent lamps, cruise controls for automobiles, radial tires, etc.. Although the information is not available today, I can supply a breakdown of the energy savings from these activities at the state level which, I understand, are somewhere in excess of the equivalent of 300,000 barrels of oil to date, based upon this activity alone.

Mr. Dini asked if this isn't something the federal government is already doing this by analyzing fixtures, etc. Mr. Loux answered that there are reports and booklets of information out now on how a system can be developed, the components of that system and the exact methodology to plug in numbers into a system that would show these sorts of energy usage in these pieces of equipment. I believe that there are systems that have already been developed and I think it is a matter of using the ones that have been adopted at the federal level and by numerous other states and local governmental agencies and just utilizing the numbers that are available locally on prices and energy costs.

Mr. Mello asked if it was worth our time to continue to look at bills that affect the Department of Energy when it has been cut out of the budget by Ways and Means.

Mr. Loux indicated that this is more directed that the local governmental level. I think that some of the experience the state has gained in utilizing such a system is directly transferrable to the local governmental level.

Mr. Steve Tapogna spoke on behalf of the Cities of Reno and Las Vegas, the Nevada League of Cities and the Local Government Purchasing Study Commission in opposition to AB-385. His testimony is attached herewith as EXHIBIT B and made a part of these minutes.

Mr. Earl Cox, Purchasing Contracter Director with Clark County, testified next. He indicated that he also represents the Southern Nevada Local Government Purchasing Study Commission. He testified that they have been using life cycle costing techniques with mixed success during the past several years. We consider it still to be experimental at this stage. Some items have worked out and some have not. This is the major reason we would not like to see life cycle costing mandated through legislation. We need first to consider the current economical environment, current level of market competition, sophistication of vendors, energy consumption of equipment to be purchased and some other other factors that make it very difficult when you are in a situation where it is mandated. Other problems with the life cycle costing are that the techniques have not been perfected and also tends to add to the price of some products when purchased because the bid documents are much more technical and detailed. It tends to reduce competition for that same reason. The formula shown in the bill may not be accurate because it requires considering trade-in value at a certain date and we are talking about discounted dollars at a certain date and taking a guess as to what the value will be at that time. Life cycle costing tends to increase bureaucracy and it does not necessarily reduce energy consumption because it does not take into account the energy expended in the manufacture of the product, which is sometimes very significant. We are looking for some assistance from the Department of Energy or some other agency but for it to be left as a management tool instead of it being mandated.

This concluded the testimony on AB-385.

The meeting was adjourned until 10:00 A.M.

Chairman Dini called the meeting to order at 10:00 A.M. and indicated that AB-374 would be heard.

Mr. Lonnie Chaney testified that the County Commissioners do have monies that they can donate to charitable organizations, such as EOB and other non-profit organizations. However, in the past, the monies that they have donated have been termed illegal. They are trying to change the rules so that they can legally donate funds to organizations like EOB and other non-profit organizations. EOB is the Economical Opportunity Board.

This concluded the testimony on AB-374.

The next bill is AB-378. Mr. Chaney, Assemblyman from District #7, testified that the Governor appointed a commission to do an analysis of what the problem was with minority businesses. It was called Minority Business Enterprise. It was established to

investigate why the businesses were having problems in getting funding to help their businesses. A small group of the nine appointed members sent out a questionnaire that showed that the biggest problem that small businesses had, with the exception of locations, was being able to cut through red tape in getting government funding and technical assistance. We then asked that the Office of Minority Business be established so that they might be able to obtain this kind of information through, because we know that this commission must make its recommendation in September at which time it will be dissolved. We felt that it was important that these people have a place where they could continue to do a followup study and try to keep these small businesses operating, maybe merge some of them. There are a lot of things we are trying to do through this organization, and this office could act as a tool to try to keep the minority businesses informed, give them the technical assistance that they might need, not just to September, but on and on.

Mr. Dini asked if the Department of Economic Development helps the minority businesses now.

Mr. Chaney answered that they do but they don't get to what the people really need. Most small businesses don't know what they really need themselves. They think if they just had a little more money, or they might need to relocate, etc. They seem to feel that in many cases, the location is the problem. We certainly have this in the black community in the West Las Vegas area, with the freeways nearby. Because the access to the freeways is there doesn't mean that anybody is going to stop. There might be two or three small businesses that might do better if they merged and make one good business. We feel that these are the kinds of problems the Minority Business Enterprise would be able to do because the Economic Development staff is not broad enough to cover all of these little businesses run by minorities throughout the Las Vegas area, the Reno area and in rural communities.

Mr. Hickey, Assemblyman from Clark County, District #18, testified that in the development of business, this state has always had the attitude of helping people in establishing businesses here and the total cost of \$135,914 to man a two person office is a small amount. There is a real reason for this particular bill in that we have both the Spanish and the black community in support. We now have a growing population which is running anywhere from 10% black to 10% hispanic, close to a fifth of our population. The fact that we want to emphasize this is because it seems reasonable to me because there are many people with talents that could be developed if we provide some kind of help.

It seems to me that on a reasonable basis, \$135,000 is not too much. This bill, if it leaves this committee, will go to Ways and Means and they will look into it.

Mr. Chaney if the technical assistance can be provided to people in minority businesses - three or four years ago, the task was given to the Latin Chamber of Commerce to establish a foreign trade zone and it went for three years without any results. We did acquire some technical assistance from OIC who said that we needed to put our heads together and maybe we could do things together that we could not do alone. We were able to convince the Department of Commerce that it was needed and within the next few days, we will be granted a license to have a foreign trade zone in Clark County and an industrial park, which will again fertilize the economy in these low income areas. So it is important that we can have some kind of technical assistance from our government that will give us, advise us of assistance in cutting these red tape areas.

Mr. Hickey indicated that there is broad community support for this, including the Chamber of Commerce.

Mr. DuBois asked if there was any assistance from the Small Business Administration.

Mr. Chaney answered that there is not that much. Certainly SBA, NEDCO have been instrumental in trying to help but they don't have the staff and they come in from Washington, D.C. to give you a couple of days of what they see right there, but we want someone with some knowledge of what is going on in the state. It certainly would be more information than what you could get from someone who comes in from San Francisco for two days to tell you how to organize a business.

Mr. Hickey stated that in the light of the present federal cutbacks, I am sure that there will be less assistance through the Small Business Administration.

Mr. Chaney stated in answer to Mr. DuBois's question that once you establish an organization that is beneficial, it certainly can become self-supporting and get out of the government type subsidy.

Mr. Redelsperger asked if they had thought of hiring someone within the local community to coordinate this kind of effort out of existing funds, possibly through a local Chamber of Commerce.

Mr. Hickey answered that you probably could. Mr. Redelsperger stated of a couple of projects that were started through this process, through the Chamber of Commerce that were successful in his area.

Mr. Hickey stated that within the black community, there is no organization set up similar to the hispanic organization.

Mr. Chaney stated that the Chamber of Commerce is doing a good job for businesses throughout the state. We are trying to zero in on a minority area of small business.

Mr. Dini stated that there is a continuing source of information and guidelines with the Department of Economic Development.

This concluded testimony on AB-378.

Action was taken on AB-384. Mr. Schofield moved a DO PASS, seconded by Mr. Prengaman. Motion carried.

Action was taken on AB-385. Mr. DuBois moved for an INDEFINITE POSTPONEMENT, seconded by Mr. Schofield. Motion carried.

Action was taken on AB-374. Mr. Nicholas moved for a DO PASS, seconded by Mr. DuBois. Motion carried.

Action was taken on AB-378. Mr. Dini stated he would entertain a motion to DO PASS and RE-REFER TO WAYS AND MEANS.

Mr. Mello stated he wanted to give the committee some information on some of the things being done right now in the Equal Rights Commission. The agency request of \$380,000 as against the Governor's recommendation of \$334,000 for 1981-1982; for 1982-1983, the agency is requesting almost \$403,000 for each year; the Governor is recommending a little over \$340,000. Regarding the federal grant for the Equal Employment Opportunity Commission, the agency request for 1981-1982 is almost \$133,000; the Governor is recommending more. The agency request for 1982-1983 is \$142,000, the Governor is requesting for both of those years about \$12,000 more. He reviewed a number of other requests. He stated that what you are looking at in this area for 1981-1982 a budget of \$1,110,000 and for 1982-1983, \$1,161,000, these are agency requests, with the Governor's requests for these being considerably more. If it can be proven to me that by establishing this agency that you are going to do exactly what these two gentlemen want (Messrs. Hickey and Chaney), then I would be 100% in favor of it. I am not sure you are going to do that when you already are lacking something when you already have a Department of Economic Development and they should be working with the minorities.

They have ample money to do that. I would hope that in sending this over to Ways and Means that they would look at not setting up another agency, which some day could be a super agency, because they have all turned in to be that way, but setting up a couple of staff to the Department of Economic Development with that in mind. We appropriated several hundreds of dollars last session, mainly to Clark County for the development there. Someday, we are going to have to sit down and, hopefully, this session because the people want to save money not keep spending money and seeing much of this money not serving them in a useful way. They better start looking at the fact that they better take these agencies when it comes to advertising and bringing in industry and helping the local businessman, and make them do the job.

Mr. Schofield moved a DO PASS and RE-REFER TO WAYS AND MEANS.  
Mr. Nicholas seconded.

Mr. Dini stated that if it is going to fly in one of the committees, I think that they can adjust it into that total picture there and maybe spend a lot less money in using the existing staff in providing services to the minority groups.


Mr. Polish suggested that Mr. Mello's comments on the other figures also be included. Mr. Mello suggested that the chairman speak to the chairman of the Ways and Means Committee, then. By sending this bill by itself, is not giving our full intent of doing something for the minorities, which I am in favor of doing. By sending this bill over there, we are telling them we want them to set this up. I believe that they can do it presently without this bill. There is no reason why they can't. All they have to do is add it to the Department of Economic Development. We are only sending this over there in hopes that they will put it in a budget that already exists, not set up another agency. I have no objections of supporting this bill if that is what the Chairman will convey to the Chairman of Ways and Means.

Mr. Dini stated that we can send a letter of intent which Mr. Mello has indicate he would support the motion with a letter of intent. We are 'do passing' the concept of the bill.

Motion carried, with the understanding that a letter of intent would be sent to Ways and Means.

Meeting was adjourned at 11:00 A.M.

Respectfully submitted,

  
Lucille Hill  
Assembly Attache

1441

ASSEMBLY GOVERNMENT AFFAIRS COMMITTEE

GUEST LIST

Date April 6, 1981

PLEASE PRINT YOUR NAME	PLEASE PRINT REPRESENTING:	I WISH TO SPEAK		BILL NO.
		FOR	AGAINST	
Steve TAPOGNA	City of Reno - <sup>City of L.V.</sup> Local Govt.		✓	AB 385
EARL HAWKES	CLARK COUNTY-		✓	AB 385
Mike Ewald	Airport Authority		✓	AB 385
FRANK ROTHWELL	CITY OF SPARKS		✓	AB 385
GP Etcheberry	New LEAGUE OF CITIES		✓	AB 385
Joe Cathcart	City of North Las Vegas		✓	AB 385
✓ Bob Loux	Dep <sup>t</sup> of Energy			
<del>James Conaghan</del>	City of Las Vegas		✓	AB 385
GEORGE TACKETT	NEVADA BELL	X		AB 384
CHUCK KING	CEN TEL			



BACKGROUND/TESTIMONY A.B. 384

N.R.S. 361.590 SECTION 5 - CLARIFICATION

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE MY NAME IS GEORGE TACKETT, AND I AM SPEAKING ON BEHALF OF THE BELL TELEPHONE COMPANY OF NEVADA IN SUPPORT OF A.B. 384. THIS PROPOSED LEGISLATION CORRECTS AN IMPORTANT OMISSION IN THE EXISTING STATUTORY PROCEDURE FOR THE SALE OF REAL PROPERTY AS A RESULT OF TAX DELINQUENCIES.

UNDER THE PRESENT STATUTE, WHEN PROPERTY TAXES HAVE BEEN DELINQUENT FOR A STATED PERIOD OF TIME, THE PROPERTY IS CONVEYED BY THE TAX RECEIVER IN TRUST TO THE COUNTY TREASURER FOR SALE OR OTHER DISPOSITION. THE DEED TO THE COUNTY TREASURER CONVEYS THE PROPERTY "FREE OF ALL ENCUMBRANCES" EXCEPT CERTAIN OTHER LIENS FOR TAXES OR ASSESSMENTS. THE STATUTE CONTAINS NO EXCEPTION FOR EXISTING UTILITY EASEMENTS OR OTHER EASEMENTS WHICH MAY LIE ACROSS THE PROPERTY.

ALTHOUGH WE ARE NOT AWARE OF ANY BELL TELEPHONE EASEMENTS OR RIGHTS-OF-WAY TO DATE THAT HAVE BEEN LOST BY SUCH A TAX DELINQUENCY CONVEYANCE, THE POTENTIAL PROBLEM IS OBVIOUS. IF AN EXISTING EASEMENT WERE TO BE DESTROYED BY SUCH A CONVEYANCE, THE COMPANY WOULD EITHER HAVE TO CONDEMN OR OTHERWISE OBTAIN A NEW EASEMENT FROM THE SUBSEQUENT OWNER OF THE REAL PROPERTY OR IT WOULD HAVE TO MOVE THE FACILITIES WHICH HAD BEEN CONSTRUCTED ON THE PRE-EXISTING EASEMENT TO A NEW LOCATION. THESE EXPENSIVE SOLUTIONS SHOULD BE MADE UNNECESSARY AND THAT IS THE PURPOSE OF THE PROPOSED LEGISLATION.

IN THE PROPOSED LEGISLATION, EXISTING EASEMENTS LIKE TAX LIENS AND ASSESSMENTS SURVIVE THE TAX DELINQUENCY CONVEYANCE. THE EXISTING EASEMENTS ARE RECOGNIZED AND PROTECTED, THUS ALSO PROTECTING THE COMPANY'S INVESTMENT AND AVOIDING INCURRING ADDITIONAL COSTS.

ACCORDING TO OUR RESEARCH, APPROXIMATELY 30 STATES HAVE ENACTED LEGISLATION WHICH PROVIDES FOR THE PROTECTION AND CONTINUATION OF CERTAIN TYPES OF ENCUMBRANCES, INCLUDING UTILITY EASEMENTS, WHEN REAL PROPERTY IS SOLD FOR NONPAYMENT OF REAL PROPERTY TAXES. A COPY OF THE CALIFORNIA STATUTE, WHICH IS TYPICAL TO OTHER STATES IS FOUND IN THE TAX CODE AT SECTION 3520, HAS BEEN DISTRIBUTED TO YOU. THE PROPOSED LEGISLATION (A.B. 384) SIMILARLY PROTECTS EXISTING EASEMENT RIGHTS AND RECOGNIZES THE NEED FOR THEIR CONTINUED USE. ENACTING THIS LEGISLATION WILL PREVENT WHAT WE SEE AS POTENTIAL FUTURE PROBLEMS.

I WOULD LIKE TO THANK YOU, MR. CHAIRMAN AND THE MEMBERS OF THIS COMMITTEE, FOR THE OPPORTUNITY TO PRESENT THIS INFORMATION IN SUPPORT OF A.B. 384. I WOULD BE HAPPY TO ANSWER ANY QUESTIONS YOU MAY HAVE.

§ 3518

PROPERTY TAXATION—TAX SALES

Div. 1

Note 9

either therefore constituted a cloud on the title. Chase v. City Treasurer of City and County of Los Angeles (1898) 55 P. 414, 122 C. 540.

§ 3519. Repealed by Stats.1941, c. 7, p. 407, § 1, eff. Jan. 29, 1941, operative Feb. 1, 1941

Historical Note

The repealed section, enacted by Stats. 1939, c. 154, p. 1328, § 3519, read: "The deed conveys to the State the absolute title to the property, except that, when the land is owned by the United States or this State, it is prima facie evidence of the right of possession accrued as of the date of the deed."

The section was derived from Pol.C. § 3787, amended Stats.1905, c. 218, p. 325, § 63; Stats.1913, c. 290, p. 550, § 5; Stats.1917, c. 157, p. 241, § 1; Stats.1927, c. 830, p. 1008, § 1.

The subject matter of the repealed section was incorporated into section 3520 by Stats.1941, c. 7, p. 407, § 2.

§ 3520. Lien defined; title conveyed, exceptions; revenue district liens; federal or state lands, deed as prima facie evidence

Lien. As used in this section, "lien" includes any lien for:

- (a) Interest and penalties or both on taxes or special assessments or both.
- (b) Amounts payable to cities or for their account on redemption of property from sale for taxes, special assessments, or other amounts.

Title conveyed. The deed conveys to the State the absolute title to the property, free of all encumbrances, except:

- (1) Liens for taxes levied for municipal, irrigation, reclamation, protection, flood control, public utility or other district purposes, not included among those taxes and assessments for delinquency in the payment of which the property is conveyed to the State.
- (2) Liens for special assessments collected on tax rolls.
- (3) Liens or assessments for other amounts which by law are collected on tax rolls by or for account of cities.
- (4) Easements constituting servitudes upon or burdens to the property; water rights, the record title to which is held separately from the title to the property; and restrictions of record.

Revenue district liens. Where the tax collector executes a single deed conveying property to the State for the delinquent taxes and assessments of the county and of revenue districts, the tax and assessment liens of such revenue districts are extinguished by the conveyance to the State and are not included in the exceptions enumerated in subparagraphs (1), (2) and (3) of this section. Each such revenue district, however, shall retain an equitable lien in the property and there shall be paid by the county to each such district its pro rata share of the proceeds of any resale by the State, or redemption from

the State, and such lien and right shall be terminated in the manner and at the time that the county's rights in the property are terminated.

**Federal or state lands.** When the land is owned by the United States or this State, the deed is prima facie evidence of the right of possession accrued as of the date of the deed without prejudice to the taxes or assessments which are a lien upon the property.

(Added by Stats.1941, c. 7, p. 407, § 2, eff. Jan. 29, 1941, operative Feb. 1, 1941. Amended by Stats.1941, c. 886, p. 2463, § 1, eff. July 1, 1941.)

#### Code Commission Notes

Where taxes or assessments of revenue districts are collectible at the same time and in the same manner as county taxes the amount for which the property is sold and deeded, in practice, includes such unpaid taxes or assessments as well as unpaid county taxes. This practice was expressly approved as to such city taxes in *Griggs v. Hartzoke* (1910) 109 P. 1104, 13 Cal.App. 429, which held that title passed to the State for nonpayment of the city taxes as well as for nonpayment of the State and county taxes.

This codification is in accordance with the *Griggs* case.

#### Historical Note

The 1941 amendment, in both subparagraphs of the paragraph defining "lien" referred to "special" assessments; in the paragraph relating to the title conveyed, the amendment added, in subparagraph (1), the words "not included among those taxes and assessments for delinquency in the payment of which the property is conveyed to the State"; and added subparagraph (4); and added the penultimate paragraph dealing with revenue district liens.

Former section 3520, enacted by 1939, c. 154, p. 1323, § 3520, read:

"As used in this section, 'tax lien' includes any lien for:

- "(a) Taxes or assessments or both.
- "(b) Penalties or interest or both on taxes or assessments or both.
- "(c) Amounts payable on redemption of property from sale for taxes or assessments or both.

"The title conveyed by the deed includes the tax liens of the State, the county, and all revenue districts the taxes or assessments of which it is the county's duty to collect in the same manner and at the

same time as county taxes and is free of all encumbrances except the tax liens of revenue districts and taxing agencies the taxes or assessments of which are not collectible by the county in the same manner and at the same time as county taxes."

The former section was repealed by Stats.1941, c. 7, p. 407, § 1. It was derived from Pol.C. § 3787, amended Stats. 1895, c. 218, p. 325, § 63; Stats.1913, c. 290, p. 559, § 5; Stats.1917, c. 157, p. 241, § 1; Stats.1927, c. 830, p. 1600, § 1.

The provisions contained in the introductory portion of the second paragraph and the final paragraph were covered by former section 3519 prior to its repeal in 1941.

Derivation: Former sections 3519, 3520 enacted by Stats.1939, c. 154, p. 1323, §§ 3519, 3520.

Pol.C. § 3787, amended by Stats.1895, c. 218, p. 325, § 63; Stats.1913, c. 290, p. 559, § 5; Stats.1917, c. 157, p. 241, § 1; Stats.1927, c. 830, p. 1600, § 1.

#### Cross References

Deeds for city taxes, see Government Code § 43004.

Effect of deed as prima facie evidence, see § 2517.

Statute making one fact prima facie evidence of another fact as establishing rebuttable presumption, see Evidence Code § 602.

COMMENTS ON BEHALF OF CITY OF RENO, THE CITY OF LAS VEGAS, THE NEVADA LEAGUE OF CITIES, AND THE LOCAL GOVERNMENT PURCHASING STUDY COMMISSION REGARDING ASSEMBLY BILL 395 - REQUIRING THAT ACCOUNT BE TAKEN OF TOTAL COST OVER THE PERIOD OF USEFUL LIFE OF ITEMS AND EQUIPMENT PURCHASED BY LOCAL GOVERNMENTS

Mr. Chairman and Members:

For the record I am Steve Tapogna, speaking in opposition to the mandated use of Life Cycle Costing by legislative action.

Life Cycle Costing is a specific tool for selective use in purchasing and should not be mandated by legislative action.

This bill, if passed, would open possibilities for numerous challenges, difficulties in uniform application, and potential manipulation when weighted bid evaluations are used.

The effect of AB 395 would be phenomenal within the outer areas of our state, particularly in the smaller political subdivisions, and enforcement and administration of this type program would be next to impossible.

It should be noted that when evaluating those items considered applicable to the model procurement code (written by the American Bar Association) Life Cycle Costing was referred to as a tool, not an item of legislation.

Another difficult area to deal with is the using of data furnished by the federal government. A major example is the use of EPA "estimated" gasoline mileage. The "estimated" figures furnished by EPA are hotly contested by the local new car dealers and rightly so. EPA attaches so many disclaimers to their estimates that it results in an end product virtually useless.

With reference to the items listed in the bill, one of the top Life Cycle Costing Energy Management Consultants in the United States, Mr. Edmund A. LoBlanc, stated through the Federal Trade Commission, Federal Register Volume 44, No. 224, in November 1979, "many items do not apply and should not be applied to Life Cycle Costing formulas". Examples of those stated items are heating equipment other than oil furnaces, television sets, kitchen ranges and ovens, clothes dryers, humidifiers and de-humidifiers. Exceptions were made based upon the amount of energy consumed, i.e., electric heating units that consume 100% of the electrical current provided and based upon American National Standards Institute standards for products which use gas and other forms of energy.

The federal government has reached the point of declaring a moratorium on all energy related directives due to the absolute complexity as well as contradictions in existing energy saving legislation.

If the idea of Life Cycle Costing interests the committee it would be our suggestion that the Legislature encourage the use of Life Cycle Costing and total cost bidding as a basic purchasing tool to be used at the election of the public body when practical.

As stated previously we, in the the procurement field, recognize the usefulness of Life Cycle Costing in certain applications and encourage its use as a technique or tool within our profession.

Thank you very much.

## Life Cycle Cost Evaluation Methods

While energy and money are rapidly becoming synonymous, one cannot yet ignore other costs in the interest of energy efficiency. When choosing a lighting system or a replacement lamp, it is important to consider all the costs involved including, of course, the cost of energy.

Cost of Light Method: In order to determine which lamp or light source will provide the most light for a dollar, the following formula for the cost of light factor (CLF) can be used.

$$CLF = \frac{\text{Lumen Output} \times \text{Rated Lifetime (Hrs)}}{\text{Total Lifetime Cost (\$)}}$$

The units of the cost of light factor are lumen-hrs per dollar. The CLF measures the amount of light produced for each dollar of the total lifetime cost (TLC) of operating the lamp. Thus, the largest value of CLF indicates the best buy. The TLC in dollars is calculated as follows:

$$TLC = PP + MC + \left( \frac{\text{Lamp Wattage} \times \text{Lifetime}}{1000} \times R \times CAF \right)$$

where: PP = Purchase price  
MC = Maintenance cost to change lamp  
R = Electric rate in \$/KWH  
CAF = Cost adjustment factor

The last term in this expression calculates the cost electricity to operate the lamp for its rated lifetime in hours. When comparing lamps that require ballasts for their operation to lamps that do not, the lamp wattage in the above formula should include the electrical consumption of the ballast. For simplicity, the cost adjustment factor (CAF) may be set equal to one. The CAF is included in the calculation to discount the future costs of electricity to their present value. It also allows consideration of escalating electric cost. The CAF is calculated as follows:

$$CAF = \frac{PVF}{n} \times \frac{(1 - PVF^n)}{(1 - PVF)}$$

where: n = Lifetime of lamp in years

$$PVF = \text{Present value factor} = \frac{(1 + i_1)}{(1 + i_2)}$$

where:  $i_1$  = Escalation rate of energy costs

$i_2$  = Discount or inflation rate

The lifetime of the lamp in years (n) is taken to be equal to one for lamps with a rated lifetime less than the

estimated number of operating hours a year. For longer lived lamps the rated lifetime in hours is divided by the estimated number of operating hours a year to derive the value of n.

This calculation will be used as the different lamp types are discussed to evaluate their cost/energy efficiency. The following variables have been determined to be characteristic of lighting operations for the State of Illinois and will be used in all CLF calculations in the remainder of this report.

Maintenance cost (MC) = \$1.60/bulb change  
 Electric rate (R) = \$0.04/KWH  
 Escalation rate ( $i_1$ ) = .11 (11% cost increase a year)  
 Discount rate ( $i_2$ ) = .10 (10% a year)  
 Hours of operation a year = 3300 hrs/yr

Yearly Operating Cost Method: The yearly operating cost is similar to the total lifetime cost (TLC) used in the previous method. It considers purchase price, maintenance costs and electrical cost but on a yearly basis rather than over the lifetime of the lamp. This method can be used on a single lamp as is the cost of light method, but may also be used to compare systems with different numbers of lamps. The yearly operating costs (YOC) are calculated as follows:

$$YOC = \text{Lamp cost} + \text{maintenance cost} + \text{electrical cost}$$

The lamp cost and the maintenance cost reflect the average number of lamps required to provide one year's service. This number is estimated as follows:

$$\text{No. of lamps/yr} = \frac{\text{Hours of operation/yr}}{\text{rated lifetime}} \times \text{No. of lamps in system}$$

The number of lamps is multiplied by the purchase price to obtain the lamp cost, and by the labor cost to change a lamp to obtain the maintenance cost. These reflect the costs of replacing lamps during an average year of operation.

The electrical cost is calculated according to the formula below:

$$\text{Electrical cost} = \text{Hrs of operation/yr} \times \frac{\text{Lamp Wattage} \times \text{No. of lamps In System}}{1000} \times \text{Electric rate (\$/KWH)}$$

The YOC method evaluates the average yearly operating cost in dollars for a light system. Unlike the CLF method, the YOC does not include lumen output. Before comparing different systems with this method, it must be determined that each system provides similar and adequate lighting levels.

Examples of the YOC method will be given in the section on relamping.