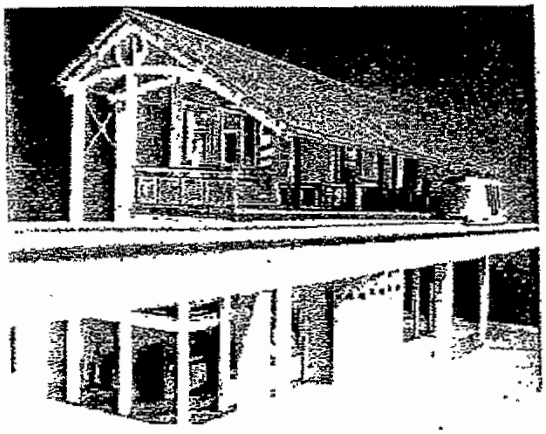
HORIZONTAL ELEVATORS

Continued from earlier

US $20 million of its own to build and manage a 1-km (.6-mile), one-station PRT track outside Boston. This will assess an engineering concept aimed at personalized, direct-to-station, taxi-like service over a lightweight network. Raytheon and Swiss-owned Intamin performed cost engineering studies of PRT concepts for the RTA for US $1.5 million each.



In 1995 or 1996 a decision will be made whether to build a 4-km (2.5-mile), eight-station, 50-vehicle PRT for Rosemont, estimated to cost US $42.3 million. Rosemont lies at the gateway to O'Hare Airport and is home to more hotel rooms and meeting facilities than residences. The impact of this program will extend far beyond Chicago and Rosemont. It made the front page of the *Boston Globe* and is being closely watched by PRT enthusiasts and skeptics around the world.

Swedish PRT Study Enters New Phase

The Swedish Transport Research Board (TRB) is funding studies of the socio-economic and visual effects of a PRT already analyzed for the small city of Gavle (population 76,000). This US $60,000 effort will include planning models and architectural studies as well as analysis of time saving and reduced pollution. Ingmar Andreasson, whose initial analysis concluded that capacity was not a problem with assumed 1.6-second headways, will now define a workable first phase from the 93-station, 120-km (75-mile) network.

Andreasson is pioneering new concepts for high-speed sections and "point-synchronous" controls to overcome problems of synchronous and asynchronous concepts. He is also involved in a US $2-million study for Gothenburg: a 700-km (435-mile), 674-station network is envisioned! Officials are leaning away from a proposed heavier APM ring toward enhancing the city's extensive light rail lines with PRT.

And Elsewhere

Environmental and engineering studies of the SeaTac PRT have been delayed. Local and Seattle regional officials had applied for federal air quality management funds through the Federal Highway Administration. The Federal Transit Administration (FTA) recognized this as a transit project and demanded they restart the process with Seattle's transit agency. A nearby Boeing plant is also exploring a PRT connector to a planned commuter rail station.

Cobb County in Georgia, and Fresno and Irvine in California, are considering PRT as possible modes in their futures. There is a pocket of PRT planning outside Amsterdam Airport, but no known interest at present exists in England, France, Germany or Japan.

AND MORE THEME PARKS

Despite EuroDisney's financial problems, new theme parks continue to be proposed around the U.S. and elsewhere in the world. Many will include automated people movers (APMs) for viewing, fun and logistics, such as to serve remote parking. Plans may not be detailed enough or public enough to reveal.

Outside Atlanta, Georgia: "Gone with the Wind" will be the theme of a 250-ha (620-acre) park in one of three counties vying for this project proposed by Georgia Holding Inc.

Cape Cod's Dreamworld: "Virtual reality" attractions would dominate New England's largest theme park, if proponents talking with investors and local officials in the towns of Plymouth and Bourne on the edge of Cape Cod succeed.

Las Vegas, Nevada: MGM and Bally's have announced a US $15-million, 1.6-km (1-mile) "monorail" that AEG-Von Roll might supply. Is it real or is it publicity? Developers hope it could be extended from the airport all the way downtown as public transport.

New Jersey: Controversial developer Donald Trump and others are proposing a US $50-million amusement complex and US $18-million "monorail" ride away from the Meadowlands sports complex.

Reno, Nevada: Circus-Circus has launched a US $230-million themed casino resort in downtown Reno. An APM element is not likely.

Tokyo, Japan: Video game maker Namco last year opened Wonder Eggs park devoted to their games. A string of such parks is planned across Asia: Osaka next year, Singapore the next.

Universal Studios: MCA expects to build a sequel to its Hollywood and Florida parks in Europe or Japan, perhaps Osaka. A US $80-million "entertainment zone" is also being built at a marine complex near that city. □

Lawrence Fabian is an internationally-known expert in advanced transit technologies, particularly automated people movers (APMs). He chairs the subcommittee on Activity Center Circulation of the Transportation Research Board and is vice-chairman of the APM Committee of the ASCE. Fabian also publishes a bimonthly newsletter, a biweekly faxed advisory service, the APM Industry Guide and other APM-oriented material. Contact Trans21, P.O. Box 249, Fields Corner Station, Boston, MA 02122; tel: (617) 825-2313, fax: 617-482-7417.

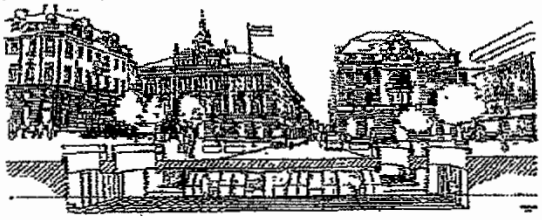
01216

HORIZONTAL ELEVATORS

by Lawrence Fabian

AFFORDABLE TRANSIT SERVICE

The regional bus operator of Uppsala, Sweden, a university city, has completed an 800-m stretch of track; preliminary APM testing has begun. It is working with local companies to develop its own controls which have PRT-like capabilities. A 30-passenger vehicle is being run. So far, a budget of almost US $2 million for a 30-month program is in place. Their main focus is to create premium transit service at an affordable price.



An early APM vision for Uppsala included a slightly subterranean station in the central area of this Swedish university city. Sketch courtesy of AB Uppsalabuss

TORONTO SEARCHES FOR AN APM-LAND VALUE FORMULA

In 1991, a "royal" commission was formed to study potential improvements to the waterfront of Toronto, Ontario. Chaired by a former mayor, it published an exciting vision that disappeared during an economic recession. A trust, however, was formed. With Bombardier input, it managed to examine the feasibility of a 5-km "monorail" connection.

To the east of downtown Toronto, a streetcar has been put into service. The commission also has been looking to the west. One possibility is to extend the trolley. What are the other options? What are the best funding strategies? Consultants IBI were hired to sort out these issues. Preliminary cost estimates have been obtained from Bombardier and Adtranz.

With strong private support, this vision may go forward. Can an acceptable formula for sharing the costs and benefits of an APM be devised? The next step for the Toronto Waterfront would be a more detailed cost/benefit study.

DIVERSIFYING US $6 BILLION PIPELINE

Trans21's annual compilation of APM projects shows signs of heightened levels of activity, especially for smaller installations. In 1996, the number of active projects jumped to 44, up from 36 at the end of 1995. The dollar total rose only slightly from US $5.9 billion to US $6 billion (systems cost only).

Even more remarkable is the spread to countries without previous APM experience. Today, APM implementations can be found in China, Malaysia, Italy, Switzerland, Finland and Portugal. It can truly be said that APMs have become a global phenomenon.

The greatest growth comes from those projects categorized as institutional – APMs being built to serve more than a single property, but not by the mass-transit operator of that area. There are now 16 institutional projects (plus three test tracks) compared to 10 (plus two test tracks) in 1995.

New Institutional Arrangements

Institutional APMs are found in resort areas, theme parks, casino complexes, universities and special development districts. Many new financing and public-private arrangements that take advantage of high levels of APM service are to be found in such settings. This is the forefront of APM development.

The tiny Mystic Center project outside Boston, where a US $3 million shuttle is a linchpin to an innovative Park + Ride scheme, is a very promising example. A public-sector promise to lease parking spaces allows a private entity to build a garage. The government needn't front the money or float bonds, and the private owner gains better transit access for office development.

Other large-scale examples are the Copenhagen Orestad line and the JFK International Airport access projects, considered institutional because they are not being implemented by mass-transit agencies. If they are excluded, the average cost of an institutional APM is US $22 million.

Architectural and Transit Projects

The average cost of an APM of architectural scale – one wholly within a single property – is US $33 million. Almost all are in airports. Requirements to carry substantial flows of passengers, often around the clock, with high reliability increase the costs.

As might be expected, even higher costs are to be found in fully automated mass-transit projects. The average transit-scaled APM is almost US $350 million. Especially when these are built underground, the addition of civil engineering work raises total costs to the billion-dollar project level, which is not uncommon in the world of mass transit.

TRANSIT-ORIENTED DEVELOPMENT

Coordinating land-use development with transportation is not new; it is at the heart of traditional city-planning theory and practice. In the U.S., accommodating the sprawling effects of freeways and cars and the isolation of U.S. mass-transit planning have worked against transit-oriented development. Most of our cities are pedestrian and transit unfriendly.

In reaction, there is growing interest in the more compact, sidewalk-oriented neighborhoods of the past – a movement which has been dubbed neotraditionalism. One of the best known proponents is California-based Peter Calthorpe.

Searching for What We Had

Last fall, two separate, but related, mini-conferences were held in Boston, Massachusetts on this topic. The first was organized by the Conservation Law Foundation and entitled "Building Livable Communities Through Transportation." The conference drew an overflow crowd.

In mid-November, Boston's Metropolitan Area Planning Council (MAPC) held a workshop on "Transit-Oriented Development

Continued ▶

HORIZONTAL *Continued*

(TOD)." It, too, was oversubscribed. Boston already knows what TOD is. Experts and advocates across the country use slides of Boston as examples; however, much is gone. The real question is how to overcome forces against TOD and regain what was lost.

MAPC invited Peter Calthorpe as keynote speaker. While not delving into the quantitative issues of densities and parking demand, he argued convincingly for packing density around light-rail stations. He is open to APMs, saying, "There are possibilities for new technologies."

Resource Guidebook Available

California's Local Government Commission (LGC) has produced a guidebook on TOD. It is full of examples, background information and reference material with contact numbers. The 77-page document can be purchased for US $20. For ordering information, contact LGC at phone: (916) 448-1198, or fax: (916) 448-8246. ❑

Mystic Center Progress Report #1

In ELEVATOR WORLD's December 1996 issue, in the "Horizontal Elevators" column, it was reported that Otis Elevator Company signed a US $3 million contract to develop an extension on the Massachusetts Bay Transportation Authority's (MBTA) Orange Line. As reported, the project provides a new lighter line of APMs — the Otis SkyRail™ — linking a newly constructed parking garage and office complex with Wellington Station. The goal of the Mystic Center is to provide an effective alternative to driving into downtown Boston during Central Artery construction. The center will assist in alleviating some of the commuter congestion on Interstate 93's northern corridor. Our Boston correspondent, Larry Fabian, was present at the groundbreaking ceremony and some photos from his visit accompany this update. Fabian will monitor the construction of this APM project, furnishing photos and descriptions of the developments. ELEVATOR WORLD will periodically publish these updates, as they come in from Fabian.

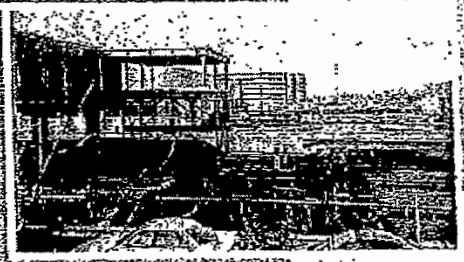


Photo One – Mystic Center is named after the Mystic River, which passes north of Boston and Cambridge. It is a scene of sprawl in the suburb of Medford. Photo Two – The parking garage can be seen in the background with the MBTA terminus skeleton kissing the rapid transit station in the foreground. Photo Three – In May of 1996, ground was broken. Massachusetts Governor Weld (at left), the mayor of Medford (at right) and developer (middle) discuss the scene to be created. Photo Four – Otis Project Manager Frank Barea stands before the parking garage, 900 feet from the MBTA station that the APM will link to. The station will be at the third level of parking, served by two elevators, with room for a third. Photo Five – Footings for the APM columns have to be carefully spaced between rail track, on their way to the shuttle terminus at the MBTA rail station.

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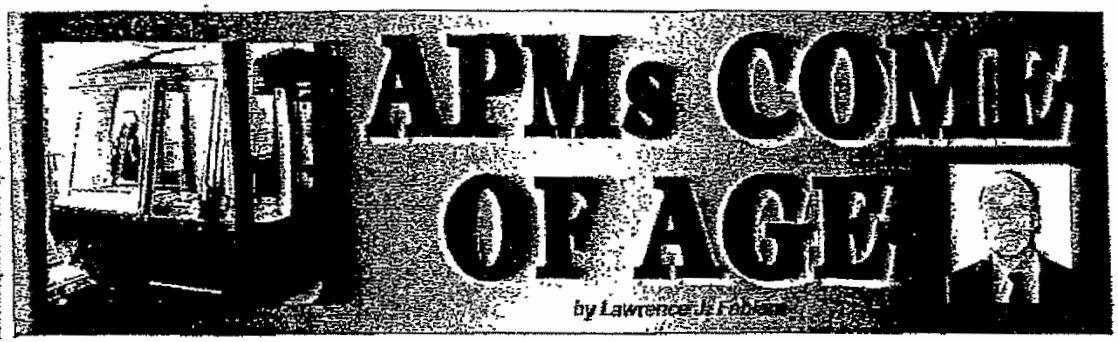


APMs COME OF AGE

by Lawrence J. Fabian

Sometimes we move up; sometimes we move over. Today's building complexes extend beyond tolerable walking distances and can benefit from an interesting new menu of people-moving options. Include parking and transit access, and the possibilities of using automated people movers (APMs) become even more interesting.

As the power of microchips, logic controls and computers has crept into almost every facet of modern-day life, it is not surprising that elevators have become more intelligent. It doesn't take a rocket scientist to flip an elevator over on its side to expedite horizontal movements.

Horizontal elevators, horizontalators, shuttles, people movers, automated people movers—APMs; call them what you may. Several brands of driverless APM systems exist that run spiffy vehicles inside buildings and out over guideways between. Such guideways are light and quiet compared to the Chicago El. They may dramatically change the way "Edge City" inhabitants around the world go about their business.

Heavier, more expensive APMs cost $30-70 million per kilometer, putting them out of range of all but flamboyant Dallas developers and capacity-constrained world airports having good cash-flow situations.

Lighter versions of APMs carry fewer people. Even lighter versions have been designed specifically to link distances of only a few kilometers, even less. A three-kilometer (two-mile) loop with three or four stations is not uncommon. In fact, French transport researchers have created a new term for them—*hectometrique*. The term "hectometric" means of, or pertaining to, one-hundred meters (325 feet) or so, perhaps three, or even five hundred. In such settings, it makes economic sense to have vehicles as passive as possible. System costs can be as low as $5-10 million per kilometer. Some inventors claim that $1-2 million should be enough.

Where Does an APM Make Sense?

Where, beyond downtown, high-rise buildings, do elevators exist? Where twenty or so elevator groups are in close proximity but beyond reasonable walking distance, an APM makes sense. Imagine a large medical or educational complex. It needs to expand and has no adjacent space. The only nearby sites are badly needed parking lots and garages. Displacing them would be poking into a hornet's nest of institutional politics. This is not an uncommon dilemma for institutional planners.

About 20 years ago, planners at Duke University Hospital in Durham, North Carolina devised a remote expansion with a horizontal elevator integrating the new with the old facility. This avoided the need to duplicate many services in the new facility, and also created a link with a remote parking garage. The APM at Duke, supplied by a division of Otis Elevator Co., has been carrying staff, patients, visitors and hospital supplies since 1980.

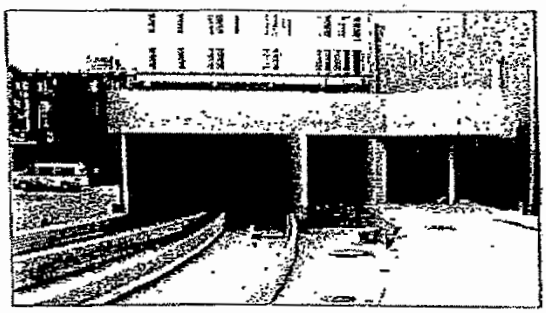
Large universities may have an even greater need for horizontal mobility. For example, Ohio State University (OSU) in Columbus, Ohio has over 50,000 students, a staff of over 10,000 and a massive parking nightmare. OSU has vast acreage on one side of a river, while on the other side along High Street, a congested, parking-starved concentration of academic facilities at its main precinct suffocates. How can it make

Continued >

Number of Operating APMs by Setting
Fall 1994

URBAN MASS TRANSIT	18
Line-haul in major corridor	8
Feeder to line-haul	8
Local circulation	2
AIRPORTS	20
Terminal-to-terminal	15
Terminal-to-parking, transit, hotel, etc.	5
LEISURE SETTINGS	22
Private theme parks	7
Zoos	5
Fairgrounds	1
Casino complexes	6
Other	2
INSTITUTIONAL	18
Special public/private entities	6
Universities	2
Shopping malls	3
Hospitals	2
Other	5

Source: Transit



Gentle curves grace the APM guideway as it approaches the Duke University Hospital in Durham, North Carolina. It carries patients, staff, visitors and supplies to a new facility and remote parking.

expansion sites on the far side more desirable to jealous academics and grumbling students? Planners are looking at a "monorail-type" solution to integrate the two river banks and link to a light rail line that the city of Columbus has proposed.

APMs have found a solid and growing niche in the world of airports, with 15 systems already operational. The APMs connect sprawled airport terminals and allow space for huge aircraft to maneuver on runways. Several more airport projects are underway, with dozens more in the planning stages.

Air travel grows about 6% a year worldwide, creating pressure to enlarge existing airports. Some areas must create new facilities, such as the recently opened airport (with an APM) outside Denver (see ELEVATOR WORLD's July 1994 issue). It is no exaggeration to say APMs have revolutionized the manner in which airport planners work. Attention is now turning to adjacent, off-airport development and regional ground access.

Expansion is often a problem in office complexes and retail malls. Compaq Computer's world headquarters for administration, manufacturing and distribution are located at a huge corporate campus outside Houston, Texas. The corporate philosophy places great value on its high-tech employees, facilitating the cross-fertilization of their creative intellects. With major expansion imminent, it is considering a sophisticated APM.

"Edge Cities" are growing on the periphery of our metropolitan areas. These are the brave, new worlds of urban life. Typically, a few major office and retail developments emerge around a major intersection of interstate highways, often near an airport. Then, more office centers are added, and perhaps, an apartment complex or two. Soon, this interstate interchange has all the makings of a city: a high population density, traffic congestion and parking problems. But it doesn't look like what is traditionally recognized as a city. There is no urban culture and no way to travel from A to B without jumping in a car and weaving through ramps and intersections, ultimately walking through a large parking lot.

"Edge City" Expert Joel Garreaux feels the challenge of the 1990s is to diversify the mix of activities in these suburban nodes, facilitating the way people move around, bumping into old friends and making new ones along the way. APMs can enliven the sometimes sterile plains of the "Edge City," making life in the 21st century a bit more meaningful. To say this will translate into high real-estate values for the trailblazers would not be misleading.

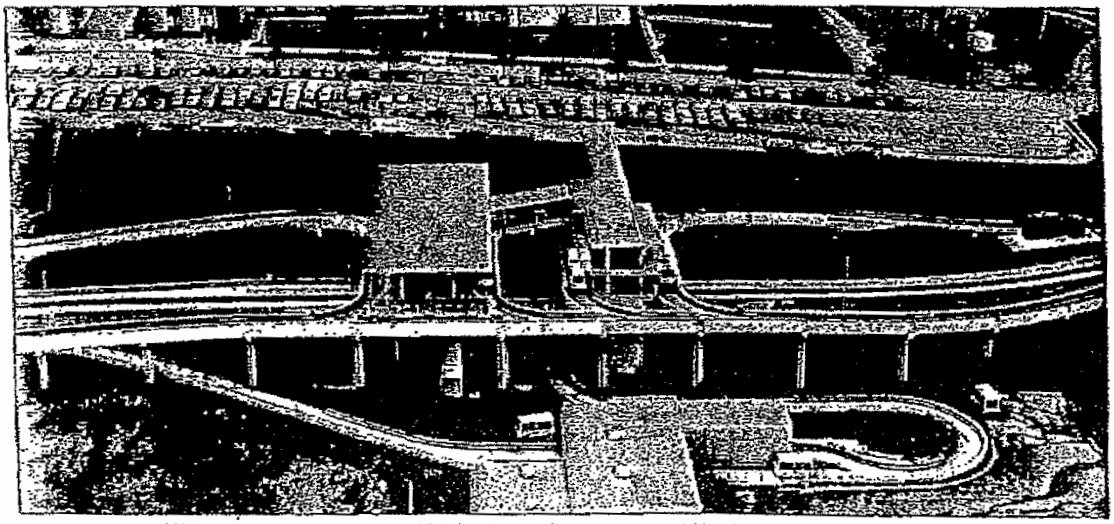
The other place where APMs can fit in is where an owner or developer seeks to combine transportation with an experience. Does a commercial complex have interesting vistas that would draw extra visitors? Are there narrative messages, such as the history of the areas, which can be conveyed to visitors? Is a special identity for a mall or office park desired? An APM might satisfy enough of these desires to make its installation worthwhile. APMs have already found niches in zoos, world expos and flower shows.

Are people looking to be entertained or thrilled as they ride along in an APM? A recent spate of projects has emerged in casinos. Las Vegas, alone, hosts five systems, plus another two at the airport and at Whiskey Pete's on the California state line. In addition to transportation, can passengers be sold telephone or computer time? Want to advertise what's available at the next station? This may attract more passengers and help pay the cost of the APM.

When a Moving Walk? When an APM?

The desire to provide a means of transportation over short distances is not new. Public and private organizations have been operating shuttle buses in thousands of locations for decades. The problem: operating costs are fairly high, and the level of service fairly low. Light-duty vans can cost upward of US $50,000. Heavy-duty buses are closer to US $200,000 each. The ride is often uncomfortable, and buses contribute to air pollution. Battery-powered vans are even more expensive, and recharging is awkward and time-consuming.

Bus or van shuttle services are limited by the availability and cost of drivers. To passengers, waiting five minutes can seem like fifteen, especially when they only seek to go a kilometer or so. The layout and congestion of the roadways to be traversed also have a major impact on the quality of service. If a thousand people want to travel over the course of an hour, at least 30



In some ways, the old Morgantown People Mover at West Virginia University shown here is a model for planners at Ohio State University in Columbus to connect their congested main campus to remote expansion and parking sites.

"turns" have to be made. This increases operating costs dramatically. Service is also slowed as individuals climb in and out of vehicles. Vans get in each other's way. Higher volumes require for another kind of people-moving solution.

In some cases, high passenger volumes over fairly short distances may be better served by moving walkways. These continuous people-conveyors are horizontal versions of escalators, and generally, walkways move at not more than five kilometers

Even at its best, bus shuttles offer a modest level of service. When demand surpasses 1,000 passengers/hour, an APM may be a cost-effective alternative.

per hour (three mph) – about the speed at which most people walk. Individuals walking on moving walks can double their travel speed. Practically, a moving walkway should not extend more than one hundred meters. Longer distances can be served by stringing units together along a corridor.

Some moving walks use rubber belts. More expensive units (about 50% higher) use metal "pallets". The unit's cost depends on length. A pallet-version of about 50 m (165 ft) comes out to about US $6,000/m (US $1,800/ft). A larger installation of about 150 m (500 ft) would cost about US $4000/m (US $1200/ft).

Technology is not the major barrier to higher speeds, rather, the safety of individuals stepping on and off the moving walkway. Several attempts have been made to create walkways that accelerate. None has yielded a system that shows promise at

Moving walks assist pedestrians but are limited in length and speed.

reasonable cost. Some work in this area continues, but it is unrealistic to expect that moving walks could ever go much beyond 15 km/hr (10 mph), at any cost. Heavy maintenance for an accelerating-type would be a factor.

When neither shuttle buses nor moving walks satisfy the need to move thousands of persons per hour over a distance of a few hundred meters, an APM should be considered. The formal definition of an APM is a passenger transport system in

The German H-Bahn uses vehicles suspended from the guideway rather than running atop. A similar system has operated at Dortmund University for years.

which relatively small vehicles run over exclusive guideways with enough electronic intelligence that neither the vehicles nor the stations require attendants. Some mistakenly use the term "monorail" interchangeably with APM. However, the emphasis should be on the electronic smarts rather than aspects of the vehicle/guideway interface.

Various technologies are used for propulsion and suspension. In some systems, vehicles run atop guideways, while in others, cabins are suspended from guideways. Although guideways can be built underground, or – in special circumstances – at grade, they are generally designed to be elevated. Guideways and stations can be integrated into buildings. Vehicle sizes and configurations vary by system, and can be further tailored to specific needs.

There are three basic types of APMs: hectometrics, light guideway and personal rapid transit. The already-described "hecto" is a short-distance back-and-forth shuttle, or perhaps, a slightly longer line with three or four stations. A hecto is really best applied, though, as a modest back-and-forth shuttle with moderate curvature. Often, a single lane enhanced by a short, two-way section in the middle is sufficient and less costly.

With such reduced demands for operations, a hecto can use greatly simplified technology. Major economies can be gained by removing the motor (and its weight) from the vehicles, putting it at one end of the installation and driving a cable attached to vehicles, similar to elevator and gondola technology. Wayside propulsion also removes the need to furnish electric power over the length of the guideway. Power for lighting and HVAC can be supplied by batteries that recharge during station stops.

Light APMs are capable of serving longer distances with multiple stations. A string of stations along a corridor with generous curves and gradients of a dozen kilometers, or even longer (5-15 miles), is possible. Double-guideways for two-way operation are common, but variations exist. One four-station APM with only one lane operates in Austria. One-way loops are preferable and more economical.

Essentially, light guideway systems are an electronically smarter and down-scaled version of trolleys and subways, which public transport specialists call "light" and "heavy-rail"

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transit. Several destination areas are linked into a line-haul corridor. Thousands of passengers are transported (some would say herded) to their station of choice. Of course, they have to stop at every station along the way and rub elbows with scores of strangers.

The slow and non-private service of guideway systems can be avoided with the third type of APM. Personal rapid transit—or PRT for short—aims at taxi-like service over an entire network of guideways. The key is in arranging stations off the main guideway so that stopped vehicles do not block traffic flow. To passengers, this means their vehicle needn't stop at stations along the way to their destination, or be confined to a single corridor in the network. PRT vehicles can be programmed directly to any station in the entire system. Planners can link any number of destinations without concern to string them into a linear corridor.

What Are Your Transportation Needs?

Needs depend upon the circulation patterns in and around the building complex being dealt with. What distances can employees and visitors be expected to walk comfortably? What are their travel needs? What centers definitely need to be served, and where are the best access locations? How to estimate the numbers to use an APM, or one of its alternatives, if a decision is made to install one?

In discussions with APM suppliers, it is easy to move too quickly into design decisions based upon their hardware characteristics. A trend among APM planning consultants is to shift specification writing to performance characteristics. The single, most-important performance variable is capacity. What is the maximum number of people to be transported in a peak hour past a certain point? If it is only 250, an APM is unlikely to be justifiable. Is it 1,000 or 4,000? The number will make a tremendous difference as to whether or not a given supplier can satisfy the needs.

How steady or bunched will the passenger flow be? Surges of several hundred people are common, as when jumbo jets unload at airports, or trains at stations. In such cases, it makes sense to specify capacity in smaller time intervals. For example, a specification might read, "Capable of carrying 1,200 people in 12 minutes," instead of merely providing an hourly figure. In other applications, there will be steadier passenger flows, and specifying an hourly capacity will be sufficient.

Travel needs should be specified in detail. Average wait and travel times address the desired frequency and speed of service. Comfort is covered by specifying maximum allowable acceleration, deceleration, jerk and sway rates. Other items deal with the degree of heating, air conditioning and lighting desired in the vehicles. How much passenger seating should be available?

Measures of service quality should be clearly defined. What levels of service degradation and failure are tolerable? Marathon theoretical debates (and tough legal battles) have been fought over how to calculate "system availability". Alternative measures of "dependability" and "reliability" exist. Measures of "Mean Time Between Failures" and "Mean Time to Restore Service" add to the confusion!

APMs have been quite successful at attaining extremely high levels of service. They are quietly and regularly available for service. Specifications typically call for 99% availability. There may be more problems in defining than in attaining the specified measurement.

What Standards and Information Apply?

New technology and the APM industry are still evolving. Few standards are written specifically for APMs. The National Fire Protection Association (NFPA) ruffled many feathers in the APM community a few years ago by extending standards for rail transit to APMs. Major design complications arose with the requirements of a three-hour fire safety wall between station areas and adjacent buildings. NFPA 130 also requires a constantly present, dedicated person at the APM's control post. Most APM professionals believe this excessive for smaller, simpler systems.

To investigate the feasibility and desirability of setting APM standards, a group of APM professionals launched a study in 1988, are now a formally functioning part of the American Society of Civil Engineers (ASCE) and have published draft standards for APM controls. Others dealing with guideways, stations, vehicles, propulsion and braking, measures of reliability and operating environments will follow, and they have reviewed Australian standards that were published in 1991. It is fair to say that this book is far from closed, and some suppliers and other professionals worry that a premature rush to standardization will stifle innovation.

Las Vegas's Clark County has what seems to be the most developed APM safety codes. These carefully define the procedures that operators must follow in the event of system failure or an accident, which officials should be notified and how soon, and what must be done before the "amusement-and-transportation ride" can re-open to the public.

This APM was one of three quickly installed and now operating in Las Vegas. Visitors glide between two of the casino/entertainment complexes, requiring local officials to enact standards for reporting accidents and safe re-opening.

Many questions must be answered before an APM can economically and safely become part of any building complex's future. Several sources of information on APM planning exist:

- *Characteristics of Urban Transportation Systems*, published by the U.S. Department of Transportation, Federal Transit Administration, Report DOT-T-93-07, revised September 1992.
- *American Society of Civil Engineers*, proceedings of a series of conferences: APMs-I (1985), APMs-II (1989), APMs-III (1991) and APMs-IV (1993). Available from ASCE, New York.
- *Proceedings of the International Symposium on Technological Innovation in Guided Transports*, 1993. Available from INRETS in Lille, France.
- *A Planner's Guide to APMs*, 1994. Available from Trans21, P.O. Box 249, Fields Corner Station, Boston MA 02122.; phone (617) 825-2318; fax: 617-482-7417.

Lawrence J. Fabian is director of Trans21, an information clearinghouse on international APM developments, located in Boston, Massachusetts. He has over 25 years of urban planning experience and publishes a newsletter on APM developments.

Author Lawrence J. Fabian will be on hand in one of the "Meet the Author" rooms at the National Association of Elevator Contractors' World Elevator Expo '95 on October 6-11, 1995 in Boston. He will make a few short remarks concerning his paper, updating if appropriate. Thereafter—for 30 minutes – he will answer questions from the attendees, or guide discussion of the subject. Copies of this paper will be available prior to the gathering. *... Editor*

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Date 12/11/12
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APM Standard ASCE 21

by Lawrence L. Smith, PE

The American Society of Civil Engineers (ASCE) Automated People Movers (APM) Standards Committee met in Dallas on January 18-19 and resolved to further its commitment to alert elevator-industry allies regarding safety concerns and the APM Standard ASCE 21. There appears to be misunderstandings of the APM standard within parts of the elevator and APM communities, and how the standard conflicts with the intent of the so-called "Model Elevator Code" (MEC) as promulgated by the Elevator Industry Work Preservation Fund (EIWPF). The EIWPF MEC calls for elevator contractors and inspectors to take over jurisdiction of design, construction, operation, inspection, maintenance, alteration and repair of APMs, and that conflicts with the requirements of ASCE 21, which establishes a minimum set of requirements necessary to achieve an acceptable level of safety and performance for an APM system.

ASCE 21 was created by a consensus process including balloting by a balanced standards committee made up of ASCE members and nonmembers, balloting by the membership of the ASCE as a whole and balloting by the public. The ASCE has requested that the EIWPF simply remove the pasted-in addition of APMs, and the traditional MEC would remain a viable elevator safety code for states.

ELEVATOR WORLD is well known for promoting safety and has a commanding reach in the elevator industry; therefore, the ASCE would appreciate the publication of the following letter which has been sent to state professional engineering boards and APM regulatory agencies in the U.S. This can help draw attention to the issue and stimulate a dialogue within the industries to prevent any misuse or misunderstanding of ASCE 21, and ASME A17.1 and A17.3.

Lawrence L. Smith is secretary for ASCE's APM Standards Committee.

I am including herein the complete position letter. This was developed after corresponding with the managing director of Codes and Standards for ASME regarding ASME QEI-1, and careful analysis of provisions of ASCE 21 and the EIWPF's MEC.

Letter to Professional Boards & Regulatory Agencies
December 6, 2006

Subject: Issues Related to Design, Construction and Inspections of Automated People Mover Systems.

Many states utilize American Society of Mechanical Engineers (ASME) A17.1, the ***Safety Code for Elevators and Escalators*** *and ASME A17.3, the* ***Safety Code for Existing Elevators and Escalators*** *as their primary, if not total, regulatory requirement for such equipment. As a result of the ongoing careful attention rendered by the professionals on the A17 Standards Committee, these safety codes have achieved an exceptional level of acceptance and are highly regarded by designers, manufacturers, users and regulators.*

In the past few years, the "Elevator Industry Work Preservation Fund Serving the International Union of Elevator Constructors" has been advocating the states, with considerable success, to adopt supplemental elevator safety regulations using, as a basis, a "Model Elevator Code" (MEC) developed by this group. This MEC draws extensively on the various ASME codes pertaining to elevator/escalator safety, including ASME QEI-1, ***Standard for the Qualification of Elevator Inspectors.*** *To the extent that such activity reinforces the safety theme of the ASME codes, the various groups involved in promoting and implementing the MEC should be commended.*

However, the MEC covers not only elevators, escalators and moving walkways, but also Automated People Movers (APMs). With regard to safety and performance requirements for APMs, the MEC cites ASCE 21, Automated People Mover Standards, which has been developed under our organization's aegis. The Automated People Movers Standard committee of the American Society of Civil Engineers (ASCE) certainly has no concern with the MEC promoting adoption of our APM standard by the various states. However, a review of the language contained in the MEC does disclose a serious safety concern in that construction, inspection and maintenance aspects of "automated people movers" have been lumped in with the requirements for elevators,

01223

escalators, and other related equipment covered by the aforementioned ASME codes. Quoting from the MEC, ***"It shall be the responsibility of the owner of all conveyances to have a licensed Elevator Contractor, as described herein this chapter, insure that the required tests are performed at intervals in compliance with the ASME A17.1, ASME A18.1 and ASCE 21."*** *Nowhere in the ASME A17, ASME A18 or ASME QEI-1 Codes is there any suggestion of addressing any equipment other than elevators, escalators, platform and stairway chair lifts, dumbwaiters, material lifts and moving walks, yet the MEC states (through inclusion) that only a QEI, certified within the ASME QEI-1 parameters, shall be allowed to inspect Automated People Mover Systems during their design, construction, operation, inspection, testing, maintenance, alteration and repair.*

An individual who has achieved QEI status most likely has skills which could be helpful in becoming an APM inspector, but the implication that elevators and APMs are technologically the same is seriously flawed. To cite simply one or two key differences, APMs can be free running, with headway and switching safety issues not of concern to elevators or escalators. Also, APMs can operate in trains which generate buffing loads and coupling/uncoupling safety issues. ***These related but vastly different conveyances require technology specific safety standards.*** *We view the extension of the use of the ASME QEI process to APMs as a gross misuse/abuse of professional standards which poses safety concerns for virtually any APM system and will conflict with inspection, maintenance and testing requirements presently being developed by the ASCE APM Standards Committee.*

We have transmitted these concerns to the ASME. William Berger, ASME managing director, Technical Codes & Standards has concurred in a letter of August 3, 2005 (copy attached) ". . .that the ASME QEI-1 Standard for the Qualification of Elevator Inspectors is not intended to apply to inspectors who are conducting inspections of equipment that are covered under the scope of the ASCE 21 Standard on Automated People Movers."

The standards developed by our committee ". . . establish the minimum set of requirements necessary to achieve an acceptable level of safety and performance for an APM system." (ASCE 21, Foreword). Because of our mutual responsibility for the safe operation of APM systems we are providing you with the above information to guide in any deliberations with regard to incorporating the MEC into any proposed state legislation.

Jonathan C. Esslinger, P.E.
Director, Transportation & Development Institute of ASCE

Exhibit No. 4
Witness Murphy
Date 12/11/12

McCARRAN CAREERS

Airport ATS Technician I/II

Class Code: N24329

WD CCR# 711

Bargaining Unit: General

CLARK COUNTY DEPARTMENT OF AVIATION
Revision Date: May 23, 2011

SALARY RANGE

$17.08 - $26.44 Hourly
$1,366.40 - $2,115.20 Biweekly
$2,960.53 - $4,582.93 Monthly
$35,526.40 - $54,995.20 Annually

JOB SUMMARY/CLASS CHARACTERISTICS:

Performs semi-skilled and skilled work in the maintenance and repair of the Airport's Automated Transit Systems (ATS).

EXAMPLES OF DUTIES:

Performs unskilled and semi-skilled electrical, mechanical, electro-mechanical and pneumatic work in the operation, maintenance and repair of the airport's automated transit systems. Tests, documents and maintains logs and records related to the operations and maintenance of the ATS systems. Troubleshoots complex ATS system and subsystem components to identify problems or failures and implements repairs. Conducts pre-defined inspections on the ATS systems and subsystems to ensure they operate in accordance with design. Maintains and services a variety of test equipment and hand and power tools; keeps inventory of frequently used supplies and hardware; conducts periodic inventory audits. Maintains records of work performed and materials used. Estimates materials, tools and equipment needed for work assignments. Loads and unloads trucks, picks up and delivers materials and equipment, cleans and maintains tools and equipment, and maintains work areas in a clean and orderly condition. Operates and adjusts a variety of hand and power tools and equipment common to maintenance and repair activities. Conducts safety and technical training on ATS related systems and subsystems as assigned; troubleshoots problems and repairs as required. May operate light equipment and drive a truck as assigned. Observes safe work methods and uses safety equipment; attends safety training, technical training and meetings. Utilizes an automated maintenance management system (Maximo) to record and document work performed. Carries out assignments in a non-disruptive manner in areas receiving heavy public use; responds to questions and comments from the public. Cleans trash and other debris from tram guideways, tunnels, stations and maintenance areas.

QUALIFICATIONS:

Knowledge of: Airport ATS Technician I: Electronic, mechanical, electro-mechanical and pneumatic systems, subsystems and components related to automated transit systems; use and minor maintenance of commonly used hand, power and general maintenance tools and equipment; safe work methods and safety regulations pertaining to the work; basic record keeping practices.

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Airport ATS Technician II: Transit vehicle and wayside systems and subsystems; and methods and materials used, and techniques for operating, maintaining and repairing automated transit systems.

Skill in: Airport ATS Technician I: Safely using and maintaining hand and power tools related to the work; reading and interpreting plans, maps, drawings, schematics, manuals and instructions; understanding and following oral and written directions; preparing basic records and reports of work performed; working without close supervision in standard work situations; contributing effectively to the accomplishments of team or work unit goals, objectives and activities.

Airport ATS Technician II: Performing general ATS maintenance work, individually or as a member of a crew/team; diagnosing electronic and mechanical failures; using initiative and independent judgment within established procedural guidelines.

PHYSICAL DEMANDS:

Mobility to work in a typical shop or related maintenance setting, including operating typical trade equipment, hand and power tools and standard office equipment, and to drive a motor vehicle to various work sites; stamina to stand, sit, walk, balance, stoop, kneel, crouch, crawl and climb and to work in confined or awkward spaces for an extended period of time; strength to lift and maneuver materials and equipment weighing up to 100 pounds with proper equipment; vision to read printed materials and a computer screen; color vision and depth perception; hearing and speech to communicate in person or over a radio or telephone. Accommodation may be made for some of these physical demands for otherwise qualified individuals who require and request such accommodation.

REQUIREMENTS:

Airport ATS Technician I: Equivalent to graduation from high school and six (6) years of mechanical, electro-mechanical, electronic and pneumatic experience. An apprenticeship in any of these areas will substitute on a year to year basis for experience.

Airport ATS Technician II: In addition to the above, two (2) years of maintenance and repair experience, in the area of automated transit systems.

Licensing and Certification: Must possess a valid Class C Nevada driver's license at time of hire.

Residency Requirement: Permanent employees must maintain a principal place of residency within the boundaries of Clark County and provide proof of compliance with Nevada motor vehicle registration and drivers' license laws within 90 days of employment.

Background Check: Employment with the Department of Aviation is contingent upon completion of an education/experience background investigation, a fingerprint-based criminal history record check processed by the FBI, and upon the ability to be granted a security badge as mandated by the Transportation Security Administration. Note: all prospective hires must present two original government issued ID's upon acceptance of job offer. Examples of acceptable ID's include a Passport, Driver's License or DMV issued ID, birth certificate, Social Security card, Voter Registration card, school issued ID with picture, etc.

NOTE:

This class specification lists the major duties and requirements of the job and is not all-inclusive. Incumbent(s) may be expected to perform job-related duties other than those contained in this document and may be required to have specific job-related knowledge and skills.

McCarran Careers

Airport ATS Technician II

Class Code: N24328

Bargaining Unit: General

CLARK COUNTY DEPARTMENT OF AVIATION
Revision Date: May 23, 2011

SALARY RANGE

$18.42 - $28.55 Hourly
$1,473.84 - $2,284.00 Biweekly
$3,193.32 - $4,948.67 Monthly
$38,319.84 - $59,384.00 Annually

JOB SUMMARY/CLASS CHARACTERISTICS:

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Skill in: Performing general ATS maintenance work, individually or as a member of a crew/team; diagnosing electronic and mechanical failures; using initiative and independent judgment within established procedural guidelines.

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PHYSICAL DEMANDS:

Mobility to work in a typical shop or related maintenance setting, including operating typical trade equipment, hand and power tools and standard office equipment, and to drive a motor vehicle to various work sites; stamina to stand, sit, walk, balance, stoop, kneel, crouch, crawl and climb and to work in confined or awkward spaces for an extended period of time; strength to lift and maneuver materials and equipment weighing up to 100 pounds with proper equipment; vision to read printed materials and a computer screen; color vision and depth perception; hearing and speech to communicate in person or over a radio or telephone. Accommodation may be made for some of these physical demands for otherwise qualified individuals who require and request such accommodation.

REQUIREMENTS:

Equivalent to graduation from high school and six (6) years of mechanical, electro -mechanical, electronic and pneumatic experience. An apprenticeship in any of these areas will substitute on a year to year basis for experience. Two (2) years of maintenance and repair experience, in the area of automated transit systems.

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NOTE:

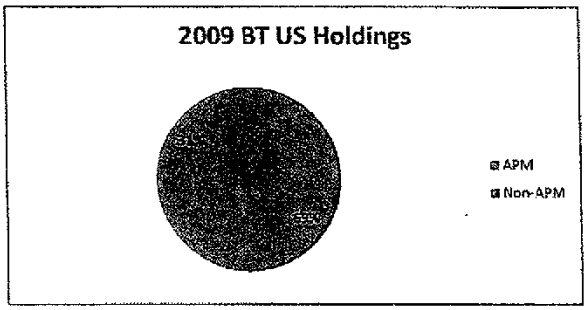
This class specification lists the major duties and requirements of the job and is not all-inclusive. Incumbent(s) may be expected to perform job-related duties other than those contained in this document and may be required to have specific job-related knowledge and skills.

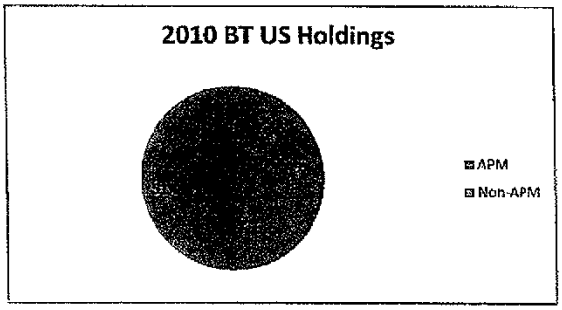
EXHIBIT 21

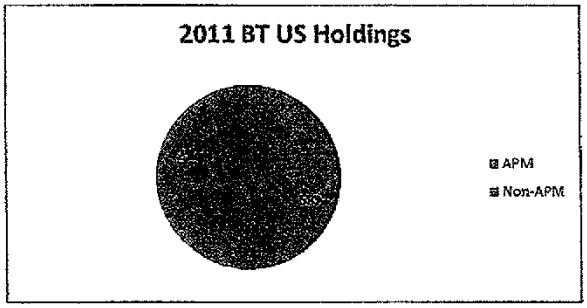
01230

Project	Product
Yong-In LRT Systems	ART City Flo 650
C65 Madrid L1&6 04	City Flo 650
C65 Tianjin L2&3	City Flo 650
C45 Bangkok Lgreen	City Flo 450
C65 Madrid CAF 09	City Flo 650
C65 Shenzen L3	City Flo 650
C65 SEPTA Upgrade	LRT 650 (Collision Avoidance)
KAFD	Monorail
Sao Paolo Expresso T	Monorail
SNJ O&M (New Jersey Transit)	Operation & Maintenance Services
CTA (Chicago Transi	Propulsion
Beijing Imported Goo	Propulsion
Toronto LRV	Propulsion
Metrolinx LRV	Propulsion
Kuala Lumpur	Propulsion
Vancouver (GVTA) Sky	Propulsion
Toronto TTC Rocket	Propulsion
NYPK - R142	Propulsion
PGH LRV	Propulsion
Component Sales	Propulsion

Project	Product
WMPK - WMATA 2000 8a	Propulsion
Marta Rehab	Propulsion
Neihu Line 2	Propulsion
NJT_Alp46A_02.2008	Propulsion
QR Extension 1	Propulsion
QR Extension 2	Propulsion
New York Transit Aut	Propulsion
New York / R142 RT c	Propulsion
WVU 2010	Propulsion
AC DRIVE CX100	Propulsion
MBTA Redline #2	Propulsion
San Fransisco Muni R	Propulsion
Bart APSE	Propulsion
KAFD	Propulsion
BKPA - INNOVIA ART 3	Propulsion
TRPA - TAIPEI C3D1 G	Propulsion
Small Projects BT 1	Propulsion
NJT_Alp46A_02.2008	Locomotive Supply & Equipment
NJT/AMT_DPL_08	Locomotive Supply & Equipment


2009 BT US Holdings
APM
Non-APM


2010 BT US Holdings
APM
Non-APM


2011 BT US Holdings
APM
Non-APM

	2009			2010			2011		
	Project	Product	YE Sales	Project	Product	YE Sales	Project	Product	YE Sales
RCS	Yong-In LRT Systems	ART City Flo 650	3,293,227.80	Yong-In LRT Systems	ART City Flo 650	635,772.20	C65 Madrid L1&6 04	City Flo 650	723,273.59
RCS	C65 Madrid L1&6 04	City Flo 650	1,541,618.34	C65 Madrid L1&6 04	City Flo 650	1,099,043.37	C65 Tianjin L2&3	City Flo 650	9,349,642.70
RCS	C65 Tianjin L2&3	City Flo 650	2,073,703.99	C65 Tianjin L2&3	City Flo 650	14,281,182.02	C45 Bangkok Lgreen	City Flo 450	77,428.45
RCS	C65 Madrid CAF 09	City Flo 650	1,757,399.03	C45 Bangkok Lgreen	City Flo 450	861,893.41	C65 Madrid CAF 09	City Flo 650	(16,622.93)
RCS	C65 Shenzen L3	City Flo 650	11,181,160.48	C65 Madrid CAF 09	City Flo 650	1,509,805.97	C65 Shenzen L3	City Flo 650	11,668,719.81
RCS	C65 SEPTA Upgrade	LRT 650 (Collision Avoidance)	29,581.97	C65 Shenzen L3	City Flo 650	13,702,243.22	C65 SEPTA Upgrade	LRT 650 (Collision Avoidance)	2,168,352.57
BTNA	SNJ O&M (New Jersey Transit)	Operation & Maintenance Services	23,503,694	C65 SEPTA Upgrade	LRT 650 (Collision Avoidance)	2,091,909.04	KAFD	Monorail	3,183,276.95
PPC	CTA (Chicago Transi	Propulsion	6,420,088.26	KAFD	Monorail	1,618,886.44	Sao Paolo Expresso T	Monorail 650	3,811,719.58
PPC	Beijing Imported Goo	Propulsion	888,120.96	Sao Paolo Expresso T	Monorail	53,443.03	C65 SaoPaulo L5 11	Metro 650	225,066.48
PPC	Toronto LRV	Propulsion	974,202.05	SNJ O&M (New Jersey Transit)	Operation & Maintenance Services	23,503,074	C65 SSR ATC Resignal	City Flo 650	1,577,152.36
PPC	Kuala Lumpur	Propulsion	6,245,613.39	CTA (Chicago Transi	Propulsion	7,133,589.78	SNJ O&M (New Jersey Transit)	Operation & Maintenance Services	23,883,327
PPC	Vancouver (GVTA) Sky	Propulsion	4,171,342.51	Beijing Imported Goo	Propulsion	225,792.59	San Francisco BART	Propulsion	
PPC	Toronto TTC Rocket	Propulsion	37,916,160.31	Toronto LRV	Propulsion	3,097,874.12	CTA (Chicago Transi	Propulsion	24,683,835.38
PPC	PURD 31 x 3-Car EMU	Propulsion	133,382.51	Metrolinx LRV	Propulsion	2,409,637.70	Beijing Imported Goo	Propulsion	49,017.09
PPC	New Jersey Transit	Propulsion	0.79	Kuala Lumpur	Propulsion	4,301,792.80	Toronto LRV	Propulsion	4,897,407.61
PPC	Tampa E	Propulsion	0.60	Vancouver (GVTA) Sky	Propulsion	537,000.23	Metrolinx LRV	Propulsion	201,307.03
PPC	Dallas Fort Worth AP	Propulsion	18,720.18	Toronto TTC Rocket	Propulsion	6,868,378.57	Kuala Lumpur	Propulsion	87,866.78
PPC	R 143 - NYPM	Propulsion	121,373.67	NYPK - R142	Propulsion	(2,698.04)	Vancouver (GVTA) Sky	Propulsion	314,490.92
PPC	R142A OPTION	Propulsion	6.17	PGH LRV	Propulsion	(127,928.45)	Toronto TTC Rocket	Propulsion	3,699,243.23
PPC	WMATA Option	Propulsion	4,060.34	Component Sales	Propulsion	16,214,494.48	Montreal STM	Propulsion	1,299,082.50
PPC	MBPH - Boston 8	Propulsion	(208,369.96)	WMPK - WMATA 2000 Ba	Propulsion	(197,589.26)	PURD 31 x 3-Car EMU	Propulsion	641.19
PPC	Marta Option 2	Propulsion	356.63	Marta Rehab	Propulsion	(24,906.35)	R 143 - NYPM	Propulsion	14,941.52
PPC	NYPK - R142	Propulsion	21,782.58	Neihu Line 2	Propulsion	4,747.91	Component Sales	Propulsion	15,523,330.99
PPC	MAPA - Marta	Propulsion	(135.67)	NJT_Alp46A_02.2008	Propulsion	150,752.96	WMPK - WMATA 2000 Ba	Propulsion	1,029.08
PPC	PGH LRV	Propulsion	861,689.27	QR Extension 1	Propulsion	77,235.71	Marta Rehab	Propulsion	24,906.35
PPC	Component Sales	Propulsion	20,896,006.43	QR Extension 2	Propulsion	6,116,720.31	Heathrow Ph2 3rd sta	Propulsion	76,786.06
PPC	NYPL - ECAM	Propulsion	749.92	New York Transit Aut	Propulsion	11,438,473.05	Orlando B4 Veh Rehab	Propulsion	0.50
PPC	LAPA - LA Greenline	Propulsion	(1,982.70)	New York / R142 RT c	Propulsion	226,325.89	Las Vegas APM C	Propulsion	28.69
PPC	DAPB -DART 34 Car ad	Propulsion	(1.52)	WVU 2010	Propulsion	1,578,573.61	NJT_Alp46A_02.2008	Propulsion	446,947.04
PPC	NYPG - R142 Base and	Propulsion	3,141.19	AC DRIVE CX100	Propulsion	389,673.65	QR Extension 1	Propulsion	1.90
PPC	TOPB - Toronto Option	Propulsion	(1.44)	MBTA Redline #2	Propulsion	1,859,625.51	QR Extension 2	Propulsion	1,087,564.51
PPC	WMPK - WMATA 2000 Ba	Propulsion	788,075.94	San Francisco Muni R	Propulsion	2,765,190.80	PTA 15 x 3-Car EMU -	Propulsion	12,464.33
PPC	P&C Miscellaneous	Propulsion	97,774.31	Bart APSE	Propulsion	5,635,068.31	New York Transit Aut	Propulsion	16,548,746.09
PPC	QR 24 x 3-Car SMU-IM	Propulsion	2,229,666.15	KAFD	Propulsion	1,172,765.18	New York / R142 RT c	Propulsion	1,377,023.68
PPC	Re 464	Propulsion	1,458.71	BKPA - INNOVIA ART 3	Propulsion	805,775.56	Dallas Arpt O&M 2010	Propulsion	7,351.46
PPC	NEW JERSEY BL	Propulsion	204,168.19	TRPA - TAIPEI C301 G	Propulsion	62,450.90	WVU 2010	Propulsion	5,602,035.39
PPC	Marta Rehab	Propulsion	1,341,662.53	Small Projects BT 1	Propulsion	1,446,038.44	AC DRIVE CX100	Propulsion	736,605.19
PPC	Neihu Line 2	Propulsion	2,466,289.35	NJT_Alp46A_02.2008	Locomotive Supply & Equipment	190,407,445.85	MBTA Redline #2	Propulsion	(1,875,680.89)
PPC	PAPB-PHG LRV ADD-ON	Propulsion	604,101.28	NJT/AMT_DPL_08	Locomotive Supply & Equipment	449,750.40	San Francisco Muni R	Propulsion	771,193.43
PPC	NCPA - Encoder Repal	Propulsion	2.00				Bart APSE	Propulsion	3,052,111.10
PPC	PTA 15 x 3-Car EMU	Propulsion	1,872,364.03				KAFD	Propulsion	3,607,230.87
PPC	QR 20 x 3-Car SMU-IM	Propulsion	2,890,427.06				BKPA - INNOVIA ART 3	Propulsion	1,569,035.44
PPC	QR 20 x 3-Car SMURM	Propulsion	1,321,785.02				Sao Paolo Expresso T	Propulsion	70,555.94
PPC	WVU Development	Propulsion	15,910.07				TRPA - TAIPEI C301 G	Propulsion	4,277,708.42
PPC	New York Transit Aut	Propulsion	2,216,847.86				Jeddah - King Abdull	Propulsion	197,946.90
PPC	AC DRIVE CX100	Propulsion	(77,102.40)				PPC TTC IGBT Prototy	Propulsion	441,703.73
PPC	MBTA Redline #2	Propulsion	73,321.41				Small Projects BT 1	Propulsion	143,730.57
PPC	San Francisco Muni R	Propulsion	914.02				Small Projects BT 7	Propulsion	223,759.00
PPC	Bart APSE	Propulsion	62,314.64				Small Projects BT 8	Propulsion	791,616.84
PPC	Small Projects BT 1	Propulsion	1,183,796.64				NJT_Alp46A_02.2008	Locomotive Supply & Equipment	73,089,238.87
LOC	New Jersey Transit	Locomotive Supply & Equipment	827.53				NJT/AMT_DPL_08	Locomotive Supply & Equipment	21,285,120.57
LOC	NJT_Alp46A_02.2008	Locomotive Supply & Equipment	390,932.15						
LOC	NJT/AMT_DPL_08	Locomotive Supply & Equipment	858,394.38						

Total 2009 - Non-APM:	140,230,222.65
Total 2009 LE Sales POC	447,360,000.00
	31.3%
	0.05

Total 2010 - Non-APM:	324,218,555.89
Total 2010 LE Sales POC	635,754,000.00
	51.0%

Total 2011 - Non-APM:	240,983,086.66
Total 2011 LE Sales POC	570,245,456.06
	42.3%

APM	307,149,777.35	69%	312,535,444.11	49%	329,252,369.40	58%	
Non-APM	140,230,222.65	31%	324,216,555.88	51%	240,983,086.66	42%	
							#REF!

EXHIBIT 22

01235

BOMBARDIER

Bombardier 000050

01236

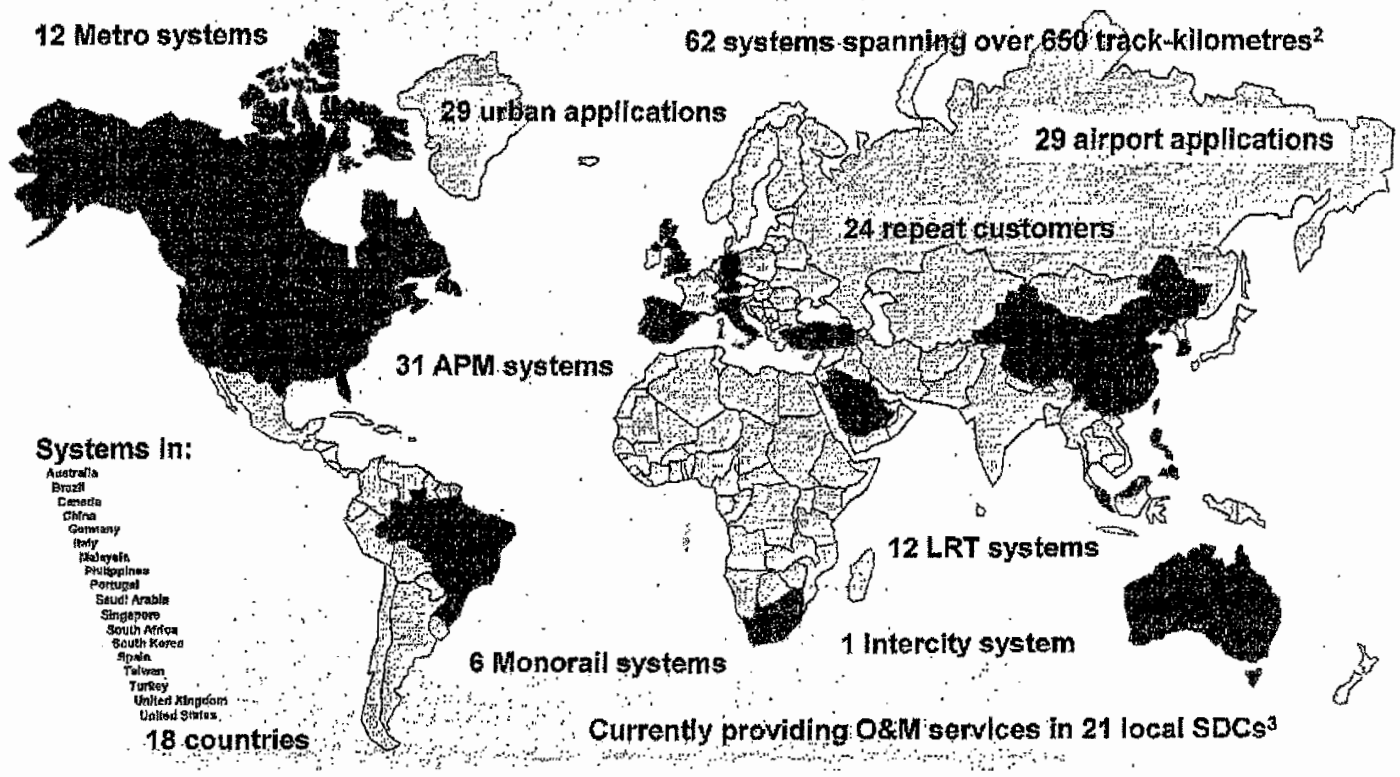
Six reasons to choose Bombardier for turnkey systems

Products	World leader in delivering Design-Build-Operate-Maintain (DBOM) turnkey systems	Broadest portfolio in the industry and a dedicated Systems division
People	Experienced and expert people in-house to project manage the entire scope and integrate all system elements	Actively integrates all parties of the project, cultivating close relationships with customers, suppliers and partners
Partner	Provides the full system package and capabilities including financing and services, to build partnerships for life	Most competitive whole life cost solution provider

BOMBARDIER

World leader in delivering turnkey transportation systems[1]

A world of experience and innovation

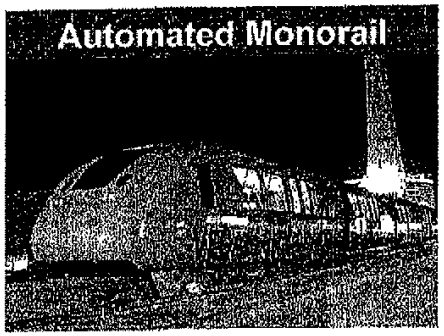


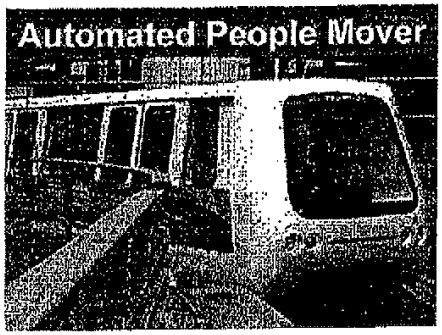
[1] Figures and statistics for systems sold as at January 2012
[2] Total double lane track
[3] SDC: Service Delivery Centre

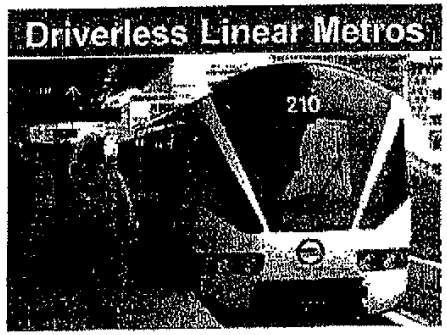
BOMBARDIER

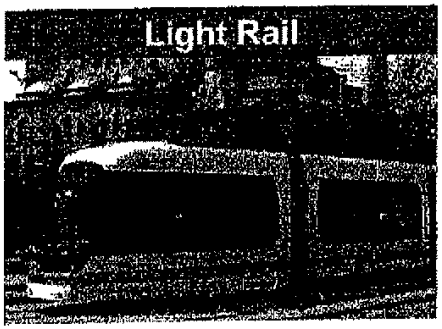
Broadest portfolio in the industry

Complete range of services packages to maintain system safety, availability and reliability, providing total care 24/7



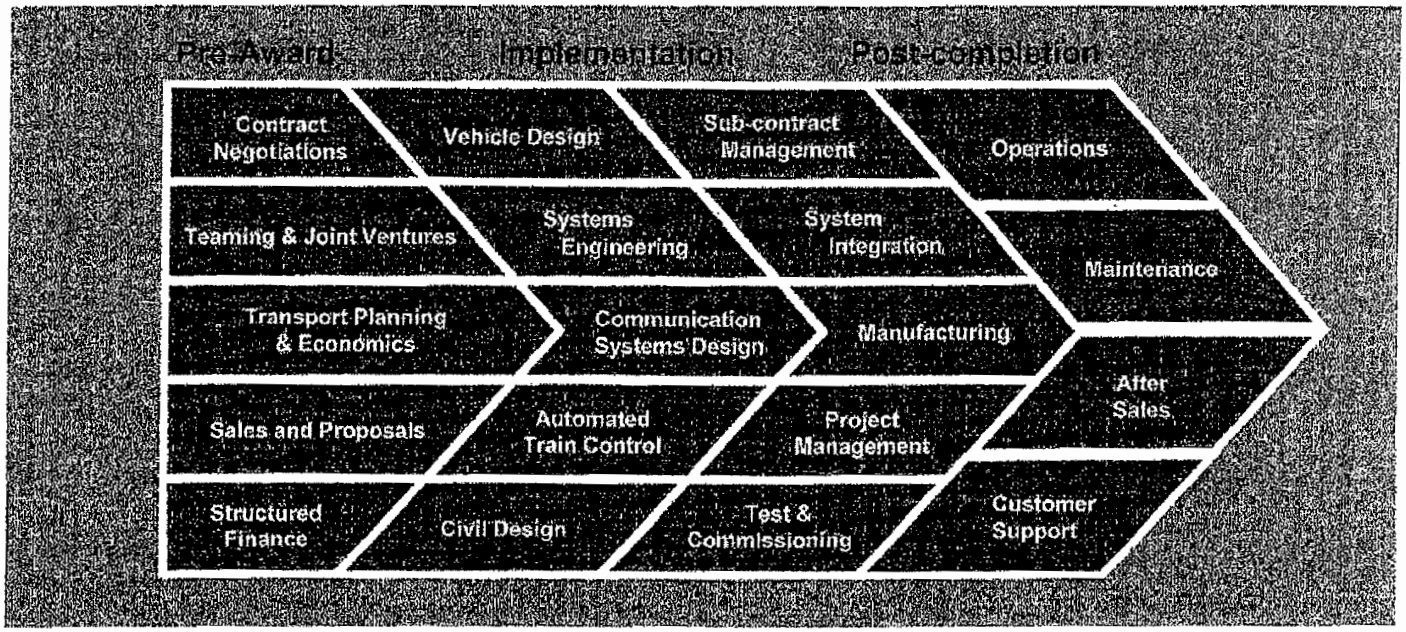






BOMBARDIER

Experienced and expert people at every stage



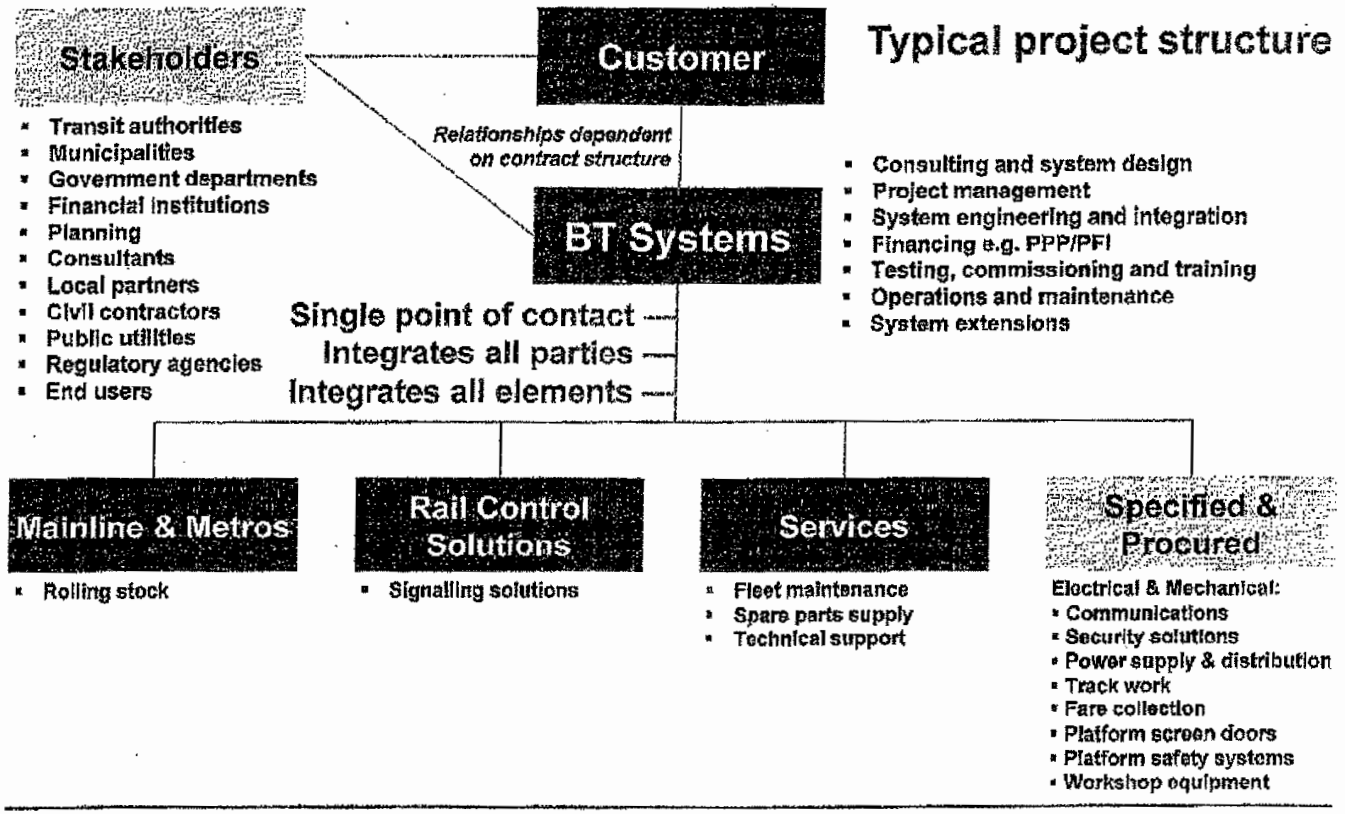
Bombardier 000054

01240

- Ability to rapidly mobilize resources for large projects
- Ability to design, build and/or sub-contract all system elements
- Operation and maintenance expertise for the whole life of the system

BOMBARDIER

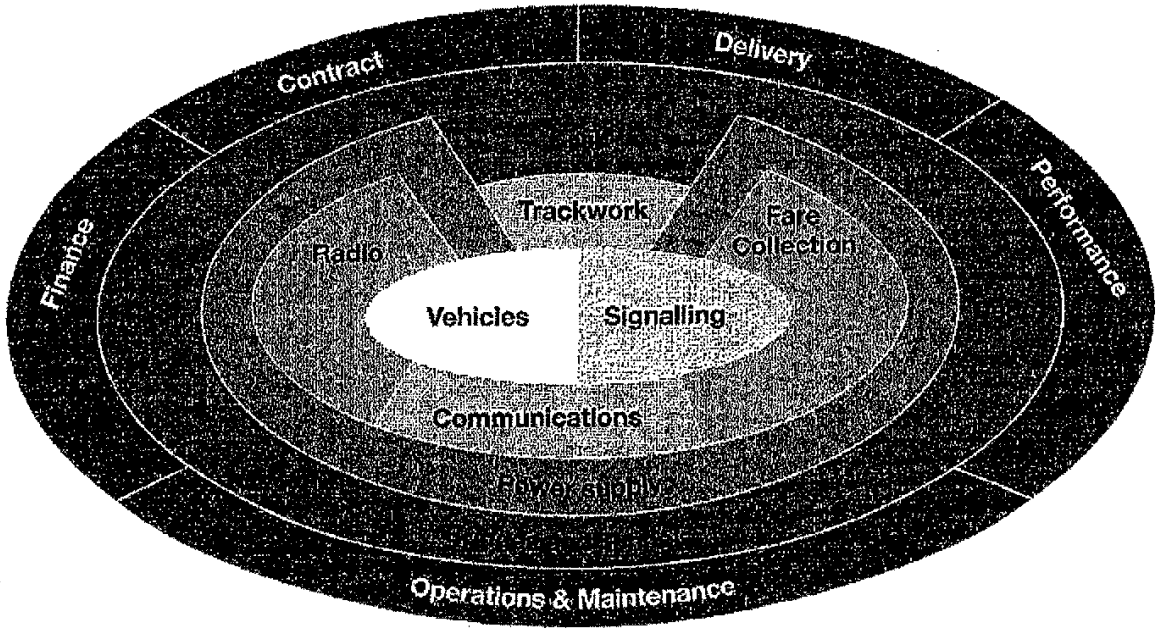
Bombardier integrates all parties involved in the project



BOMBARDIER

Provider and integrator for all system elements

Bombardier creates tailor-made solutions for customers



Benefits to customers from Bombardier's approach?

Because a turnkey project . . .

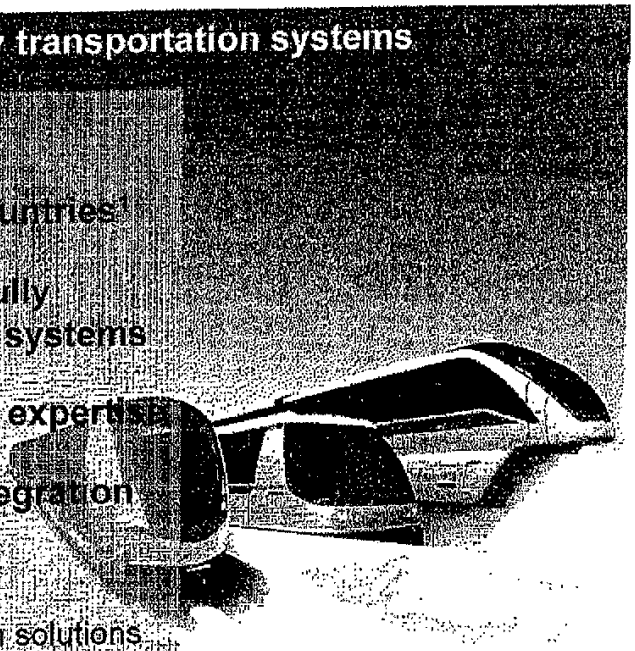
- creates clarity by having one party responsible for system delivery
- mitigates against scope and budget creep: one fixed price for the system
- has a shorter implementation time than "stop of the parts" procurement and a more reliable project delivery schedule
- "one stop shop" to source the skilled people
- focuses on optimisation of the complete system rather than reducing costs over the whole lifetime of the system

BOMBARDIER

The most competitive whole life cost solution provider

World leading supplier delivering turnkey transportation systems

- Dedicated specialist Systems division
- Over 60 system projects across 18 countries[1]
- Over 40 years experience delivering fully integrated, operational transportation systems
- Extensive operation and maintenance expertise
- Proven in system engineering and integration
- Highly innovative portfolio including:
  - *INNOVIA* family of driverless transit system solutions
  - *CITYFLO* and *INTERFLO* train control systems
  - *PRIMOVE* catenary-free operation



[1] As at August 31, 2011

BOMBARDIER

BOMBARDIER

The Climate is Right for Trains

BOMBARDIER

Content

Bombardier

Bombardier Aerospace

Bombardier Transportation

BOMBARDIER

The *O*NET* Occupational Profile for Elevator Installers and Repairers has an occupation code of 47-4021.00.

(5) I compared the job of Airport ATS Technicians at McCarran International Airport with the description of the job performed by Elevator Installers and Repairers.

Conclusions

On the basis of a comparison of the tasks performed, the skills, knowledge and abilities needed to succeed in the job, and the most important work activities in the job, I concluded:

(1) The job of Airport ATS Technicians at McCarran International Airport requires virtually all of the knowledge, skills, abilities, and experience required of Elevator Installer/Repairers.

(2) The work activities performed by Airport ATS Technicians overlap substantially with those performed by Elevator Installer/Repairers.

(3) The job of Airport ATS Technicians is comparable to, and perhaps more demanding than the job of Elevator Installer/Repairers.

(4) The job of Airport ATS Technicians at McCarran International Airport is appropriately classified as an Elevator Constructor/Installer/Repairer.

Kevin R. Murphy — Date: 8-2-12

01117

Documents Reviewed

1. O*NET Summary Report for 47-4021.00 - Elevator Installers and Repairers
2. O*NET Summary Report for 49-3043.00 - Rail Car Repairers
3. McCarran Airport APM Tool List
4. Elevator Constructor Tool List
5. ASCE Automated People Mover Standards - Parts 1-4
6. Clark County Airport ATS Technician I/II job description
7. Clark County Airport ATS Supervisor job description
8. Articles by Lawrence Fabian
    a. Horizontal Elevators – September 1993
    b. Horizontal Elevators – April 1997
    c. Market-Ready Horizontal Links – September 1999

EXHIBIT 19

01119

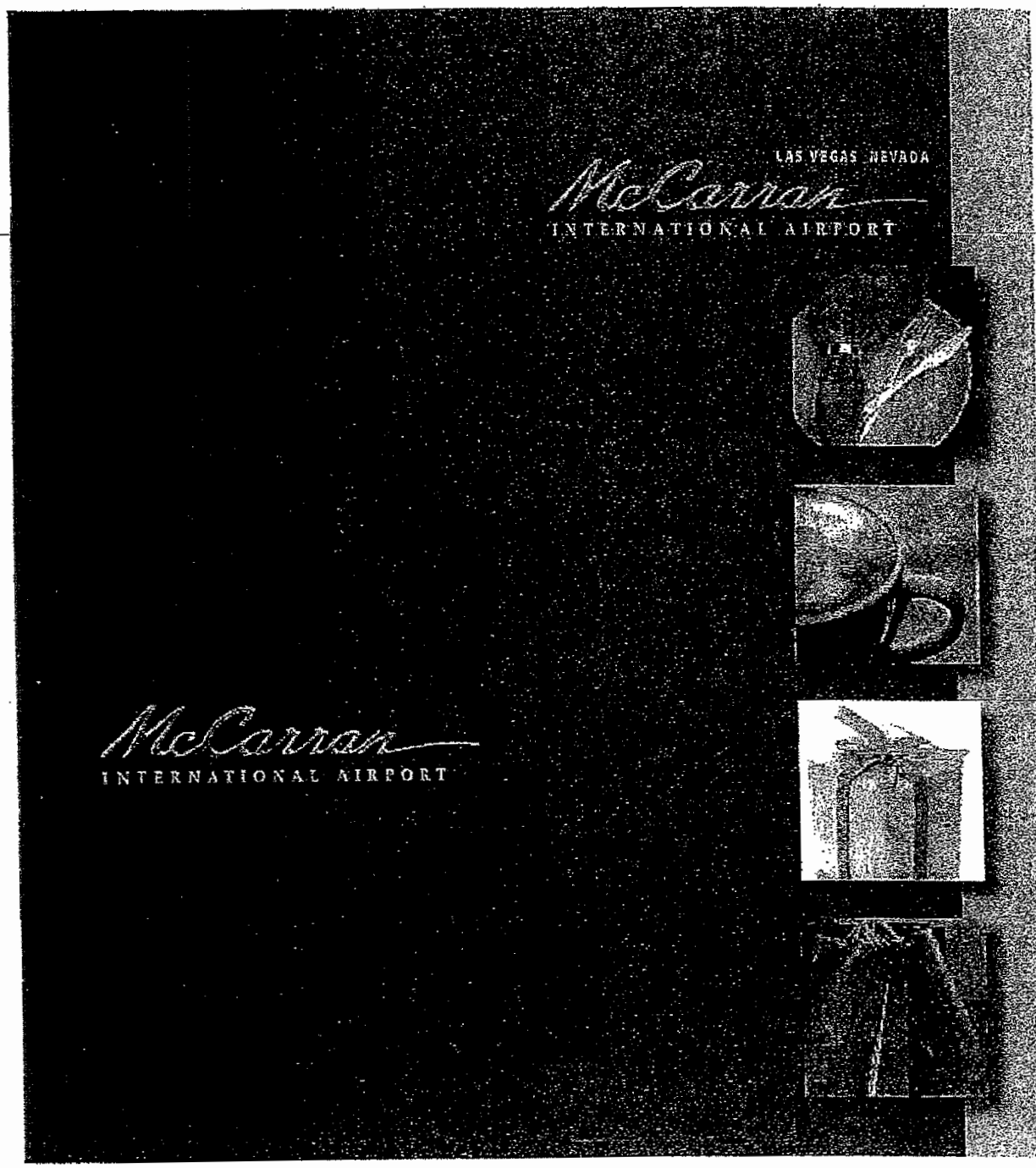
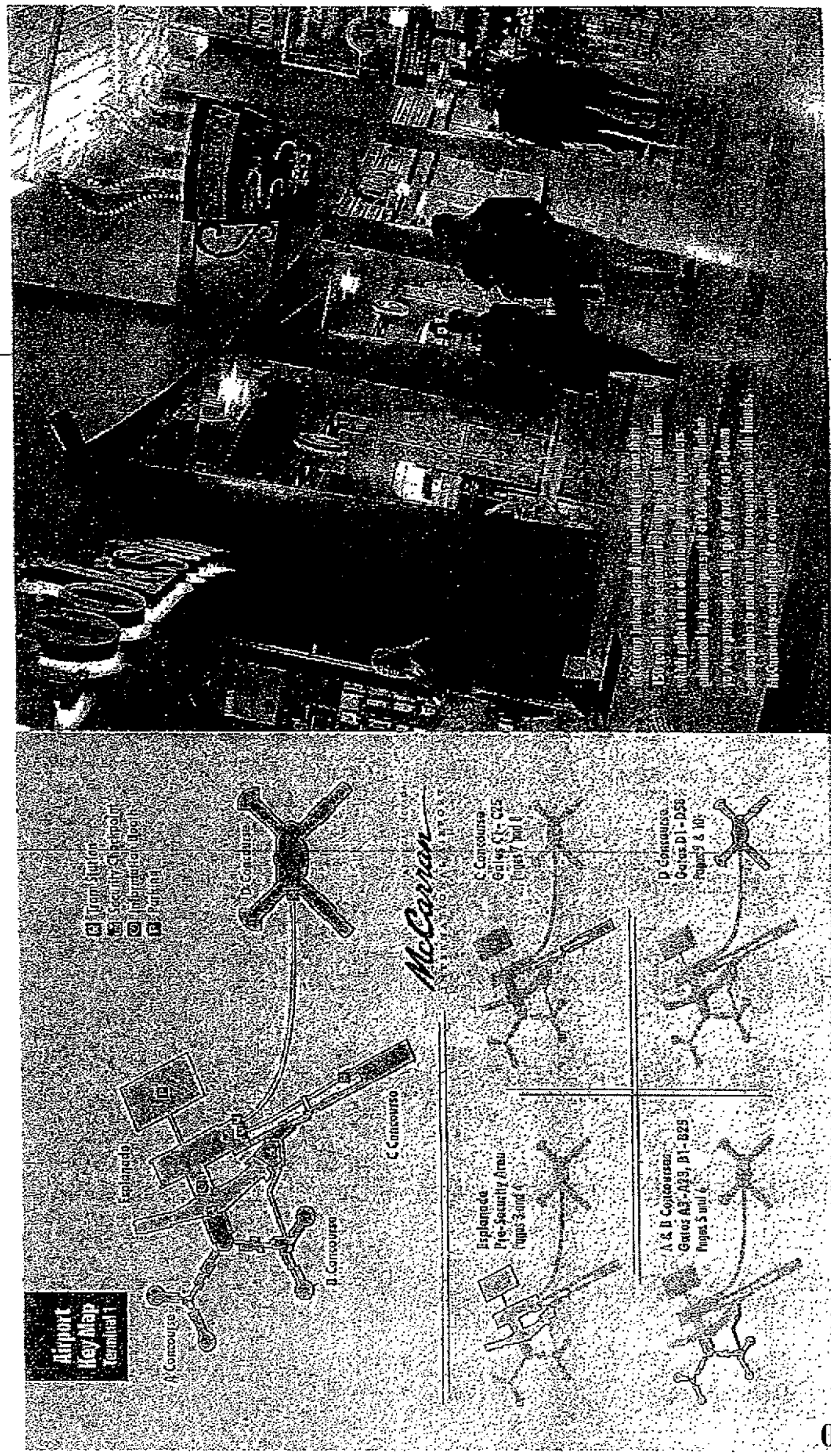


Exhibit No. 1
Witness Walker
Date 9/26/12

01120

NWD CCR# 711


Airport Key Map Terminal 1
A Concourse
D Concourse
Esplanade
C Concourse
McCarran

01121

01122

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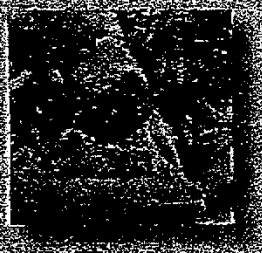
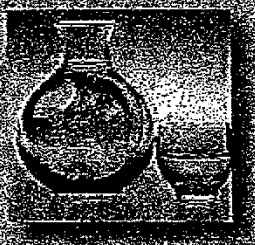
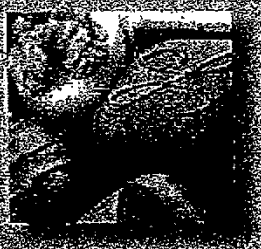


LAS VEGAS NEVADA

McCarran

INTERNATIONAL AIRPORT





01126

CLARK COUNTY, NEVADA

CONTRACT FOR MAINTENANCE OF AUTOMATED TRANSIT SYSTEM EQUIPMENT

CBE-552

NAME OF FIRM	BOMBARDIER TRANSPORTATION (HOLDINGS) USA, INC.
DESIGNATED CONTACT, NAME AND TITLE	EDWARD A. GORDON VICE PRESIDENT APM MARKETING
ADDRESS OF FIRM INCLUDING CITY, STATE AND ZIP CODE	1501 LEBANON CHURCH ROAD PITTSBURGH, PA 15236-1491
TELEPHONE NUMBER (include area code)	(412) 655-5248
FAX NUMBER (Include area code)	(412) 655-5841
EMAIL ADDRESS	rick.foster@us.transport.bombardier.com

Exhibit No. 2
Witness Walker
Date 9/26/12

KWD CCR# 711
01127

MAINTENANCE CONTRACT - TABLE OF CONTENTS

MAINTENANCE CONTRACT - TABLE OF CONTENTS- *Continued.*

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT

CBE-552

This contract, made and entered into as of this June 3 day of ~~July 1,~~ 2008 between CLARK COUNTY, a political subdivision of the State of Nevada, hereinafter called the **"OWNER,"** and Bombardier Transportation (Holdings) USA Inc., a corporation of the State of Delaware, herein called the "CONTRACTOR."

WITNESSETH:

~~WHEREAS, CONTRACTOR has proposed to provide maintenance service for the operation of the~~ Automated Transit System (ATS) equipment for McCarran International Airport; and, WHEREAS, OWNER desires the CONTRACTOR to provide maintenance for the said system;

NOW, THEREFORE, the CONTRACTOR hereby covenants and agrees to undertake and execute all of the said named work in a good, substantial and workmanlike manner and to furnish all the parts, materials, tools and labor necessary to perform properly the work in strict accordance with the General Provisions and, Maintenance Requirements referred hereto as Attachment A, and hereto other contract documents Exhibits A and B attached and made a part hereof. For performance of the contract, the OWNER shall pay the CONTRACTOR as hereinafter defined.

The CONTRACTOR shall commence the work to be performed under this contract on July 1, 2008. The contract period shall be for five (5) years.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed the day and year first above written.

APPROVED AS TO FORM:
DAVID ROGER, DISTRICT ATTORNEY

BY: _____
E. LEE THOMSON
Chief Deputy District Attorney

CLARK COUNTY, NEVADA

BY: _____
RANDALL H. WALKER
Director of Aviation

CONTRACTOR:

Bombardier Transportation (Holdings) USA Inc

BY: _____
EDWARD A. GORDON
Vice President APM Marketing

BY: _____
KEITH ORTON
Vice President, Finance

NOTE: Witnesses not required for a corporation, but a corporate certificate must be completed. Partnerships must complete a partnership certificate.

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT

CBE-552

1.0 GENERAL PROVISIONS

1.1 STATEMENT OF WORK

The work to be completed under this contract is set forth in Paragraph 2.0, Maintenance Requirements. The CONTRACTOR shall provide all labor, equipment and materials to perform the work according to the provisions contained therein.

1.2 TERM OF CONTRACT

This term of contract shall be for five (5) years commencing on July 1, 2008 through June 30, 2013.

1.2.1 FISCAL FUNDING REQUIREMENTS

OWNER reasonably believes that sufficient funds will be appropriated to make all payments during the term of the contract. In the event sufficient funds are not appropriated, the OWNER will so notify the CONTRACTOR for an orderly termination and close out of CONTRACTOR's operations hereunder as provided in Section 1.8. In any event, the contract is to terminate at the time appropriated funds are exhausted.

1.3 PAYMENT PROVISIONS

The OWNER agrees to pay CONTRACTOR, as follows, for the maintenance services described herein for the five (5) year contract period commencing July 1, 2008. The prices for each year are inclusive of the three (3) additional maintenance technicians for compressed maintenance of the D Gates Automated Transit System (ATS) which will reduce downtime by two (2) hours per day. With this reduced downtime, the hours of daily operation of the D Gates ATS will be 05:15 a.m. to 00:30 a.m. daily.

It is anticipated that during the term of this contract, new Terminal 3 will be constructed and the new ATS will begin carrying passengers. At the OWNER's sole discretion, when the new ATS at Terminal 3 commences operation, the additional cost associated with the three (3) additional technicians shall no longer be valid and therefore, the firm fixed price described below can be reduced by the amounts identified with an asterisk (*) and described as "Compressed maintenance fee".

Year One: July 1, 2008 – June 30, 2009
Base Price = $2,712,145 + *Compressed maintenance fee = $366,892
= A total fixed price of Three Million Seventy Nine Thousand Thirty Seven and no/100 Dollars ($ 3,079,037).

Year Two: July 1, 2009 – June 30, 2010
Base Price = $2,788,085 + * Compressed maintenance fee = $377,165
= A total fixed price of Three Million One Hundred Sixty Five Thousand Two Hundred Fifty and no/100 Dollars ($ 3,165,250).

Year Three: July 1, 2010 – June 30, 2011
Base Price = $2,924,702 + * Compressed maintenance fee = $395,646
= A total fixed price of Three Million Three Hundred Twenty Thousand Three Hundred Forty Seven and no/100 Dollars ($ 3,320,347).

Year Four: July 1, 2011 – June 30, 2012
Base Price = $3,070,937 + * Compressed maintenance fee = $415,428
= A total fixed price of Three Million Four Hundred Eighty Six Thousand Three Hundred Sixty Five and no/100 Dollars ($ 3,486,365).

Year Five: July 1, 2012 – June 30, 2013
Base Price = $3,224,483 + * Compressed maintenance fee = $436,199
= A total fixed price of Three Million Six Hundred Sixty Thousand Six Hundred Eighty Three and no/100 Dollars ($ 3,660,683).

1.3.1 TERMINAL 3 ATS

Upon commencement of this contract, the exact date to begin passenger service of the new Terminal 3 ATS has not yet been determined. However, when the new Terminal 3 ATS system commences operation, the following annual price as described in the table 1.3.1.1- Terminal 3 Costs (Includes escalation) on the following page shall be added to the yearly "Base" contract price.

Table 1.3.1.1- Terminal 3 Costs (includes escalation)
Terminal 3 Automated Transit System (ATS)
Pricing Per Contract No. 2273

	2006 Reference Price	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018
Year 1 Price =	$850,383	$1,034,621	$1,076,006	$1,119,046					
Year 2 Price =	$1,006,740		$1,273,847	$1,324,801	$1,377,793				
Year 3 Price =	$1,017,462			$1,338,911	$1,392,467	$1,448,166			
Year 4 Price =	$1,058,160				$1,448,166	$1,506,092	$1,566,336		
Year 5 Price =	$1,100,487					$1,566,336	$1,628,989	$1,694,149	
Year 6 Price =	$1,144,506						$1,694,149	$1,761,915	$1,832,392
Year 7 Price =	$1,190,287							$1,832,392	$1,905,687

For example, if the T3 ATS goes into service on January 1, 2012, the year 1 price will be $1,076,006, year 2 price will be $1,324,801, year 3 price will be $1,392,467, and so on.

The yearly price for the maintenance of the T3 ATS operation that shall be added to each yearly "Base Price" listed in the each "Year" column described in Table **1.3.1.1 – Terminal 3 Costs (includes escalation)**, above. The associated T3 Yearly Price to be added to the Base price for the T3 operation shall be solely dependent upon the year T3 commences operation.

Additionally, beyond the term of this agreement set to expire June 30, 2013, the prices listed above for the maintenance of the T3 ATS are predicated on the cross-utilization of concurrent Maintenance services including labor (common Administrative, Engineering, and Technician Services) and materials (common parts and supplies inventories and tools) provided by the CONTRACTOR on the Automated Transit Systems at C & D. In the event, the CONTRACTOR is no longer under contract for maintenance services for the Automated Transit Systems at C & D, then the OWNER will negotiate an Amendment to increase the CONTRACTOR's labor and materials for the efficient performance of Maintenance Services for the T3 ATS on a stand-alone basis. The unit prices from the CONTRACTOR's proposal shall be the basis of these Amendment negotiations.

All yearly prices listed in Table 1.3.1.1 are valid through June 30, 2018. Owner and Contractor shall begin negotiations for a new contract post July 1, 2018 beginning no less than 9 months prior to June 30, 2018. The new contract will be negotiated to encompass the entire ATS at McCarran International Airport, which includes APM systems on "C" and "D" and T3.

These contract amounts shall be subject to such additions and deductions as may be provided for in the contract documents. Payments shall be made upon the terms set forth in the contract documents.

1.3.2 CONTRACT AMOUNT

The contract amount reflects the OWNER's and CONTRACTOR's agreement as to the proper payment for all costs (excluding changes, heavy maintenance, major overhaul(s) described in Section 2.2.6.1, upgrades and enhancements) to be incurred by the CONTRACTOR in providing the operations and maintenance work in accordance with terms and conditions of the contract. The CONTRACTOR will not be entitled to any payment for additional work or reimbursement for costs over and above the amount for a given year unless it has received prior written authorization from the OWNER to exceed the contract amount.

1.3.3 METHOD OF PAYMENT

The CONTRACTOR shall be paid one-twelfth (1/12) of the contract amount for the applicable year each month and shall submit an invoice to OWNER. If additional fees, over and above the contract amount, have been approved by OWNER, CONTRACTOR will submit a billing for such additional services in the agreed amount along with its monthly invoice.

Except as otherwise provided herein, the OWNER will, within forty-five (45) days of receipt of an invoice, make payment to CONTRACTOR. The CONTRACTOR will submit an invoice for any additional work requested by the OWNER and performed during the preceding month, by the fifteenth (15th) day of each month.

The CONTRACTOR will be obligated to promptly pay all charges and costs incurred by CONTRACTOR for labor materials, supplies and equipment for the work performed under this contract within forty-five (45) days of invoice.

1.3.4 PAYMENT FOR UPGRADES AND ENHANCEMENTS

Upon completion of any OWNER approved upgrades and/or enhancements, and verification of the same by OWNER, CONTRACTOR will be paid the approved fixed-cost amount for the work as previously agreed between the parties pursuant to Paragraph 2.2.6.

1.3.5 CREDITS FOR SYSTEM AVAILABILITY

For any month of this contract that ATS does not achieve system availability (SA) of at least 99.65%, as defined in Exhibit "A" to this contract, a payment factor will be applied to the CONTRACTOR's total invoice amount for that month as follows:

SYSTEM AVAILABILITY (%)	PAYMENT FACTOR
99.65 – 100.00	1.000
99.55 - 99.64	0.991
99.45 – 99.54	0.981
99.35 – 99.44	0.971
99.25 – 99.34	0.961
99.15 – 99.24	0.949
99.05 – 99.14	0.937
99.00 – 99.04	0.930
98.95 – 98.99	0.916
98.85 – 98.94	0.892
98.75 – 98.84	0.870
98.65 – 98.74	0.850
98.55 – 98.64	0.832
98.45 – 98.54	0.816
98.35 – 98.44	0.807
98.25 – 98.34	0.786
98.06 – 98.24	0.773
98.05 or lower	0.761

For any period of 3 consecutive months, during this maintenance contract that a minimum SA of 99.65% is not met and/or a trend shows it will not be met, the CONTRACTOR will, at his expense, promptly undertake design reviews and a review of preventive maintenance procedures and propose a plan to correct within one month the default or potential default.

1.4 INDEMNIFICATION

Indemnity

The CONTRACTOR agrees, by entering into this contract, regardless of the coverage provided by an insurance policy, to pay all costs necessary to indemnify, defend and hold OWNER harmless from any and all claims, demands, actions, attorney's fees, costs, and expenses (collectively "Claims") but only to the extent such Claims are alleged to be based upon or arising out of any acts, errors, omissions, fault or negligence of CONTRACTOR or its principals, employees, subcontractors or other agents while performing services under this contract. The CONTRACTOR shall indemnify, defend, and hold harmless the OWNER for any attorney's fees or other costs of defense, even if the allegations of the claim are groundless, false or fraudulent.

Except claims for bodily injury and the costs of repair or replacement of damaged property, the CONTRACTOR's liability under this provision, for direct, indirect, special, incidental or consequential loss or damage, will be limited, in the aggregate, to two million dollars ($2,000,000).

Patent Indemnity

CONTRACTOR hereby indemnifies and shall defend and hold harmless OWNER and its representatives respectively from and against all claims, losses, costs, damages, and expenses, including attorney's fees, incurred by OWNER and its representatives, respectively, as a result of or in connection with any claims or actions based upon infringement or alleged infringement of any patent and arising out of the use of the equipment or materials furnished under the Contract by CONTRACTOR, or out of the processes or actions employed by, or on behalf of CONTRACTOR in connection with the performance of the Contract. CONTRACTOR shall, at its sole expense, promptly defend against any such claim or action unless directed otherwise by OWNER or its representatives; provided that OWNER or its representatives shall have notified CONTRACTOR upon becoming aware of such claims or actions, and provided further that CONTRACTOR's aforementioned obligations shall not apply to equipment, materials, or processes furnished or specified by OWNER or its representatives.

CONTRACTOR shall have the right, in order to avoid such claims or actions, to substitute at its expense non-infringing equipment, materials, or processes, or to modify such infringing equipment, materials and processes so they become non-infringing, or obtain the necessary licenses to use the infringing equipment, material or processes, provided that such substituted and modified equipment, materials and processes shall meet all the requirements and be subject to all the provisions of this Contract.

1.5 INSURANCE

The CONTRACTOR will provide OWNER with certificates of insurance for coverages as listed below, and endorsements affecting coverage required by this contract within ten (10) calendar days after approval by the OWNER. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer and licensed by the State of Nevada in accordance with NRS 680A.300.

Each insurance company's rating as shown in the latest Best's Key Rating Guide will be fully disclosed and entered on the required certificate of insurance. OWNER requires insurance carriers to maintain a Best's Key Rating of at least A - (minus) VIII (eight) or higher.

OWNER, its officers and employees must be expressly covered as additional insureds except on workers' compensation coverages.

The CONTRACTOR's insurance will be primary as respects the OWNER, its officers and employees

The CONTRACTOR's general liability policies will be endorsed to recognize specifically CONTRACTOR's contractual liability to OWNER. It is further agreed that the CONTRACTOR, or its insurance carrier, will provide the OWNER with 30-day advance notice of any cancellation of the policies, except for nonpayment which will be noticed ten (10) days in advance.

All deductibles and self-insured retentions will be fully disclosed in the certificates of insurance. No deductible or self-insured retention may exceed the equivalent of One Hundred Seventy Five Thousand Dollars ($175,000) without the written approval of the OWNER.

If aggregate limits are imposed on bodily injury and property damage, then the amount of such limits must be less than Two Million Dollars ($2,000,000). All aggregates must be fully disclosed and the amount entered on the required certificate of insurance. The CONTRACTOR must notify OWNER of any erosion of the aggregate limits.

The CONTRACTOR will obtain and maintain, for the duration of this contract, general liability insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, its agents, representatives, employees or SUBCONTRACTOR's of any tier. The cost of such insurance will be included in CONTRACTOR's fixed fee.

General liability coverage will be on a "per occurrence" basis only and not "claims made." The coverage must be provided either in a commercial general liability form or a broad form comprehensive general liability form. No exceptions to coverages provided in such forms are permitted. Policies must include, but need not be limited to, coverages for bodily injury, personal injury, broad form property damage, premises operations, severability of interest, products and completed operations, contractual and independent contractors. General liability insurance policies will be endorsed to include OWNER as an additional insured. Subject to paragraph 6 of this subsection, CONTRACTOR will maintain limits of no less than One Million Dollars ($1,000,000) combined single limit "per occurrence" for bodily injury (including death), personal injury and property damages.

The CONTRACTOR will obtain and maintain, for the duration of this contract, automobile coverage which must include, but need not be limited to, coverage against claims for injuries to persons or damages to property which may arise from or in connection with the use of any auto in the performance of the work hereunder by the CONTRACTOR, its agents, representatives, employees or subcontractors of any tier. Subject to the conditions set forth herein, CONTRACTOR will maintain limits of no less than Five Million Dollars ($5,000,000) combined single limit "per occurrence" for bodily injury and property damage.

If the CONTRACTOR fails to maintain any of the insurance coverages required herein, then the OWNER will have the option of declaring the CONTRACTOR responsible for any payments made by the OWNER to obtain or maintain such insurance, and the OWNER may collect the same from the CONTRACTOR, or deduct the amount paid from any sums due the CONTRACTOR under this contract.

The CONTRACTOR shall obtain and maintain for the duration of this contract, a work certificate and/or a certificate issued by an insurer qualified to underwrite workers' compensation insurance in the State of Nevada, in accordance with Nevada Revised Statutes Chapters 616A-616D, inclusive, unless Contractor is a Sole Proprietor and shall be required to submit an affidavit indicating that it has not elected to be included in the terms, conditions and provisions of Chapters 616A-616D, inclusive, and is otherwise in compliance with those terms, conditions and provisions.

The CONTRACTOR agrees to maintain required workers' compensation coverage throughout the term of the contract. If CONTRACTOR does not maintain coverage throughout the term of the contract, CONTRACTOR agrees that OWNER may, at any time the coverage is not maintained by CONTRACTOR, order the CONTRACTOR to stop work, suspend the contract, or terminate the contract.

The insurance requirements specified herein do not relieve the CONTRACTOR of its responsibility or limit the amount of its liability to the OWNER or other persons and CONTRACTOR is encouraged to purchase such additional insurance as it deems necessary.

The CONTRACTOR is responsible for and required to remedy all damage or loss to any property, including property of OWNER, to the extent caused by the CONTRACTOR, CONTRACTOR's subcontractor, or anyone employed, directed or supervised by CONTRACTOR.

In the event of a change in the cost of premium, which the Contractor believes to have been caused by factors beyond its control (i.e. terrorism), the Contractor may submit documentation of this change in costs to the Authority. If the Authority, in its sole discretion, determines that the cost of premiums increased due to the factors beyond the Contractor's control, the Authority shall make an equitable adjustment to the O&M price for the appropriate time period.

1.6 OWNERSHIP OF DOCUMENTS

Copies of ATS maintenance records developed by the CONTRACTOR at the work site will be deliverable to the OWNER upon request.

1.7 INDEPENDENT CONTRACTOR

In the performance of this contract, the CONTRACTOR's status is that of an independent CONTRACTOR, and not as an agent or employee of the OWNER. The CONTRACTOR will conduct themselves in accordance with that status.

1.8 TERMINATION

OWNER reserves the right to terminate the CONTRACTOR for cause by giving sixty (60) days prior written notice.

The performance of the work under this contract may be terminated by the OWNER in whole, or from time to time in part, in accordance with this paragraph whenever the OWNER determines that such termination is in the best interest of the County. Any such termination will be effected by a minimum of sixty (60) days prior written notice by registered or certified mail, return receipt requested to the CONTRACTOR specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective. Further, it will be deemed conclusively presumed and established that such termination is made with just cause as therein stated and no proof in any claim, demand, or suit will be required of the OWNER regarding such discretionary action. If such termination is given for nonperformance of the CONTRACTOR for work under this contract, the CONTRACTOR will not make claim for any termination expenses, except long-lead items which will not be received within the succeeding six (6) months, and for which the CONTRACTOR has an outstanding financial obligation.

After receipt of Notice of Termination, and except as otherwise directed by the OWNER, the CONTRACTOR will:

- Stop work under the contract on the date and to the extent specified in the Notice of Termination.
- Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portions of the work under the contract as is not terminated.
- Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination.

- Assign to the OWNER, in the manner, at the times, and to the extent directed by the OWNER, all of the rights, title, and interest of the CONTRACTOR under the orders and subcontracts so terminated, in which case the OWNER will have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

  Settle all outstanding liabilities and all claims arising out of such termination or orders and subcontracts, with the approval or ratification of the OWNER to the extent it may require, which approval or ratification will be final for all purposes of this Section.

- Transfer title to the OWNER and deliver in the manner, at the times, and to the extent, if any, directed by the OWNER:

  - Work in process, completed work, supplies, and other material produced as part of, or acquired in connection with the performance of, the work terminated by the Notice of Termination; and

  - The completed, or partially completed documents, information, and other property which, if the contract had been completed, would have been required to be furnished to the OWNER.

- Complete performance of such part of the work which have not been terminated by the Notice of Termination; and

- Take such action as may be necessary, or as the OWNER may direct, for the protection and preservation of the property related to the contract which is in the possession of the CONTRACTOR and in which the OWNER has or may acquire an interest.

- Within sixty (60) days after Notice of Termination, the CONTRACTOR will submit his termination claim to the OWNER in the form and with the certification prescribed by the OWNER. Unless one or more extensions in writing are granted by the OWNER upon request of the CONTRACTOR made in writing within such sixty (60) day period or authorized extension thereof, any and all such claims will be conclusively deemed waived.

- Subject to the provisions of this paragraph, the CONTRACTOR and OWNER may agree upon the whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of work pursuant hereto; provided that such agreed amount or amounts will never exceed the total year amounts as reduced by the amount of payments otherwise made and as further reduced by the amounts for work not terminated. The contract will be amended accordingly, and the CONTRACTOR will be paid the agreed amount.

- Under a partial termination of the work under this contract, the OWNER will review the CONTRACTOR's termination claim, and make payment in the amount due the CONTRACTOR. Any disagreement on the amount of such payment will be subject to settlement under the arbitration provisions of Article 1.17, Claims and Disputes.

1.9 GOVERNING LAW AND VENUE

The terms and provisions of this contract shall be construed in accordance with the laws and court decisions of the State of Nevada. Venue of any action brought under this contract shall lie in Clark County, Nevada, exclusively.

1.10 CHARACTER OF WORKMEN AND EQUIPMENT

The CONTRACTOR shall employ such superintendents, foremen, and workmen that are careful and competent. All workmen shall have sufficient skill and experience to perform properly the work assigned them. The OWNER shall furnish all tools and equipment as necessary to perform maintenance and repairs of equipment. CONTRACTOR shall provide a work force as considered necessary for the prosecution of the work in an acceptable manner and a satisfactory rate of progress.

The OWNER may, in writing, demand the dismissal of any person or persons) employed by the CONTRACTOR under this contract who misconducts himself/herself or is incompetent or negligent in the proper performance of its duties or neglects or refuses to comply with the directions of the OWNER as provided to CONTRACTOR. Such person or persons shall not be employed thereon again without the written consent of the OWNER.

Further, the CONTRACTOR's designated Superintendent shall not be replaced or reassigned by the CONTRACTOR without the approval of the OWNER. OWNER's approval of such replacement will not be unreasonably withheld.

All equipment, tools, and machinery used for handling materials and executing any part of the work shall be satisfactorily maintained. Equipment on any portion of the work will be such that no foreseeable injury to the work, or the property, will result from its use.

1.11 NO WAIVER OF LEGAL RIGHTS

Any waiver of any breach of this contract shall not be held to be a waiver of any other or subsequent breach, or of any right the OWNER or CONTRACTOR may have for damages.

1.12 FORCE MAJEURE

Neither the OWNER nor the CONTRACTOR shall be deemed in violation of this contract if it is prevented from performing any of the obligations hereunder by reason of boycotts, labor disputes, embargoes, shortage of material, acts of God, acts of the public enemy, acts of superior governmental authority, unusual weather conditions, floods, riots, rebellion, sabotage, or any other circumstances for which it is not responsible or which is not in its control, nor will any such event be considered in the computation of system availability (SA) hereunder. However, notice of such impediment or delay in performance must be timely given.

1.13 NONDISCRIMINATION

The CONTRACTOR agrees as follows during the performance of any of the work covered by this contract:

The CONTRACTOR shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The equal opportunity clause and the regulations contained in Title 41 of CFR Part 60-1 are incorporated in this contract by reference.

The CONTRACTOR shall file annually complete and accurate reports on Standard Form 100 (EEO-1) with the Joint Reporting Committee of the Federal Government. The CONTRACTOR shall file such a report within thirty (30) days after the effective date of this contract unless CONTRACTOR has submitted such a report within the twelve (12) months preceding the effective date of this contract.

The CONTRACTOR shall develop a written affirmative action compliance program for each of its establishments consistent with the rules, regulations and orders of the Department of Labor.

The CONTRACTOR shall not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant for employment is qualified. The affirmative action clause and the regulations contained in Title 41 of CFR Part 60-741 are incorporated in this contract by reference.
The CONTRACTOR shall not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The affirmative action clause and the regulations contained in Title 41 of CFR Part 60-250 are incorporated in this contract by reference.

1.14 PROPRIETARY INFORMATION

If CONTRACTOR transmits to the OWNER any information which CONTRACTOR considers confidential or proprietary, such information will be so designated. The OWNER will use such information exclusively in connection with ATS operation and maintenance; and, except as set forth as follows, the OWNER will not publish or otherwise disclose such information to third parties without the prior written permission of CONTRACTOR, except as required by law.

Notwithstanding the requirements set forth herein, OWNER may disclose said confidential or proprietary information to a governmental authority to the extent required to secure or maintain governmental permits, licenses, or other authorizations with respect to the ATS, provided, however, that if such disclosure is required, OWNER will give CONTRACTOR advance notice, which will be in writing if time permits, of such intended disclosure, so that both OWNER and CONTRACTOR may take all reasonable steps to secure protective treatment of the information against public disclosure by the governmental authority involved and that CONTRACTOR may participate in discussions with such governmental authority with regard to such protective treatment. In the event that efforts to secure protective treatment have become, after the exercise of all reasonable efforts, unsuccessful, CONTRACTOR will be afforded a reasonable opportunity to revise such confidential or proprietary information consistent with the requirements of the governmental authority.

1.15 LAWS AND REGULATIONS

CONTRACTOR and its employees and representatives shall at all times comply with all applicable laws, ordinances, statutes, rules or regulations.

If, during the term of this Contract, there are changes to existing laws or new laws, ordinances or regulations not pending at the time of signing this Contract which affect the cost or time of performance, CONTRACTOR shall immediately notify OWNER in writing and submit documentation of its effect on both time and cost. Upon concurrence by OWNER as to the effect of such changes an adjustment in the compensation and/or time of performance will be made.

If any discrepancy or inconsistency should be discovered between the Contract and any law, ordinance, regulation, order or decree, CONTRACTOR shall immediately report the name in writing to OWNER who will issue instructions as may be necessary.

1.16 CLAIMS AND DISPUTES

The following information is in regards to claims and disputes with the OWNER, and to provide the CONTRACTOR with the understanding on how to avoid and resolve contractual issues.

- Labor and materials not covered by the contract must be approved by the OWNER'S representative. The quote for additional work must include number of hours for labor and cost of parts.
- Work completed without prior approval shall not be authorized for payment.
- All claims must be submitted within thirty (30) calendar days. Claims submitted shall have all necessary documentation for charges sought. Failure to submit claim within thirty (30) calendar days shall be considered void.
- All claims approved by OWNER shall be paid within sixty (60) calendar days.
- CONTRACTOR agrees that signing of this contract covers all areas of maintenance for the ATS.

If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of the OWNER in the administration of this Contract, or by his failure to act within the time specified in this Contract (or if no time is specified, within a reasonable time), the OWNER will consider a claim for equitable adjustment for any increase in the cost of, or time required for performance of this Contract caused by such unreasonable suspension, delay, or interruption. However, no adjustments will be allowed under this clause for any suspension, delay, or interruption to the extent (1) that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the CONTRACTOR or (2) for which an equitable adjustment is provided for or excluded under any other provision of this contract.

No claim under the preceding paragraphs of this clause will be allowed (1) for any costs incurred before the CONTRACTOR will have notified the OWNER in writing of the act or failure to act involved, and (2) unless the notification of claim is given and the claim filed in writing within thirty (30) days after termination of the delay. The OWNER's decision on all claims for equitable adjustment will be issued to the CONTRACTOR in writing. Claims that are approved by the OWNER will be reflected in a written modification to the contract.

Any dispute relating to this Contract will be resolved through good faith efforts upon the part of the CONTRACTOR and OWNER. At all times, CONTRACTOR will carry on the work and maintain the progress schedule in accordance with the requirements of the contract and the determination of the OWNER, pending resolution of any dispute. If the dispute is not resolved in ninety (90) days, either party may request arbitration in accordance with the following paragraphs.

Except as otherwise provided herein, all claims, disputes, or other questions that may arise between OWNER and CONTRACTOR concerning this contract which cannot otherwise be settled by negotiation, and which have not been waived by the making and acceptance of Final Payment, may be submitted to and be determined and settled by arbitration in the manner set forth in this paragraph. Either party, by written notice to the other received before litigation is commenced, may demand arbitration and may appoint an arbitrator. If litigation has been commenced prior to receipt of demand to arbitrate, arbitration will not be held. Within five (5) days after receipt of such notice, the other party will, by written notice to the former, appoint another arbitrator, and, in default of said second appointment, the arbitrator first appointed will be sole arbitrator and will proceed in the same manner as hereinafter provided for three arbitrators. When two arbitrators have been appointed, they will, if possible, agree upon a third arbitrator and will appoint the same by notice in writing, signed by both of them given to the OWNER and the CONTRACTOR. If fifteen (15) days elapses after the appointment of the second arbitrator without notice of appointment of the third arbitrator being given, as aforesaid, then either party may, in writing, require

that the American Arbitration Association or the Nevada Arbitration Association to appoint the third arbitrator. Upon appointment of the third arbitrator, the three arbitrators will meet without delay and will proceed to a determination of the dispute in accordance with the construction industry rules of the American Arbitration Association. Any costs of arbitration will be shared equally by both parties.

Either party may appeal the decision of the Board of Arbitrators to the District Court of the State of Nevada, as provided for per NRS Chapter 38.

This Arbitration section will not apply to claims, disputes or other questions involving sums of money which exceed $50,000. The CONTRACTOR will carry on the work and maintain the progress and OWNER will continue to make payments on undisputed work during any dispute, arbitration or court proceedings, unless otherwise mutually agreed upon in writing.

If arbitration is commenced by either party under this section, then in this event the parties agree that during the period any such arbitration is being conducted, either party will have access to and the right to inspect, examine and make copies of any books, documents, papers, and records of the other involving transactions relative to the dispute which would have been discoverable had the matter been brought in the Nevada Courts. At the conclusion of the arbitration any such documents will be returned to the owning party.

1.17 NOTICE AND SERVICE THEREOF

Any notice to the CONTRACTOR from the OWNER or to the OWNER from the CONTRACTOR relative to any part of the contract shall be submitted in writing. Forwarding a notice may be accomplished by sending it by certified / registered mail, or hand delivered to the authorized representative at their work site.

1.18 WARRANTY

CONTRACTOR warrants that the ATS maintenance services performed by its personnel and the parts, equipment and services supplied by it in connection with such ATS operation and maintenance services will be provided in a manner such that the ATS will achieve a monthly system availability (SA), as defined and calculated in accordance with provisions of paragraph 1.3.4, of 99.65%. If the ATS fails to achieve the warranted monthly System Availability, due to the maintenance services provided by CONTRACTOR, payment for such services will be adjusted downward in accordance with the provisions of paragraph 1.3.4.

The only warranty made by CONTRACTOR is that expressly enumerated in this provision. Any other statements of fact or descriptions expressed in the contract, or any attachments hereto, will not be deemed to constitute a warranty of the work or any part thereof. THE WARRANTY SET FORTH IN THIS PROVISION IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING AND USAGE OF TRADE). The remedy provided above is the OWNER's sole remedy for any failure of CONTRACTOR to comply with its warranty obligations.

The CONTRACTOR will record all tasks performed by operations and maintenance personnel in fulfillment of warranty obligations under Contract and will record the time expended by such operations and maintenance personnel in performing such warranty tasks. Written reports will be submitted to the OWNER each month detailing the CONTRACTOR's use of operations and maintenance personnel in connection with warranty efforts performed during the prior month. This replacement of work hours will be at a mutually agreeable negotiated rate.

1.19 MISCELLANEOUS PROVISIONS

Third Party Beneficiaries. The provisions of this contract are only for the benefit of the parties hereto and not for any other person, except as specifically provided herein with respect to CONTRACTOR's suppliers. CONTRACTOR and OWNER agree to appear and to assist in the defense of any claim by a third party (other than a CONTRACTOR supplier) which alleges an interest in the subject matter of this contract.

Modification: No waiver, modification, or amendment of any of the provisions of this contract will be binding unless it is in writing and signed by a duly authorized representative of the party to be bound thereby.

Survival: The provisions of the paragraphs contained herein and titled INDEMNIFICATION, INSURANCE, PATENT INDEMNITY AND PROPRIETARY INFORMATION, will apply notwithstanding any other provision of this contract and will survive termination, cancellation, or expiration of this contract.

Assignment: This contract will not be assigned by either party without the prior written consent of the other party, which consent will not be unreasonably withheld; provided, however, that CONTRACTOR may assign any or all of its rights or obligations under this Contract to a wholly owned subsidiary.

1.20 AIRPORT SECURITY

a. OWNER Property

For security purposes, OWNER property is divided into three (3) categories as follows:

1. Landside: The non-secure portion of the Airport;
2. Airside: The Secured Area / Security Identification Display Area (SIDA); and
3. Sterile Areas: The parts of the terminal buildings that required access through a security check point. Note: This is a part of the SIDA.

All CONTRACTOR's personnel working on OWNER property, Landside, Airside or Sterile Areas, must be badged for identification purposes.

b. Federal Regulations

1. 49 Code of Federal Regulation (CFR), Part 1542, governing US Commercial Airport Security Program requires that security of the Secured Area / SIDA at McCarran International Airport be maintained at all times. This regulation has a provision for enforcement by the Transportation Security Administration (TSA), which may assess substantial fines ($10,000.00 per occurrence) for potential security breaches or violations or actual security breaches and violations by authorized and unauthorized persons and vehicles entering the Secured Area / SIDA on LAS. OWNER will be reimbursed by CONTRACTOR for any fines levied for breaches or violations of security due to CONTRACTOR or those of any tier subcontractor. When working at Airport, regardless of location, CONTRACTOR's personnel must visibly display at waist level or above on their outermost garment the appropriate McCarran International Airport security identification badge at all times.

2. CONTRACTOR acknowledges that McCarran International Airport reserves the right to refuse identification badges to any person with a record of arrests and convictions, or poses a safety or security risk to the airport, which in its sole judgment would render that person an unacceptable risk to the security of the Airport.
3. CONTRACTOR agrees to accept and reimburse OWNER for any fines levied on OWNER by TSA for any violation of any TSA Security Regulations and Rules by CONTRACTOR and its employees or any of CONTRACTOR's subcontractors, vendors, suppliers and agents and their employees.

c. Access to the Airport Secured Area / SIDA

Access to the Airport Secured Area/SIDA can be gained by personnel displaying a Maroon or Green badge. Personnel with a Tan Badge are only allowed access to and within the McCarran Sterile Areas and Landside/Public Areas. CONTRACTOR will be allowed access to only those areas necessary to complete the work.

d. Airport Secured Area / SIDA

If a Maroon or Green badge holder enters a part of the Airport Secured / SIDA for which access has not been authorized, CONTRACTOR may be subject to a fine as detailed in Section 1.21.b., and personnel may be subject to immediate and permanent removal, to include security identification badge revocation, from the Airport by OWNER.

e. Landside / Public Work Areas

CONTRACTOR's personnel with a Tan badge can gain access to Landside / Public or Sterile Area work areas without escort. If a Tan badge holder enters an Airport Secured Area / SIDA, CONTRACTOR may be subject to a fine as detailed in Section 1.21.b., and personnel may be subject to immediate and permanent removal from the Airport by OWNER. Personnel with Tan badges do not have the authority to escort and must be screened through the TSA passenger security checkpoint prior to entering Airport Sterile Areas.

SECURITY PROCEDURES AND BADGING

a. CONTRACTOR may apply for either a Maroon, Green or Tan badge for its personnel as applicable. The security identification badge shall be specific to the awarded contract, for which its personnel are assigned. All security badges are obtainable after receipt of Notice of Award and personnel's successful completion of US Customs & Border Protection (CBP) Access Seal background check (if applicable), TSA required criminal history records check and security threat assessment and successful completion of the Airport Security Training Class.
b. Airport Badging Office hours are between 6am – 6pm, Monday through Friday, excluding special events and holidays. The Airport Badging Office telephone number is (702) 261-5652. The Airport Fingerprint Office hours are between 7:00 a.m. – 12:00 noon and 1:00 p.m. – 3:45 p.m., Monday through Friday, excluding special events and holidays. The Airport Fingerprinting Office telephone number is (702) 261-5686.

c. CONTRACTOR's personnel requiring a Maroon, Green or Tan badge shall undergo a CBP access seal background check (if applicable) of which it may take up to five (5) business days for CBP to provide results. Once CBP check is complete (if applicable), personnel must be fingerprinted, as required by 49 Code of Federal Regulation (CFR), Part 1542. It may take up to fourteen (14) calendar days to receive the results of this Criminal History Records Check. Further, as required by Part 1542, individuals must submit necessary documentation and data for TSA to conduct a security threat assessment. Security Threat Assessment results may also take up to fourteen (14) calendar days to be received. Once Airport has received all results, the employee must attend the Airport Security Training Class. All badges expire on an annual basis. If the term of the contract is longer than twelve (12) months, then CONTRACTOR is required to re-badge all employees assigned to the contract. CONTRACTOR employees may renew badges beginning thirty (30)-days prior to date of expiration. Please note expiration date is date of employee's birthday.

d. A Maroon or Green badge provides access to the Airport Secured Area/SIDA, as stipulated by OWNER and is required when CONTRACTOR has to provide pedestrian escort to Airport Secured Area/SIDA or has to guard a door or gate that allows access to Airport Secured Area/SIDA. Personnel with a Maroon or Green badge may act as escort for persons (visual control) at worksite only and are not authorized to escort vehicles.

e. A Tan badge is authorized by and signed for by OWNER. This badge is required for all other personnel who do not have a Maroon or Green badge. A Tan badge provides access to Landside/Public/Sterile Areas as stipulated by OWNER. Tan badge holders may not be escorted into the Airport Secured Area/SIDA, nor do Tan badge holders have authority to escort and must be screened through the TSA passenger security screening checkpoints prior to entering Airport Sterile Areas.

f. CONTRACTOR will provide OWNER with information on the specific doors/points of entry through which access is required. OWNER will relay access requests to the Airport Badging Office for card readers (Maroon or Green badged personnel only) and to the Facilities Division for keyed doors. Access will be removed after contract completion.

g. Any toolbox, and tools contained within, for work/project duties only, may be brought into the Airport Sterile and Secured Area/SIDA, however, it is subject to search by the Airport and the TSA and must be controlled/secured. Toolboxes may not be taken through the TSA passenger security screening checkpoints.

h. "Airport personnel" includes any and all personnel of the Airport, operator, concessionaires, vendors, contractors, and subcontractors. All of these personnel using tools of the trade (knives and any cutting instrument/tool of any kind) within the Sterile and Secured Area/SIDA must have an Airport Issued Security Identification badge. Non-badged personnel may use necessary tools of the trade in sterile areas under visual supervision and escort of a properly badged person. Tan badged are prohibited from escorted non-badged personnel. Tools not under direct visual supervision must be secured from public access.

APPLICATION/DOCUMENTATION

a. CONTRACTOR through the OWNER's representative must obtain a fingerprint and badging application package from the Airport Badging Office. Upon completion, CONTRACTOR shall submit the application package to the Airport Badging Office. **NOTE:** If applicable, CONTRACTOR must first obtain applications for CBP Access Seal and complete necessary process and background checks for all of its personnel prior to requesting Airport Security Identification Badge.

b. Applications for picture badges must be processed through the Las Vegas Metropolitan Police Department (METRO). Two (2) forms of personal identification are required prior to submitting the application to the Airport Badging Office, one of which must be a government-issued picture I.D.

c. Owner will provide the Airport Badging Office with confirmation of the Notice of Award for each contract, including any renewals and/or extension dates and notice of contract completion.

BADGING AND FINGERPRINTING COST

a. The badging and fingerprinting costs shall be paid by the OWNER. The initial cost for badging is $10 per badge and $27 for fingerprinting per individual. The cost for the first replacement badge is $50, and $100 for the second replacement, and $200 for the third replacement (to be paid to the Airport Badging Office at the time the badge is issued), if the badge is lost for the fourth time, no badge will be issued. Badges re-issued after expiration will be issued at no cost. If a badge is reported stolen, there will be no charge if a copy of a police report is provided. Refunds will not be issued for replacement badges/lost badges.

LOST BADGES

a. CONTRACTOR shall immediately file a report of lost or missing badges with the Airport Control Center at (702) 261-5125. If a lost identification badge is recovered, it must immediately be returned to the Airport Badging Office.

b. CONTRACTOR shall immediately notify the Airport Badging Office of any employee or subcontractor of CONTRACTOR working on the contract that is terminated or is released from work and return badge.

VEHICLE ESCORTS

a. All vehicles without decals must be escorted.

b. No private vehicles, (registered to an individual) are authorized on the airfield.

c. All CONTRACTOR's subcontractors and vendor vehicles that are to be escorted will be required to provide a copy of vehicle registration (company) and insurance at the designated point of entry into the Airport Secured Area/SIDA. Said escorted vehicles are also required to display their company logo on both sides of each vehicle which must be visible from a reasonable distance with lettering a minimum of 3" high. Logos will be checked at the designated point of entry into the Airport Secured Area/SIDA.

d. All vehicles and personnel are subject to search and inspections.

e. CONTRACTOR shall submit a request for escorts no later than 1:00 pm on the day prior to the requirement.

CONTRACTOR'S RESPONSIBILITY

a. CONTRACTOR shall be responsible for all personnel engaged in the work to ensure that said personnel comply with all security requirements imposed by OWNER. It shall be CONTRACTOR's responsibility to ensure that all equipment and workmen do not enter Airport Secured Area/SIDA except as required during the progress of the work. CONTRACTOR shall follow the directions given by OWNER concerning the security policies, procedures, rules, regulations, and methods of access and any other restrictions applicable to work within Airport Secured Area/SIDA. CONTRACTOR's operations, vehicles and personnel shall be prevented from encroaching into aircraft operational areas by means of barricades, or as directed by OWNER.

b. CONTRACTOR, upon completion of the contract or when badges are no longer required, shall immediately return all badges to the Airport Badging Office. Failure to do so will result in monies being held from the last payment.

1.21 OWNER / CONTRACTOR COOPERATION

During the term of this contract, OWNER may let other contracts with CONTRACTOR or others to modify, expand or otherwise enhance the ATS. In such events, OWNER and CONTRACTOR agree to cooperate fully during such activity to minimize any interference with ATS operation.

OWNER agrees to place a similar provision in contracts it lets, and to coordinate the efforts of its CONTRACTOR's within the work area or in close proximity to the same. The OWNER and CONTRACTOR will meet monthly to review maintenance procedures and approve CONTRACTOR invoices.

1.22 CHANGES

The OWNER, without invalidating the CONTRACTOR, may in writing order extra work (for example, due to an increase in the number of vehicles or operating hours) or make other changes by altering, adding to the work and the contract fixed cost, time for completion of the work and other affected terms and conditions are to be adjusted accordingly. All such work will be executed in accordance with the applicable terms and conditions of the Contract as adjusted as a result of the Extra Work or other changes. The adjustments in schedule and other affected terms and conditions required by the change or Extra Work will be resolved insofar as practical at the time of ordering such change or extra work.

Payment for any such change or extra work will be made as provided herein. The CONTRACTOR will supply price quotations for the proposed change or extra work no later than thirty (30) calendar days from date of receipt of notification. The CONTRACTOR's price quotation will include all costs for such change or extra work, including where appropriate the costs of impact, disruption and delay. The parties will agree in writing upon a price and payment schedule for the extra work or change before said extra work or change is commenced.

1.23 ENTIRE CONTRACT

This contract embodies the entire contract between OWNER and CONTRACTOR. The parties will not be bound by or be liable for any statement, representation, promise, inducement or understanding of any kind or nature not set forth herein. No changes, amendments or modifications of any of the terms or conditions of the Contract will be valid unless reduced to writing and signed by both parties.

2.0 MAINTENANCE REQUIREMENTS

Operation of the ATS, including staffing of the Control Center Facility, will be performed by the OWNER as described herein. The CONTRACTOR will provide all required labor and materials, and will maintain the ATS as specified herein.

2.1 GENERAL

2.1.1 OWNER'S OPERATION

Operation of the ATS, including staffing of the Control Center Facility, will be performed by the OWNER. Responsibilities of the OWNER will include:

- Selecting the operational mode for the ATS;
- Monitoring system operations at Central Control and notifying CONTRACTOR of system malfunctions;
- Observing passenger activities via the CCTV monitors at Central Control;
- Responding to passenger inquiries via the vehicle radio;
- Directing all emergency procedures involving passengers and/or employees;
- Directing the removal of disabled vehicles from service;

- Coordinating with the CONTRACTOR's maintenance representative regarding performance of ATS maintenance activities.
- Providing contractual direction to the CONTRACTOR's maintenance representative under circumstances (emergency or otherwise) not covered in this contract.

For purposes of communicating with the CONTRACTOR's site manager, the OWNER will designate a representative to be at the airport at all times when the system is in operation, to serve as the OWNER's ATS representative. All OWNER communications to the CONTRACTOR regarding the operation of the ATS system will be through the CONTRACTOR's site manager.

2.1.2 OWNER PROVIDED WORK AND SERVICES

2.1.2.1 GUIDEWAY AND FACILITY MAINTENANCE

The OWNER will provide and maintain the maintenance shop, office and equipment room space to the CONTRACTOR; however, the CONTRACTOR will do general housekeeping of these areas.

The OWNER will provide and maintain the guide way structures, including the running surface, and coordinate this with CONTRACTOR's operations of the ATS System.

The OWNER will also maintain the passenger station finish and uncontrolled directional signs.

- 2.1.2.2 SERVICES

The OWNER will provide the following services to the CONTRACTOR at the OWNER's expense:

- All utilities (electric, heat, water, and sewage) used in the operation and maintenance of the ATS and in the CONTRACTOR's administration of its activities at the airport;
- Employee and job related vehicle parking for CONTRACTOR's employees at the airport and for all vehicles required for operation and maintenance of the ATS; and
- Airport identification badges for all of CONTRACTOR's employees at the Airport.
- Maintenance radios and base station

2.1.3 EXTENT OF THE WORK

The work under this contract shall include furnishing all labor and material necessary to accomplish the inspection, cleaning, adjustment, preventive maintenance, lubrication, repair, testing, replacement of worn parts, replacement of spare equipment and repair of spare equipment for the ATS, as hereinafter defined.

The equipment to be maintained hereunder is defined as equipment (excluding power distribution equipment but including the U.P.S.) supplied by the CONTRACTOR or pursuant to the ATS Contract ("C" Trams = 4 vehicles, "D" Trams = 6 Vehicles, and T3 (when system is placed into service) = 6 vehicles and associated components of all trams) between the CONTRACTOR and OWNER, except as specifically identified hereinafter. Maintenance of OWNER-supplied equipment or facilities which were not a part of the ATS Contract between the CONTRACTOR and OWNER is not included under this contract.

The CONTRACTOR will provide, train, and supervise all maintenance personnel and provide all materials and equipment required to accomplish the task specified herein, to assure that ATS provides safe and reliable service for passengers.

As spare parts are used by CONTRACTOR from the OWNER's spare parts stock, CONTRACTOR will replace such spares with new or rebuilt replacement spares at no additional cost to the OWNER. The quantity and quality of each item may be varied at CONTRACTOR's discretion if the system safety and performance are not reduced. CONTRACTOR, with OWNER's approval, may also change the spare parts mix as long as the initial value of the stock is not reduced.

2.1.4 CONTRACTOR'S PERSONNEL

The CONTRACTOR will assign a qualified and experienced person, who will be directly employed by the CONTRACTOR, to be at the Airport at all times when the system is in operation. This person will be designated as the CONTRACTOR's maintenance representative for purposes of coordination and communication with the OWNER's operations personnel in accomplishing the orderly operation and maintenance of the ATS.

2.1.5 MAINTENANCE PLAN AND PROCEDURES

All maintenance work on the ATS will be performed in accordance with the approved maintenance plan and manuals.

ATS maintenance will be scheduled by the CONTRACTOR in such a way that the interference with, or effect upon the operation of the ATS system is minimized. To minimize operational impact, maintenance of equipment may necessarily have to be done at night, or in the off-peak periods. Maintenance practices or procedures which may compromise or degrade the operation must be approved by the OWNER in advance of their initiation, either on an individual basis, or as part of the approved maintenance plan.

2.1.6 MANUAL VEHICLE MOVEMENTS

When directed by the OWNER's authorized ATS representative, the CONTRACTOR will accomplish all manual vehicle movements associated with operation and maintenance of the ATS.

Whenever ATS vehicles stall, restoration of service is of paramount concern. Restoration of service and/or recovery of stalled vehicles will be accomplished by the following actions:

- The Control Center operator will attempt to restart the stalled vehicle remotely by issuing a command from Control Center.
- A maintenance person will be dispatched to the stalled vehicle. The maintenance person will thoroughly check the vehicle, and attempt to restart it using onboard reset devices.
- If the vehicle cannot be restored to automatic operations, the maintenance person will manually drive the vehicle to the nearest station, using the onboard controls provided for that purpose. At the station, passengers will be allowed to deboard the vehicle.
- If it is not possible to manually advance the vehicle to the station, passengers will be evacuated to the emergency walkway where, under the supervision of OWNER's personnel, they will walk to the nearest station. CONTRACTOR's personnel will assist OWNER as requested. OWNER's response time will be such as not to impact contract availability requirements.

Movement of vehicles under manual control will be accomplished only by qualified CONTRACTOR personnel, and only under rules and procedures established jointly by the CONTRACTOR and the OWNER to ensure personnel safety and equipment security.

2.1.7 RECORDS

The CONTRACTOR will keep detailed records and inventory data to permit the OWNER to ascertain the CONTRACTOR's compliance with the requirements of this contract and will furnish the OWNER copies of such documents upon request. The procedures and forms for such record-keeping will be submitted for approval by the OWNER. All records and data will become the property of the OWNER at the conclusion of this contract.

2.1.8 SUBCONTRACTS

The CONTRACTOR will have the right to subcontract portions of the maintenance work to qualified SUBCONTRACTOR's or service shops, provided the subcontracted service complies in every way with the requirements of this contract. In such cases, the CONTRACTOR will be responsible for the training of all subcontractor personnel.

2.2 SUBSYSTEM MAINTENANCE

The CONTRACTOR will maintain the ATS subsystems as specified in the following paragraphs. For each of the ATS subsystems, the following types of maintenance will be performed.

Routine Maintenance - Activities designed to provide a clean and aesthetically pleasing system for public use, as well as routine inspections and test designed to identify any unusual or abnormal equipment conditions. Routine maintenance activities will be included in the CONTRACTOR's Maintenance Plan.

Scheduled Maintenance - Activities designed to keep the ATS operating at prescribed levels of safety and reliability, which are performed on a recurring basis, at specified intervals. Scheduled maintenance activities will be included in the CONTRACTOR's maintenance plan.

Non-Scheduled Maintenance - Any corrective measure or repair required by an inspection, a failure, or unusual circumstances adversely affecting the normal ATS operation. Non-scheduled maintenance activities need not be included in the CONTRACTOR's Maintenance Plan, but, when required, should be performed on a priority basis.

The maintenance work performed by the CONTRACTOR will be sufficient to maintain system performance characteristics at the levels specified in the ATS Contract. CONTRACTOR and OWNER will mutually develop and agree on a data form to permit CONTRACTOR to input maintenance information into the OWNER's Maintenance Management Program.

2.2.1 VEHICLE MAINTENANCE

The CONTRACTOR will service and maintain the entire ATS vehicles, including, but not limited to: wheels, vehicle frame, structural members, vehicle body, seats, windows, panels, doors, suspension equipment, propulsion and braking equipment, vehicle control equipment, accessory equipment, door mechanisms, graphic, and air conditioning equipment.

As a minimum, the CONTRACTOR will perform the maintenance activities outlined below.

2.2.1.1 ROUTINE VEHICLE MAINTENANCE

Daily Cleaning of All Vehicles

- Visual examination for damage
- Wiping and dusting of exterior and interior surfaces
- Vacuuming of floors
- Removal of litter, debris, and graffiti
- Washing of floors, seats and windows
- Washing of exterior body and chassis (weekly or as-required*)
- Vehicle glass – once per week**
- *Any "as-required" needs shall be negotiated separately between OWNER and CONTRACTOR and then added to base contract.
- **If frequency of glass cleaning is required to be increased by OWNER, then CONTRACTOR'S SDC manager and OWNER's Representative will negotiate in good faith and mutually agree upon additional price to perform the work.

Inspection

- Visual examinations
- Equipment operational checks
- Diagnostic equipment-assisted checks

Service Tests

- Tests of vehicle subsystems as necessary to assure safe and reliable operation

2.2.1.2 SCHEDULED VEHICLE MAINTENANCE

Minor Maintenance

- Changing or adding lubricants
- Performing equipment adjustments
- Replacing components
- Performing minor repairs
- CCTV inspection

Major Maintenance (excluding work covered under Paragraph 2.2.6)

- Replacing major repairable units
- Performing major repairs
- Rebuilding and overhauling major components
- Repairing spare equipment

2.2.1.3 NON-SCHEDULED VEHICLE MAINTENANCE

Non-scheduled vehicle maintenance may be required because of unsatisfactory conditions discovered during an inspection, or because of an operational failure. When required, non-scheduled vehicle maintenance will be performed on a priority basis.

2.2.2 GUIDEWAY EQUIPMENT MAINTENANCE

The CONTRACTOR will align, adjust and otherwise maintain guideway and vehicle guidance devices as required to maintain the specified ride quality of the system. Also, the CONTRACTOR will clean and paint the CONTRACTOR supplied guideway equipment as required to prevent corrosion. As a minimum, the CONTRACTOR will perform the maintenance activities outlined below.

2.2.2.1 ROUTINE GUIDEWAY EQUIPMENT MAINTENANCE

Cleaning

- Sweeping the vehicle running surfaces
- Removal of debris and litter from the guideway
- Disposal of collected dirt and debris
- Periodic washing of the guideway with high pressure water

Inspection

- Visual examination of guideway equipment for deterioration or damage
- Equipment operational checks
- Diagnostic equipment-assisted check

2.2.2.2 SCHEDULED GUIDEWAY EQUIPMENT MAINTENANCE

Minor Maintenance

- Touch-up painting of exposed surfaces
- Alignment of guidance devices

2.2.2.3 NON-SCHEDULED GUIDEWAY EQUIPMENT MAINTENANCE

Non-scheduled guideway equipment maintenance may be required because of unsatisfactory conditions discovered during an inspection, or because of an operational failure. When required, non-scheduled maintenance of guideway equipment will be performed on a priority basis.

2.2.3 STATION EQUIPMENT MAINTENANCE

The CONTRACTOR will service and maintain all electrical, electronic and mechanical equipment, windows, and door panels associated with station doors. Also, the CONTRACTOR will service and maintain all passenger controls and displays located at the stations.

As a minimum, the CONTRACTOR will perform the following station equipment maintenance activities:

2.2.3.1 ROUTINE STATION EQUIPMENT MAINTENANCE

Cleaning

- Cleaning of all station windows (on the guideway side only)

Inspection

- Visual examination of station equipment, doors, ATS graphics, and station occupancy detectors
- Equipment operation checks
- Diagnostic equipment-assisted checks

2.2.3.2 SCHEDULED STATION EQUIPMENT MAINTENANCE

Minor Maintenance

- Station door adjustments and repairs
- Graphics repairs (excluding bulb replacement)
- Occupancy detector adjustments and repairs

2.2.3.3 NON-SCHEDULED STATION EQUIPMENT MAINTENANCE

Non-scheduled station equipment maintenance may be required because of unsatisfactory conditions discovered during an inspection, or because of an operational failure. When required, non-scheduled maintenance of station equipment will be performed on a priority basis.

2.2.4 POWER DISTRIBUTION EQUIPMENT MAINTENANCE

The OWNER will maintain all traction power distribution equipment up to the power rails. This will include, but not be limited to: metering equipment, power circuit breakers, lightning protection equipment power transformers, power cables and the Diesel Generator set.

As a minimum, the OWNER will perform the maintenance activities outlined below.

2.2.4.1 ROUTINE POWER DISTRIBUTION EQUIPMENT MAINTENANCE

Cleaning

- Cleaning and sweeping of substation areas
- Cleaning of power equipment cabinets

Inspection

- Visual examinations
- Equipment operational checks
- Diagnostic equipment-assisted checks

2.2.4.2 SCHEDULED POWER DISTRIBUTION EQUIPMENT MAINTENANCE

Minor Maintenance

- Adjustment and testing of power transformers and switch gear
- Repair and replacement of contactors and isolation switches
- Regularly scheduled diagnostic checks of equipment operation

Major Maintenance (excluding work covered under Section 2.2.6)

- Repair or replacement of failed equipment or components

2.2.4.3 NON-SCHEDULED POWER DISTRIBUTION EQUIPMENT MAINTENANCE

Non-scheduled power distribution equipment maintenance may be required because of unsatisfactory conditions discovered during an inspection, or because of an operation failure. When required, non-scheduled maintenance of power distribution equipment will be performed on a priority basis.

The CONTRACTOR will perform maintenance activities on the U.P.S., power rails and surge protection equipment. This task also includes the alignment and adjustment of the power rails on the guideway.

2.2.5 AUTOMATIC TRAIN CONTROL EQUIPMENT MAINTENANCE

The CONTRACTOR will service and maintain all automatic vehicle control (ATC) and associated equipment, including the ATS Control center equipment.

As a minimum, the CONTRACTOR will perform the maintenance activities outlined below.

2.2.5.1 ROUTINE MAINTENANCE OF AUTOMATIC TRAIN CONTROL EQUIPMENT

Cleaning

- Cleaning of ATC equipment cabinets

Inspection

- Visual examination
- Equipment operational checks
- Diagnostic equipment-assisted checks

Verification

- Periodic verification of the proper and safe operation of all ATC equipment

2.2.5.2 SCHEDULED MAINTENANCE OF AUTOMATIC TRAIN CONTROL EQUIPMENT

Minor Maintenance

- Operation of diagnostic programs
- Test operation of redundant equipment
- Component operational checks
- Preventive maintenance on all control equipment (such as lubrication, adjustments and cleaning)
- Scheduled replacement or repair of components

Major Maintenance (excluding work covered under Section 2.2.6)

- Repair or replacement of failed equipment or components

2.2.5.3 NON-SCHEDULED MAINTENANCE OF AUTOMATIC TRAIN CONTROL EQUIPMENT

Non-scheduled automatic vehicle control equipment maintenance may be required because of unsatisfactory conditions discovered during an inspection, or because of operational failures. When required, non-scheduled maintenance of AVC equipment will be performed on a priority basis.

2.2.6 UPGRADES AND ENHANCEMENTS

In accordance with Bombardier recommended upgrades and enhancement practices, at the beginning of each year of the maintenance service to be provided hereunder, the CONTRACTOR will submit for OWNER approval proposals for upgrades and/or enhancements required to be accomplished in the pending contract year. The proposal will include CONTRACTOR's justification for the work, the work-scope definition, estimate of time required and a fixed cost proposal for performing each task which will be reviewed by the OWNER. Any upgrades or enhancements performed by the CONTRACTOR will be subject to the covenants, terms and conditions of the contract.

Under no circumstances will the CONTRACTOR perform any of the proposed upgrades or enhancements or heavy maintenance and overhaul tasks without formal written approval from the OWNER.

In the event a requested upgrade or enhancement is rejected by the OWNER and subsequently a malfunction occurs which would not have occurred had the upgrade or enhancement been performed, any downtime resulting from such a malfunction and its repair will not be included in the System Availability calculation for the system nor will Contractor be deemed in violation of this contract.

2.2.6.1 HEAVY MAINTENANCE AND OVERHAUL

In accordance with Bombardier recommended Heavy Maintenance and Overhaul practices, and prior to the execution of the contract, and annually thereafter, the CONTRACTOR will submit for OWNER approval a schedule of heavy maintenance and overhaul tasks to be accomplished in the pending contract year. The schedule will include CONTRACTOR's justification for the work, the work-scope definition, estimate of time required and a fixed cost proposal for performing each task which will be reviewed by the OWNER. Any heavy maintenance or overhaul tasks performed by CONTRACTOR will be subject to the covenants, terms and conditions of the contract.

Under no circumstances will the CONTRACTOR perform any heavy maintenance and overhaul tasks, except for those that have been scheduled as specified above, without formal written approval from the OWNER.

Heavy maintenance and overhaul tasks will include, but are not necessarily limited to, the following:

Vehicles

- Propulsion motor overhaul
- Axle differential and planetary gear overhaul
- Air-conditioning compressor overhaul
- Replacement of bogie pivot bearing
- Exterior body waxing
- Replacement of carpet
- Vehicle Interior Refurbishment
- UPS System

Guideway

- Guideway painting - excluding repair or touch-up painting
- Running surface repair - excluding local patch work

Notwithstanding any of the above, the performance of any heavy maintenance and/or overhaul task that necessitates a disruption to normal scheduled operations will require written approval from the OWNER and coordination with the OWNER before it is performed.

In the event a requested heavy maintenance or overhaul item is rejected by OWNER and subsequently a failure occurs due to the rejection of the heavy maintenance or overhaul item, downtime for the purposes of calculating vehicle availability will be excluded and Contractor will not be deemed in violation of this contract.

2.2.7 MAINTENANCE EQUIPMENT/TOOLS AND JANITORIAL

The OWNER's inventory of maintenance equipment, tools, office and shop furniture and office equipment will be maintained by CONTRACTOR in good working condition for their intended use and stored and protected from harmful environments.

2.2.8 MAINTENANCE ADMINISTRATION

The CONTRACTOR will provide all required personnel, supplies and materials, and will perform the administration of the ATS maintenance program. Maintenance administration includes maintenance management, personnel training inventory control and contribution of hard copy reports to OWNER's Maintenance Management Program (MAXIMO).

During the term of this contract period, it is envisioned that the OWNER and CONTRACTOR will work together for the purposes of transferring the CONTRACTOR's current Management Information System (SIMS) over to the OWNER'S Maintenance Management Program (MAXIMO). This work will be funded by the OWNER under separate Purchase Order to be issued to CONTRACTOR by OWNER.

2.2.8.1 MAINTENANCE MANAGEMENT

For the purposes of OWNER/CONTRACTOR relations, Contractor's Service Delivery Center (SDC) Manager will be the single point of contact to the OWNER.

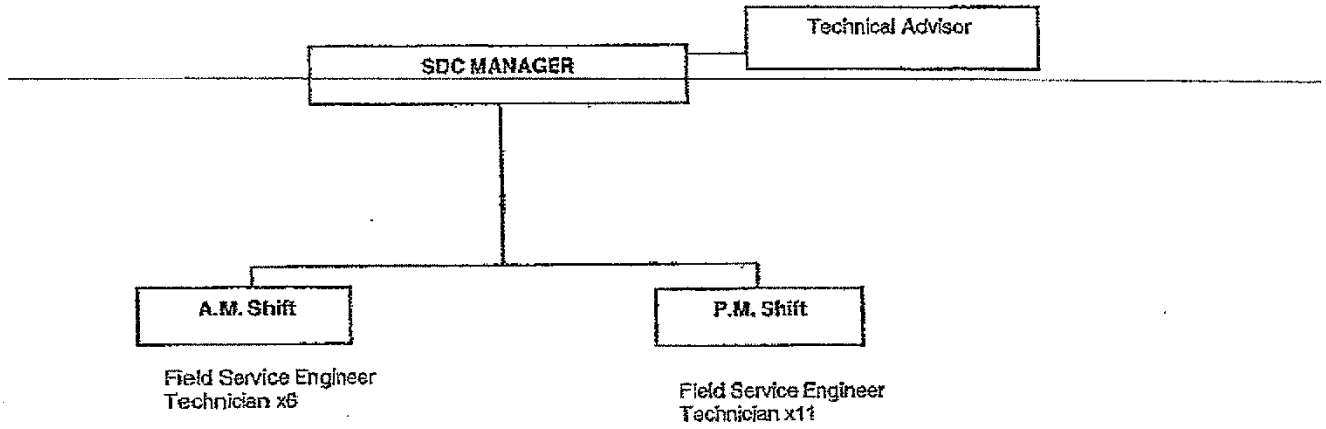
Maintenance management comprises all of the functions required to efficiently manage the maintenance activities, including:

- Supervision and clerical support
- Preparing and updating maintenance records
- Personnel administration
- Maintenance scheduling

2.2.8.2 PERSONNEL TRAINING

Personnel training includes all functions needed to train all CONTRACTOR ATS maintenance personnel.

O & M – Las Vegas APM Service Delivery Center



2.2.8.3 INVENTORY CONTROL

Inventory Control includes all activities required to maintain an adequate supply, of materials, supplies and equipment required to maintain the ATS. Included are such functions as purchasing and disbursement, receiving, cataloging, storage and requisition control. The CONTRACTOR will maintain inventory records which include equipment listings, required quantities and reorder points. Such records will be updated annually and submitted to OWNER thirty (30) days prior to the anniversary of the contract signature date.

2.2.8.4 OBSOLESCENCE

If any component, spare part, or subsystem of the ATS has been confirmed to be obsolete, or cannot be acquired or manufactured, the CONTRACTOR will advise the OWNER in a timely fashion of such obsolete component, spare part or subsystem. CONTRACTOR will work with the OWNER and recommend if possible, such parts that are equal or better in quality and operation, than original parts at no additional cost to the OWNER. However, in no event shall the CONTRACTOR be liable for losses or damages, including need for additional Services and/or Material/Equipment, arising out of or related to obsolescence of the ATS due to reasons out of the CONTRACTOR's control.

2.3 ANNUAL DETERMINATION

The CONTRACTOR will make an annual determination of spare parts inventory requirements versus actual inventory and report the results with recommendations to the OWNER along with submittal of the annual inventory. Any parts deemed obsolete by the CONTRACTOR or OWNER will be delivered to the OWNER, and the part(s) will be removed from the inventory list.

EXHIBIT "A"

ATS MAINTENANCE AGREEMENT

A1.0 SERVICE DEPENDABILITY

Service dependability is the measure of the ATS system's effectiveness both in providing operating vehicles in a timely manner to all patrons and in transporting these patrons to their destinations with minimum delays. The approach outlined herein does not attempt to quantify dependability by means of a single number, but rather to indicate dependability through three readily measurable quantities. These quantities are downtime, system availability, and schedule adherence, which taken together provide a measure of the degree to which the System provides service when subjected to dynamic and static system failures.

A1.1 DOWNTIME EVENT

A downtime event is defined as one or more system related problems which cause unscheduled stoppage of one or more on any portion of the guideway. (Inability to dispatch from a station is also considered an unscheduled stoppage). Stoppage resulting from causes listed as exclusions in Paragraph A1.5 will not be counted as downtime events.

A1.2 DOWNTIME AND DOWNTIME LIMITS

Downtime is the accumulated time (in minutes) of all downtime events as defined in Paragraph A1.1, downtime for an event during synchronized on-call, single lane on-call or single lane shuttle operation will include all time from when train movement is interrupted, and the CONTRACTOR's on-duty maintenance representative has been notified of the event, until all trains stopped by the event have restarted. Downtime will be accumulated separately for each guideway.

Downtime for an event during synchronized double shuttle operation will be computed as follows:

- When movement of only one train is affected, downtime for the event will include half the time from when train movement is interrupted and the CONTRACTOR's on duty maintenance representative is notified of the event, until the train stopped by the event has been restarted.

- When the movement of both trains is affected, downtime for the event will include all time from when trains movement is interrupted and the CONTRACTOR's on duty maintenance representative is notified of the event, until all trains stopped by the event have been restarted.

A1.3 SYSTEM AVAILABILITY AND EQUIPMENT HISTORY

Performance reports of system availability and equipment history will be made available to the OWNER immediately upon request.

A1.4 SYSTEM AVAILABILITY (SA)

This is the actual time (in minutes) in which the system provides normal service and is equal to the number of scheduled operating minutes less the total downtime resulting from downtime events. Availability will be separately calculated for each guideway.

Guideway availability is measured by the relationship:

$$GA = \frac{\text{system operating time}}{\text{system scheduled operating time}}$$

System availability (SA) will be the average of the sum of the guideway availabilities (GA).

A1.5 EXCLUSIONS

Certain events may cause stoppage of the system but are not considered downtime events. The following are considered exclusions for the purpose of determining downtime and system availability:

- Willful passenger-induced system interruptions
- Interruptions caused by unauthorized intrusions of persons or animate or inanimate objects into the system
- Interruptions caused by non-system induced loss of service
- Periods of normal operating time when the specified environmental limits are exceeded
- Interruptions that result in stoppages equal to or less than three (3) minutes for the Satellite C ATS or five (5) minutes for the Satellite D ATS during which time corrective action effectively restores the vehicle(s) to service
- Acts of vandalism causing system interruptions

A1.6 SYSTEM OPERATING SCHEDULE

The ATS is designed for 24 hours a day operation. The estimated operating times and modes are as follows:

- 17 hours - Synchronized Double Shuttle
- 7 hours - Single Lane Shuttle

The OWNER may alter this schedule to accommodate periodic, short term high/low demand fluctuations in airport operations. Permanent changes to the operating schedule, if required, will be developed in consultations with the CONTRACTOR.

FORM A
INSURANCE REQUIREMENTS

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT

CBE-552

TO ENSURE COMPLIANCE WITH THE CONTRACT, CONTRACTOR SHOULD FORWARD THE FOLLOWING INSURANCE CLAUSE AND SAMPLE INSURANCE FORM TO THEIR INSURANCE AGENT PRIOR TO CONTRACT APPROVAL.

1. Format/Time: The CONTRACTOR shall provide Owner with Certificates of Insurance, and endorsements affecting coverage per enclosed sample formats as required by this Agreement within ten (10) calendar days after the award by the Owner. All policy endorsements shall be signed by a person authorized by that insurer and who is licensed by the State of Nevada in accordance with NRS 680A.300. All required aggregate limits shall be disclosed and amounts entered on the Certificate of Insurance, and shall be maintained for the duration of the contract and any renewal periods.

2. Best Key Rating: The Owner requires insurance carriers to maintain during the contract term, a Best Key Rating of A⁻ VIII or higher, which shall be fully disclosed and entered on the Certificate of Insurance. (see sample form)

3. Owner Coverage: The Owner, its officer's employees, agents, and volunteers must be expressly covered as additional insured's except on workers' compensation and professional liability coverage. The CONTRACTOR's insurance shall be primary as respects the Owner, its officers, employees, agents, and volunteers.

4. Endorsement/Cancellation: The CONTRACTOR's general and automobile liability insurance policies shall be endorsed to recognize specifically the CONTRACTOR's contractual obligation of additional insured to Owner and must note that the Owner will be given thirty (30) calendar days advance notice by certified mail "return receipt requested" of any policy changes, cancellations, or any erosion of insurance limits.

5. Deductibles: All deductibles and self-insured retentions shall be fully disclosed on the Certificates of Insurance and may not exceed **$10,000** without the express written permission of the Owner.

6. Aggregate Limits: If aggregate limits are imposed on bodily injury and property damage, then the amount of such limits must not be less than **$2,000,000.**

7. Commercial General Liability: Subject to paragraph 6 of this attachment, the CONTRACTOR shall maintain limits of no less than **$1,000,000** combined single limit per occurrence for bodily injury (including death), personal injury and property damages. Commercial general liability coverage shall be on a "per occurrence" basis only, not "claims made," and be provided either on a Commercial General Liability or a Broad Form Comprehensive General Liability (including a Broad Form CGL endorsement) insurance form.

8. Automobile Liability: Subject to paragraph 6 of this attachment, CONTRACTOR shall maintain limits of no less than $5,000,000 combined single limit per occurrence for bodily injury and property damage, to include, but not be limited to, coverage against all insurance claims for injuries to persons or damages to property which may arise from services rendered by CONTRACTOR and any auto used for the performance of services under this contract.

9. Environmental and Clean-Up Liability: Environmental insurance shall not be less than **$1,000,000** aggregate for the duration of this contract.

10. Workers' Compensation: The CONTRACTOR shall obtain and maintain for the duration of this contract, a work certificate and/or a certificate issued by an insurer qualified to underwrite workers' compensation insurance in the State of Nevada, in accordance with Nevada Revised Statutes Chapters 616A-616D, inclusive, provided, however, a CONTRACTOR who is a Sole Proprietor shall be required to submit an affidavit (Attachment 1) indicating that the CONTRACTOR has elected not to be included in the terms, conditions and provisions of Chapters 616A-616D, inclusive, and is otherwise in compliance with those terms, conditions and provisions.

11. Failure To Maintain Coverage: If the CONTRACTOR fails to maintain any of the insurance coverage as required herein, Owner may withhold payment, order the //TYPE// to stop the work, declare the CONTRACTOR in breach, suspend or terminate the contract, assess liquidated damages as defined herein.

12. Damages: The CONTRACTOR is required to remedy all injuries to persons and damage or loss to any property of Owner, caused in whole or in part by the CONTRACTOR, their subcontractors or anyone employed, directed or supervised by CONTRACTOR.

13. Cost: The CONTRACTOR shall pay all associated costs for the specified insurance. The cost shall be included in the contract price(s).

14. Insurance Submittal Address: All insurance Certificates requested shall be sent to the Clark County Department of Aviation, Purchasing, 3rd Floor, **Attention: Senior Financial Office Specialist**, 5757 Wayne Newton Boulevard, P.O. Box 11005, Las Vegas, NV 89111-1005.

15. Insurance Form Instructions: the CONTRACTOR's Insurance Company representative must fill in the following information:

1. Insurance Broker's name, complete address, phone and fax numbers.
2. CONTRACTOR's name, complete address, phone and fax numbers.
3. Insurance Company's Best Key Rating, A⁻ (minus) VIII (eight) or higher must be shown on certificate
4. Commercial General Liability (Per Occurrence)
   (A) Policy Number
   (B) Policy Effective Date
   (C) Policy Expiration Date
   (D) General Aggregate ($2,000,000)
   (E) Products-Completed Operations Aggregate ($2,000,000)
   (F) Personal & Advertising Injury ($1,000,000)
   (G) Each Occurrence ($1,000,000)
   (H) Fire Damage ($50,000)
   (I) Medical Expenses ($5,000)
5. Automobile Liability (Any Auto)
   (A) Policy Number
   (B) Policy Effective Date
   (C) Policy Expiration Date
   (D) Combined Single Limit ($5,000,000)
6. Worker's Compensation
7. Description: Bid Number and Name of Contract (must be identified on the initial insurance form and each renewal form).
8. Certificate Holder:
   Clark County
   c/o Department of Aviation-Purchasing
   3rd Floor
   5757 Wayne Newton Boulevard
   P.O. Box 11005
9. Authorized Agent Signature

CLARK COUNTY CERTIFICATE OF INSURANCE

ISSUED DAY (MM/DD/YY)

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
1. INSURANCE BROKERS NAME, ADDRESS, PHONE & FAX NUMBERS	COMPANIES AFFORDING COVERAGE	3. BEST'S RATING
	COMPANY LETTER A *LIST ALL COMPANY'S AFFORDING*	COMPANY'S
INSURED	COMPANY LETTER B *COVERAGE FOR EACH POLICY*	BEST KEY
2. NAME, ADDRESS, PHONE & FAX NUMBERS	COMPANY LETTER C	RATING
	COMPANY LETTER D	*A- VIII (8) or*
	COMPANY LETTER E	*HIGHER*

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN. THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
4.	GENERAL LIABILITY	(A)	(B)	(C)	GENERAL AGGREGATE	$(D)	2,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$(E)	2,000,000
	CLAIMS MADE X OCCUR				PERSONAL & ADV. INJURY	$(F)	1,000,000
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$(G)	1,000,000
	UNDERGROUND EXPLOSION & COLLAPSE	(J) Deductible/Retention			FIRE DAMAGE (Any one fire)	$(H)	50,000
	INDEPENDENT CONTRACTOR				MED EXPENSE (Any one person)	$(I)	5,000
5.	AUTOMOBILE LIABILITY	(K)	(L)	(M)	COMBINED SINGLE LIMIT	$(N)	5,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$	
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$	
	SCHEDULED AUTOS						
	HIRED AUTOS				PROPERTY DAMAGE	$	
	NON-OWNED AUTOS						
	GARAGE LIABILITY	(O)Deductible/Retention					
	EXCESS LIABILITY				EACH OCCURRENCE	$	
	UMBRELLA FORM				AGGREGATE	$	
	OTHER THAN UMBRELLA FORM						
6.	X WORKER'S COMPENSATION				STATUTORY LIMITS		
					EACH ACCIDENT	$	
					DISEASE-POLICY LIMIT	$	
					DISEASE-EACH EMPLOYEE	$	
	OTHER PROFESSIONAL LIABILITY						

7. DESCRIPTION: CLARK COUNTY, ITS OFFICERS, EMPLOYEES, AGENTS, AND VOLUNTEERS ARE INSUREDS WITH RESPECT TO LIABILITY ARISING OUT OF THE ACTIVITIES BY OR ON BEHALF OF THE ADDITIONAL INSURED IN CONNECTION WITH THIS PROJECT. PER ISO FORM ENCLOSED (ENDORSEMENT FORM)

8. CERTIFICATE HOLDER	CANCELLATION
CLARK COUNTY C/O DEPARTMENT OF AVIATION PURCHASING 5757 WAYNE NEWTON BLVD. P.O. BOX 11005 LAS VEGAS, NV 89111-1005	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. 9. Authorized Agent

NAMED INSURED:					
POLICY PERIOD:		TO		ENDORSEMENT EFFECTIVE DATE:	

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

ADDITIONAL INSURED:

CLARK COUNTY, ITS OFFICERS, EMPLOYEES, AGENTS, AND VOLUNTEERS

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

Automobile Liability - ($5,000,000) Policy No.:

General Liability - ($1,000,000) Policy No.:

SCHEDULE (If required)

Name of Person or Organization: SAMPLE

Locations and Description of Completed Operations:

(If no entry appears above, information required to complete this endorsement will be shown in the declarations as applicable to this endorsement.)

Section II

Who is insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising our of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

Authorized Agent (print name) Signature Date

FORM B

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT
CBE-552

BUSINESS DESIGNATION

FOR INFORMATIONAL PURPOSES ONLY:

The above referenced firm is a ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE ☐LBE as defined below.

STATE OF NEVADA BUSINESSES

MINORITY OWNED BUSINESS ENTERPRISE (MBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity.

WOMEN OWNED BUSINESS ENTERPRISE (WBE): An independent and continuing Nevada business for profit that performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more women.

PHYSICALLY-CHALLENGED BUSINESS ENTERPRISE (PBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.

SMALL BUSINESS ENTERPRISE (SBE): An independent and continuing Nevada business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed two million dollars ($2,000,000).

NEVADA BUSINESS ENTERPRISE (NBE): Any Nevada business that has the resources necessary to sufficiently perform identified County projects, and is owned or controlled by individuals that are not designated as socially or economically disadvantaged.

BUSINESSES IN OTHER STATES

LARGE BUSINESS ENTERPRISE (LBE): An independent and continuing business for profit, which performs a commercially useful function and is not located in Nevada.

FORM C

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT
CBE-552

SUBCONTRACTOR INFORMATION

It is our intent to utilize the following MBE, WBE, PBE, SBE, and NBE subcontractors in association with this Contract:

1. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

2. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

3. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

4. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

5. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

6. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

☐ No MBE, WBE, PBE, SBE, nor NBE subcontractors will be used.

FORM D

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT
CBE-552

AFFIDAVIT

I, _____, on behalf of my company, _____, being
(Name of Sole Proprietor) (Legal Name of Company)

duly sworn, depose and declare:

1. I am a Sole Proprietor;

2. I will not use the services of any employees in the performance of this contract, identified as Bid No. _____/RFP No. _____/CBE No. _____, entitled_____;

3. I have elected to not be included in the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive; and

4. I am otherwise in compliance with the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive.

I release Clark County from all liability associated with claims made against me and my company, in the performance of this contract, that relate to compliance with NRS Chapters 616A-616D, inclusive.

Signed this _____ day of _____, _____.

Signature

State of Nevada
County of Clark

On this _____ day of _____, _____, before the undersigned Notary Public, personally appeared _____, having proved on a satisfactory basis to be the person(s) whose name(s)_____subscribed to this instrument, and acknowledge that _____ executed it.

Witness my hand and official seal.

_____
Notary's Signature

FORM E
DISCLOSURE OF OWNERSHIP / PRINCIPALS

CONTRACT FOR MAINTENANCE OF
AUTOMATED TRANSIT SYSTEM EQUIPMENT
CBE-552

Type of Business:

☐Individual ☐Partnership ☐Limited Liability Company ☐Corporation ☐Trust ☐Other

Business Name (include d.b.a., if applicable): _____

Business Address: _____

_____

_____

Business Telephone: _____

Disclosure of Ownership:
All non-publicly traded corporate business entities must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the Board. "Business entities" include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations. Corporate entities shall list all Corporate Officers and Board of Directors in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use transactions, extends to the applicant and the landowner.

FULL NAME	TITLE

I certify under penalty of perjury, that all of the information provided herein is current, complete and accurate. I also understand that the Board will not take any action on land-use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

_____ _____
Signature/Capacity Print Name

_____
Date

ATTACHMENT 4
DISCLOSURE OF OWNERSHIP / PRINCIPALS

Type of Business:

☐ Individual ☐ Partnership ☐ Limited Liability Company ☒ Corporation ☐ Trust ☐ Other

Business Name (include d.b.a., if applicable): Bombardier Transportation (Holdings) USA Inc.

Business Address: 1501 Lebanon Church Road
Pittsburgh, PA 15236

Business Telephone: (412) 655-5700

Disclosure of Ownership:
All non-publicly traded corporate business entities must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the Board. "Business entities" include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations. Corporate entities shall list all Corporate Officers and Board of Directors in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use transactions, extends to the applicant and the landowner.

FULL NAME	TITLE
The ultimate owner of Bombardier Transportation (Holdings) USA Inc. is Bombardier, Inc., a publicly traded company.	

I certify under penalty of perjury, that all of the information provided herein is current, complete and accurate. I also understand that the Board will not take any action on land-use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

Signature/Capacity

Edward A. Gordon
Print Name

May 1, 2008
Date

Clark County Department of Aviation

01171

CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	Approval of Maintenance Agreement	Back-up:
Petitioner:	Randall H. Walker, Director of Aviation	Clerk Ref. #

Recommendation:

That the Board of County Commissioners approve and authorize the Director of Aviation to sign the Maintenance Agreement (CBE-552) between Clark County and Bombardier Transportation (Holdings) USA Inc. (Edward A. Gordon, Vice President APM Marketing and Keith Orton, Vice President, Finance).

FISCAL IMPACT:

Funds in the amount of $3,139,037.00 for contract year one, $3,225,250.00 for year two, $3,897,658.00 for year three, $4,700,600.00 for year four, and $5,027,063.00 for year five are available in the Airport Budget Fund (5201.701).

BACKGROUND:

Bombardier Transportation (Holdings) USA Inc. has maintained the Automated Transit System (ATS) since October 16, 2001. The ATS provides public transportation between McCarran International Airport's main terminal building and the C and D gates. Bombardier Transportation (Holdings) USA Inc. and Clark County Department of Aviation have reached a mutual agreement on the terms and conditions of the attached contract for continued ATS service and maintenance. During this contract, the ATS for Terminal 3 will become operational. The exact date when operations will commence has yet to be determined, however, the necessary funding has been included in the above amounts for contract year three, year four, and year five. The term of this contract is for the five (5) year period beginning July 1, 2008 through June 30, 2013.

In accordance with NRS 332.115.1 (c), the competitive bidding process is not recommended because the maintenance of the equipment can be performed more efficiently by a certain company and in accordance with NRS 332.115.1 (a), Bombardier Transportation (Holdings) USA Inc. is the only firm that can supply maintenance services for their product.

The agreement has been reviewed and approved as to form by the District Attorney's office.

Exhibit No. 3
Witness Walker
Date 9/26/12

KWD CCR# 711

Respectfully submitted,

RANDALL H. WALKER
Director of Aviation

Cleared for Agenda
6/3/2008

Agenda Item #
01152

LAS VEGAS
McCARRAN INTERNATIONAL AIRPORT

Department of Aviation
RANDALL H. WALKER
DIRECTOR
ROSEMARY A. VASSILIADIS
DEPUTY DIRECTOR
POSTAL BOX 11005
LAS VEGAS, NEVADA 89111-1005
(702) 261-5211
FAX (702) 597-6553
E-MAIL: webmaster@mccarran.com

VIA FACSIMILE AND MAIL

November 24, 2009

Mr. Michael Tanchek
Labor Commissioner
State of Nevada
555 E. Washington Avenue, Suite 4100
Las Vegas, Nevada 89101

Project: ATS Maintenance Contract CBE-552
Subject: Bombardier Transportation Holdings USA, Inc. – IUEC Alleged incorrect payment of prevailing wages for a public work project

Dear Mr. Tanchek:

Pursuant to Nevada Revised Statutes (NRS) 338.070(1) any public body and its officers or agents awarding a contract shall: (a) Investigate possible violations of the provisions of NRS 338.010 to 338.090, inclusive, committed in the course of the execution of the contract, and determine whether a violation has been committed and inform the labor commissioner of any such violations; (b) When making payments to the contractor of money becoming due under the contract, withhold and retain all sums forfeited pursuant to the provisions of NRS 338.010 to 338.090, inclusive or NAC 338.005 to 338.125 inclusive.

An investigation was initiated when the Clark County Department of Aviation received a copy of the Complaint filed by William H. Stanley, Organizing Director for the International Union of Elevator Contractors ("IUEC") from Deputy Labor Commissioner Keith Sakelhide. The Complaint submitted by Mr. Stanley identified the contract listed above and alleged that the employees of Bombardier Transportation Holdings (Bombardier) were performing work for a public work project and not being paid the prevailing wage related to a public work project.

The Clark County Department of Aviation has several significant maintenance contracts for the care of Airport Facilities that rest under the Department's Facilities area of responsibility. Per past practices and our District Attorney's Office interpretation with regard to such maintenance contracts, NRS 338.011 exempts contracts directly related to the normal operation of the county or the normal maintenance of its property. This law

was passed in 1981 after the Labor Commissioner was applying Chapter 338.010's inclusion of the word "repair" in the definition of public works to require all of the contracts for services entered into under Chapter 332 which had any "repair" component to have to comply with the provisions of Chapter 338. The Attorney General had issued an opinion that maintenance and repair were synonymous.

NRS 338.011 states the legislature's intention to recognize that Chapter 332 has its own requirements and that maintenance contracts entered into under that chapter are not subject to the public works requirements of Chapter 338 even though they include repair as one of the services being provided. NRS 332.115(1)(c) specifically refers to contracts for "additions to and repairs and maintenance," which further demonstrates legislative intent for maintenance contracts to be able to include repairs as part of the scope of work without making the contract subject to the public works project requirements in NRS Chapter 338.

The purpose of maintenance is to care for, preserve and keep in proper condition. It is obvious that maintenance work requires the inclusion of repairs in order to keep things operating and in proper condition. Windows need replacing. Lights need to be kept working. Sprinklers need repair. County vehicles need new brakes and the ATS System needs to be kept in operating condition. This is the case with this maintenance contract. It should be noted that the rehabilitation work needed for this equipment was handled under a separate contract, referred to as Contract 2305, ATS Modernization Project, that was addressed separately from this investigation. With this being said, the individual points outlined in the IUEC complaint are not valid because prevailing wages do not apply to a maintenance contract of this nature.

Further research on other maintenance contracts within the Clark County Department of Aviation and other local government entities has reinforced that this type of contract for maintenance and repair is not a public work.

It is the opinion of the District Attorney's office, Clark County Department of Aviation Purchasing Administration, and myself that this contract is a maintenance and repair

contract governed by NRS Chapter 332 and not a public work project subject to prevailing wage under NRS Chapter 338.

Sincerely,

Bob Kingston
Assistant Director, Facilities

cc: Keith Sakelhide, Deputy Labor Commissioner
William H. Stanley, Director of Organizing, International Union of Elevator Constructors
Michael Fetsko, President, Bombardier Transportation Holdings USA, Inc.
E. Lee Thomson, Chief Deputy District Attorney, Clark County District Attorney's Office
Randall Walker, Director, Department of Aviation
Rosemary Vassiliadis, Deputy Director, Department of Aviation
Steven Jay, Airport Engineer, Department of Aviation
Edward Munzing, Purchasing Administrator, Department of Aviation

LAS VEGAS
McCARRAN INTERNATIONAL AIRPORT

Department of Aviation
RANDALL H. WALKER
DIRECTOR
ROSEMARY A. VASSILIADIS
DEPUTY DIRECTOR
POSTAL BOX 11005
LAS VEGAS, NEVADA 89111-1005
(702) 261-5211
FAX (702) 597-[illegible]
E-MAIL: [illegible]

March 30, 2010

Michael Tanchek
Nevada Labor Commissioner
Office of the Labor Commissioner
Department of Business and Industry
State of Nevada
555 E. Washington Avenue, Suite 4100
Las Vegas, NV 89101-1069

Project: ATS Maintenance Contract, Contract #CBB-332
Subject: Bombardier Transportation Holdings USA, Inc. – Alleged Non-Payment of Prevailing Wages. Revised Determination

Pursuant to Nevada Revised Statute (NRS) 338.070(1) any public body and its officers or agents awarding a contract shall: (a) Investigate possible violations of the provisions of NRS 338.010 to 338.090, inclusive, committed in the course of the execution of the contract, and determine whether a violation has been committed and inform the labor commissioner of any such violations; (b) When making payments to the contractor of money becoming due under the contract, withhold and retain all sums forfeited pursuant to the provisions of NRS 338.010 to 338.090, inclusive.

In as much as this contract was awarded under NRS 332 and not NRS 338, the Clark County Department of Aviation (CCDOA), as a courtesy to the Labor Commissioner conducted an investigation after the CCDOA received a copy of the Complaint filed by William H. Stanley, Organizing Director for the International Union of Elevator Constructors (IUEC) from Deputy Labor Commissioner Keith Sakelhide. The Complaint submitted by Mr. Stanley identified the project listed above and the employees of Bombardier Transportation Holdings (Bombardier) performing work for an alleged prevailing wage project and not being paid the prevailing wage. Additionally, all references cited by Mr. Stanley were legal precedents set outside the state of Nevada and have no bearing on the Nevada Revised Statutes governing Public Works.

A subsequent investigation ensued beginning with a review of the contract issued on July 1, 2008 for Maintenance of Automated Transit System Equipment.

Exhibit No. 5
Witness Walker
Date 9/26/12

KWD CCR# 711

Additionally, interviews were conducted with Bombardier on site managers as well as most of the Bombardier employees performing the work at McCarran International Airport.

This contract identifies various stages of maintenance and subsequent repairs on the equipment and vehicle control equipment. It is noted that all equipment from the vehicles themselves to parts, spares and tools belong to McCarran International Airport.

This contract is designed to provide minimum down time of the equipment thereby maximizing the safety and availability of the ATS to the airport customers.

The contract identifies Extent of the Work: "The work under this contract shall include furnishing all labor and materials necessary to accomplish the inspection, cleaning, adjustment, preventative maintenance, lubrication, repair, testing, replacement of worn parts and repair of spare equipment for the ATS." This was verified by both Bombardier managers and employees.

Varieties of tasks are involved with this maintenance and repair contract. The preventative maintenance schedules are followed as time is allotted and many of the repair items are noted during these scheduled inspections and maintenance tasks. These repairs are attended to based on severity and time constraints. Other items are identified during normal operations of the trams when a situation occurs that needs immediate attention to ensure safe and continuous operations of these trams.

Throughout the investigation process none of the work appeared to be modernization, upgrades, remodels, etc... All of the work that was identified through interviews and observations was maintenance of the existing equipment and therefore not subject to the provisions of NRS 338.

Pursuant to Nevada Administrative Code (NAC) 338.110, a person who has been served a copy of a determination pursuant to subsection 1 and who is aggrieved by the determination may file a written objection with the labor commissioner within 15 days after the date of service of this determination. Such an objection must be accompanied by a short statement of the grounds for the objection and evidence substantiating the objection. Your objection letter and attachments must be received by the Labor Commissioner within 15 days of receipt of this letter. Mail your objection package directly to:

Labor Commissioner
Office of the Labor Commissioner
555 E. Washington Ave., Ste 4100
Las Vegas, NV 89101

If an objection to this determination is not received by the due date, the Labor Commissioner will issue an Order Affirming the Determination.

Sincerely,

Bob Kingston
Assistant Director, Facilities

Attachments:

cc:
Keith Sakelhide, Deputy Labor Commissioner
William H. Stanley, Director of Organizing, International Union of Elevator Constructors
Susan Hobbes, Contracts Manager, Clark County Department of Aviation
E. Lee Thomson, Chief Deputy District Attorney, Clark County District Attorney's Office
Randall Walker, Director, Department of Aviation
Rosemary Vassiliadis, Deputy Director, Department of Aviation
Steven Jay, Airport Engineer, Department of Aviation
Edward Munzing, Purchasing Administrator, Department of Aviation
Mike Moran, Bechtel Infrastructure Corporation

LAS VEGAS
McCARRAN INTERNATIONAL AIRPORT

Department of Aviation
RANDALL H. WALKER
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ROSEMARY A. VASSILIADIS
DEPUTY DIRECTOR
POSTAL BOX 11005
LAS VEGAS, NEVADA 89111-1005
(702) 261-5211
FAX (702) 597-6553
E-MAIL: webmaster@mccarran.com

October 16, 2009

Via facsimile: 702-486-1190

Ms. Margi Grein
Executive Officer
Nevada State Contractor's Board
2310 Corporate Circle, Suite 200
Henderson, NV 89074

Re: Application for License – Bombardier Transportation (Holdings) USA, Inc.

Dear Ms. Grein:

I understand that the Nevada State Contractor's Board will consider Bombardier Transportation (Holdings) USA, Inc.'s (Bombardier) application for license at its October 22, 2009 meeting. The Department of Aviation supports Bombardier's application and urges the Board to promptly issue the A22 license to Bombardier.

Please understand that Bombardier was the original equipment manufacturer for the automated transit systems (ATS) at McCarran Airport and currently maintains those systems. Bombardier has recently modernized the current C and D gate systems and is the selected vendor for the supply and installation of a new automated people mover system (APM) for Terminal 3. The ongoing maintenance of our existing systems and the timely installation of the new system for Terminal 3 are vital and integral to the airport's operation and success. Delay in granting a license will only serve to disrupt the smooth operation of the ATS and the work necessary to complete the C & D modernization and the Terminal 3 project. Such disruption is not in the best interests of the Department of Aviation, the community, and the traveling public.

We respectfully request the Board to expedite the approval of Bombardier's application.

Sincerely,

RANDALL H. WALKER
Director of Aviation

Exhibit No. 6
Witness Walker
Date 9/26/12

KWD CCR# 711

McCARRAN CAREERS

Airport ATS Technician I/II

Class Code: N24329

Bargaining Unit: General

CLARK COUNTY DEPARTMENT OF AVIATION
Revision Date: May 23, 2011

SALARY RANGE

$17.08 - $26.44 Hourly
$1,366.40 - $2,115.20 Biweekly
$2,960.53 - $4,582.93 Monthly
$35,526.40 - $54,995.20 Annually

JOB SUMMARY/CLASS CHARACTERISTICS:

Performs semi-skilled and skilled work in the maintenance and repair of the Airport's Automated Transit Systems (ATS).

EXAMPLES OF DUTIES:

Performs unskilled and semi-skilled electrical, mechanical, electro-mechanical and pneumatic work in the operation, maintenance and repair of the airport's automated transit systems. Tests, documents and maintains logs and records related to the operations and maintenance of the ATS systems. Troubleshoots complex ATS system and subsystem components to identify problems or failures and implements repairs. Conducts pre-defined inspections on the ATS systems and subsystems to ensure they operate in accordance with design. Maintains and services a variety of test equipment and hand and power tools; keeps inventory of frequently used supplies and hardware; conducts periodic inventory audits. Maintains records of work performed and materials used. Estimates materials, tools and equipment needed for work assignments. Loads and unloads trucks, picks up and delivers materials and equipment, cleans and maintains tools and equipment, and maintains work areas in a clean and orderly condition. Operates and adjusts a variety of hand and power tools and equipment common to maintenance and repair activities. Conducts safety and technical training on ATS related systems and subsystems as assigned; troubleshoots problems and repairs as required. May operate light equipment and drive a truck as assigned. Observes safe work methods and uses safety equipment; attends safety training, technical training and meetings. Utilizes an automated maintenance management system (Maximo) to record and document work performed. Carries out assignments in a non-disruptive manner in areas receiving heavy public use; responds to questions and comments from the public. Cleans trash and other debris from tram guideways, tunnels, stations and maintenance areas.

QUALIFICATIONS:

Knowledge of: Airport ATS Technician I: Electronic, mechanical, electro-mechanical and pneumatic systems, subsystems and components related to automated transit systems; use and minor maintenance of commonly used hand, power and general maintenance tools and equipment; safe work methods and safety regulations pertaining to the work; basic record keeping practices.

Exhibit No. 7
Witness Walker
Date 9/26/12

Bombardier 01180

KWD CCR# 711

Airport ATS Technician II: Transit vehicle and wayside systems and subsystems; and methods and materials used, and techniques for operating, maintaining and repairing automated transit systems.

Skill in: Airport ATS Technician I: Safely using and maintaining hand and power tools related to the work; reading and interpreting plans, maps, drawings, schematics, manuals and instructions; understanding and following oral and written directions; preparing basic records and reports of work performed; working without close supervision in standard work situations; contributing effectively to the accomplishments of team or work unit goals, objectives and activities.

Airport ATS Technician II: Performing general ATS maintenance work, individually or as a member of a crew/team; diagnosing electronic and mechanical failures; using initiative and independent judgment within established procedural guidelines.

PHYSICAL DEMANDS:

Mobility to work in a typical shop or related maintenance setting, including operating typical trade equipment, hand and power tools and standard office equipment, and to drive a motor vehicle to various work sites; stamina to stand, sit, walk, balance, stoop, kneel, crouch, crawl and climb and to work in confined or awkward spaces for an extended period of time; strength to lift and maneuver materials and equipment weighing up to 100 pounds with proper equipment; vision to read printed materials and a computer screen; color vision and depth perception; hearing and speech to communicate in person or over a radio or telephone. Accommodation may be made for some of these physical demands for otherwise qualified individuals who require and request such accommodation.

REQUIREMENTS:

Airport ATS Technician I: Equivalent to graduation from high school and six (6) years of mechanical, electro-mechanical, electronic and pneumatic experience. An apprenticeship in any of these areas will substitute on a year to year basis for experience.

Airport ATS Technician II: In addition to the above, two (2) years of maintenance and repair experience, in the area of automated transit systems.

Licensing and Certification: Must possess a valid Class C Nevada driver's license at time of hire.

Residency Requirement: Permanent employees must maintain a principal place of residency within the boundaries of Clark County and provide proof of compliance with Nevada motor vehicle registration and drivers' license laws within 90 days of employment.

Background Check: Employment with the Department of Aviation is contingent upon completion of an education/experience background investigation, a fingerprint-based criminal history record check processed by the FBI, and upon the ability to be granted a security badge as mandated by the Transportation Security Administration. Note: all prospective hires must present two original government issued ID's upon acceptance of job offer. Examples of acceptable ID's include a Passport, Driver's License or DMV issued ID, birth certificate, Social Security card, Voter Registration card, school issued ID with picture, etc.

NOTE:

This class specification lists the major duties and requirements of the job and is not all-inclusive. Incumbent(s) may be expected to perform job-related duties other than those contained in this document and may be required to have specific job-related knowledge and skills.

EXHIBIT 20

01183

Analysis of the Airport ATS Technician Job at McCarran International Airport Las Vegas, NV

Expert Report

Kevin R. Murphy, Ph.D.

Lamorinda Consulting LLC
1 Camino Sobrante, Suite 201
Orinda CA 94563
(925) 258-9972

August 2, 2012

Exhibit No. 1
Witness Murphy
Date 12/11/12
KWD CCR# 711

01184

Expertise

I am an Affiliate Professor of Psychology and a Consulting Expert at Lamorinda Consulting LLC, with a specialization in Industrial/Organizational (I/O) Psychology, which deals with analyzing behavior and performance in the workplace. I am the Past President of Society for Industrial Psychology and past Editor of *Journal of Applied Psychology*, a leading scientific journal in the field. I have 30 years of experience as an I/O psychologist, and have consulted for organizations throughout the country.

Job analysis is one of the core areas of I/O psychology, and I have experience in job analysis in a number of industries. I have drawn on that experience to conduct an analysis of the job performed by Airport ATS Technicians at McCarran International Airport.

Methods

I used several methods to analyze the job of Airport ATS Technician, and to compare it to the job of Elevator Constructors (this job class is labeled Elevator Installers/Repairers in U.S. Department of Labor documents).

(1) I visited and observed several of the areas in which Airport ATS Technicians at McCarran International Airport perform their duties, examined tools, equipment, and facilities used in performing this work, and received explanations of the work performed in different areas.

(2) I interviewed four experienced Airport Technicians (1 ATS-I, 3 ATS-II, with an average of 8 years of experience in this or in similar jobs) to obtain detailed descriptions of the work they performed. I also obtained ratings on job analysis questionnaires from these subject matter experts.

(3) I consulted numerous publications describing the tasks, maintenance/repair procedures, and tools and equipment used in the Airport ATS Technicians at McCarran International Airport. These included manuals currently used at this Airport as well as publications comparing the technologies and service procedures used in Automated People Mover systems to the technologies and service procedures used in Elevator Installation and Repair.

(4) I obtained a detailed analysis of the work activities, knowledge, abilities, skills, and experience required in the job of Elevator Installers/Repairers from the U.S. Department of Labor's *O*NET* (*O*NET* is the Department of Labor's computerized database of occupational information for a wide range of jobs).

The *O*NET* Occupational Profile for Elevator Installers and Repairers has an occupation code of 47-4021.00.

(5) I compared the job of Airport ATS Technicians at McCarran International Airport with the description of the job performed by Elevator Installers and Repairers.

Conclusions

On the basis of a comparison of the tasks performed, the skills, knowledge and abilities needed to succeed in the job, and the most important work activities in the job, I concluded:

(1) The job of Airport ATS Technicians at McCarran International Airport requires virtually all of the knowledge, skills, abilities, and experience required of Elevator Installer/Repairers.

(2) The work activities performed by Airport ATS Technicians overlap substantially with those performed by Elevator Installer/Repairers.

(3) The job of Airport ATS Technicians is comparable to, and perhaps more demanding than the job of Elevator Installer/Repairers.

(4) The job of Airport ATS Technicians at McCarran International Airport is appropriately classified as an Elevator Constructor/Installer/Repairer.

Kevin R. Murphy — Date: 8-2-12

Documents Reviewed

1. O*NET Summary Report for 47-4021.00 - Elevator Installers and Repairers
2. O*NET Summary Report for 49-3043.00 - Rail Car Repairers
3. McCarran Airport APM Tool List
4. Elevator Constructor Tool List
5. ASCE Automated People Mover Standards - Parts 1-4
6. Clark County Airport ATS Technician I/II job description
7. Clark County Airport ATS Supervisor job description
8. Articles by Lawrence Fabian
    a. Horizontal Elevators – September 1993
    b. Horizontal Elevators – April 1997
    c. Market-Ready Horizontal Links – September 1999

Kevin R. Murphy, PhD

1415 Glen Eagle Court, Fort Collins, CO 80525
tel 814-769-1988
Murphy@LamorindaConsultingllc.com

EDUCATION

Ph.D.	The Pennsylvania State University, 1979 Major: Industrial/Organizational Psychology Minors: Multivariate Statistics; Psychometrics
M.S.	Rensselaer Polytechnic Institute, 1976 Major: Industrial/Organizational Psychology
B.A.	Siena College, 1974 Major: Psychology

PROFESSIONAL EMPLOYMENT

2011 – present	Affiliate Professor of Psychology, Pennsylvania State University
2010 – 2012	Chief Executive Officer, Landy Litigation Support Group
2008 – 2012	Senior Testifying Expert, Landy Litigation Support Group
2006 – 2011	Professor of Psychology and Information Sciences and Technology Pennsylvania State University
2006 – 2007	Director, International Center for the Study of Terrorism, Pennsylvania State University
2003 – 2006	Head, Department of Psychology, Pennsylvania State University
2002 – 2006	Professor of Psychology, Pennsylvania State University
1988 – 2000	Professor of Psychology, Colorado State University
1986 – 1988	Associate Professor of Psychology, Colorado State University
1984 – 1986	Assistant Professor of Psychology, Colorado State University
1981 – 1984	Assistant Professor of Psychology, New York University
1979 – 1981	Assistant Professor of Psychology Rice University

VISITING APPOINTMENTS

2011 - present	University of Limerick, Ireland, External Examiner
1992	Visiting Scientist, Navy Personnel Research and Development Center
1991	Department of Psychology and School of Business Administration, University of California,Berkeley
1988 - 1989	Department of Personnel and Employment Relations, School of Business, Univerity of Limerick, Ireland
1985	Visiting Scientist, Navy Personnel Research and Development Center
1977 – 1978	Department of Psychology, University of Stockholm, Sweden

EDITORIAL POSITIONS

2012 – present	Incoming Editor, *Industrial and Organizational Psychology: Perspectives on Science and Practice*
2011	Senior Advisory Board, *Encyclopedia of Industrial and Organizational Psychology*, (Sage)
2010 – present	Series co-Editor, *Applied Psychology Series*, Taylor & Francis
2002	Guest Editor, *Group and Organizational Management*, Special Issue: Performance Appraisal: Evolution and Change (A.Tziner, K. Murphy & J. Cleveland, Eds.)
1996 – 2002	Editor, *Journal of Applied Psychology*
1991 – 1996	Associate Editor, *Journal of Applied Psychology*

EDITORIAL BOARDS

2011 – present	*Journal of Management*
2008 – present	*Journal of Applied Psychology*
2007 – present	*Behavioral Sciences of Terrorism and Political Aggression*
2007 – 2011	*Industrial and Organizational Psychology: Perspectives on Science and Practice*
2002 – present	*Personnel Psychology*
1999 – present	*International Journal of Management Reviews*
1998 – present	*Journal of Industrial Psychology*
1997 – present	*Human Resource Management Review*
1991 – present	*International Journal of Selection and Assessment*
1991 – 1993	*Journal of Vocational Behavior*
1990 – 1996	*Personnel Psychology*
1989 – 1991	*Journal of Applied Psychology*
1988 – present	*Human Performance*

GRANTS, FELLOWSHIPS AND CONTRACTS

Development of a Deterrence Framework: Social Science Contributions. Defense Threat Reduction Agency, 2008, $153,000

Linking UK Content Expertise with Computer-Based Analysis for Prediction of Individual and Group-Related Activities. Office of Naval Research. 2008-2011, co-PI, $525,000

Evaluation of Light-based System for Disabling Target Individuals. ARL-Intelligent Optical Systems, Torrence, CA, 2007-2008 - $13,000

Evaluation of Methods for Drawing Inferences About Non-State Actors' Perceptions of the Risks and Benefits of Seeking and Acquiring WMD, Defense Threat Reduction Agency, 2007, $113,000

Applications of "Psychology of Terrorism" Studies to Combating Nuclear Weapons Acquisition and Use. Defense Threat Reduction Agency, 2007, $50,000

Anomolous Behavior Detection. Office of Naval Research, 2005-2008, co-PI, $225,000

Study to Quantify the Benefits and Costs of Simulated versus Live-Fire Training at USMC Ranges, US Marine Corps Systems Command, 2006-2008, $584,213

Evaluate Recruiting Efficiency, US Marine Corps Recruiting Command, 2001-2003, $368,750

Validation of FACTOR 1000 for pre-employment applications, Performance Factors, 1995, $10,664

Assessing Pre-Employment Alcohol Testing, American Trucking Association, Summer, 1994, $5,000

Assessing the Performance of Surface Warfare Officers, U.S. Army Research Office, TCN 93-453, 1993, $15,798.

ASEE/U.S. Navy Sabbatical Fellowship, Navy Personnel Research and Development Center, Winter, 1992.

Effects of employee drug testing on work attitudes and behaviors, NIDA Grant 1R01DA005814-011989, $84,037. Reprinted in Moore, P. (1990). Models for success: A look at grant-winning proposals. Alexandria, VA. Capitol Publications.

Officer Career Model Development, U. S. Army Research Office, DO 1664 1989, $10,013.

Dimensions of Job Performance. U.S. Army Research Office, TCN 86-145, 1986, $36,108

ASEE/U.S. Navy Faculty Fellowship, Navy Personnel Research and Development Center, Summer 1985.

Spencer Foundation Grant to Young Scholars, September 1981

Fulbright-Hays grant for study in Sweden, September 1977

PROFESSIONAL ASSOCIATIONS

Fellow, American Psychological Association

Fellow, Society for Industrial and Organizational Psychology (Div. 14, APA)

Fellow, Division on Evaluation, Measurement and Statistics (Div. 5, APA)

Charter Fellow, Association for Psychological Science

Member, International Association for Applied Psychology

PROFESSIONAL AWARDS, OFFICES AND BOARDS

President, Society for Industrial and Organizational Psychology (1997)

Council of Editors, American Psychological Association (1996-present)

Representative to APA Council (Div. 14) (2000-2003)

Distinguished Scientific Contribution Award, Society for Industrial and Organizational Psychology (2004)

Member, Conference Review Committee, Science Directorate, American Psychological Association (2004 – 2006)

Chair, Committee on Scientific Awards, American Psychological Association (Member 2006 – 2007, Chair 2008-2009)

Member, Board of Scientific Affairs, American Psychological Association (2009)

REVIEW PANELS AND BOARDS

Member, National Academy of Sciences Committee on Performance Appraisal (1990-91)

Member, National Academy of Sciences Committee on Drug Use in the Workplace (1991-93)

Chair, Department of Defense Advisory Committee on Military Personnel Testing (member 1991-95, Chair 1995-1998)

Member, National Research Council Roundtable on Work, Learning and Assessment (1997-98)

Member, National Academy of Sciences Committee to Review the Scientific Evidence on the Polygraph (2001-2003)

Program reviewer for National Science Foundation, Economic and Social Research Council, Department of Homeland Security (2008- present)

Member, Appeals and Complaints Committee, Manufacturing Skills and Standards Council (2011 – present)

COURSES TAUGHT

Graduate
Multivariate Statistics,
Personnel Psychology,
Person Perception,
Job Analysis and Performance Appraisal,
Introduction to Psychological Testing,
Assessment in Organizations,
Introduction to Statistics I and II,
Industrial/Organizational Psychology,
Factor Analysis,
Human Resource Management,
Fairness in Personnel Administration,
Counterproductive Behavior in Organizations,
Research Methods

Undergraduate
Psychological Testing,
Basic Statistics,
Advanced Managerial Psychology,
General Psychology,
Organizational Psychology,
Industrial/Organizational Psychology,
Personnel Selection in Business and the Public Sector,
Honesty in the Workplace

PUBLICATIONS

BOOKS

Murphy, K., & Davidshofer, C. (1988). *Psychological testing: Principles and applications*. Englewood Cliffs, NJ: Prentice Hall.

Murphy, K., & Saal, F. E. (1990). *Psychology in organizations: Integrating science andpractice*. Hillsdale, NJ: Erlbaum.

Murphy, K., & Cleveland, J. (1991). *Performance appraisal: An organizational perspective*. Boston: Allyn & Bacon.

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Murphy, K. (1996). *Individual differences and behavior in organizations*.San Francisco: Jossey-Bass.

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Murphy, K. & Myors, B. (1998). *Statistical power analysis: A simple and general model for traditional and modern hypothesis tests*. Mahwah, NJ: Erlbaum.

Cleveland, J., Stockdale, M & Murphy, K (2000). *Women and men in organizations.* Mahwah, NJ: Erlbaum.

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Murphy, K. (2006). *A Critique of Emotional Intelligence: What are the Problems and How Can They be Fixed?* Mahwah, NJ: Erlbaum.

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Putka, D. & Murphy, K. (In preparation). Reliability and Measurement Error: An Integrated Perspective for Organizational Research and Practice. New York: Taylor & Francis.

CONTRIBUTING AUTHOR

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O'Brien, C. & Normand, J. (1994). *Under the influence? Drug use and the American work force.* Washington, DC: National Academy Press.

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ARTICLES

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Murphy, K. (1979). Comment of Pugh's method and model for assessing environmental effect. *Organizational Behavior and Human Performance, 23,* 56-59.

Nystedt, L., & Murphy, K. (1979). Some conditions affecting the utility of subjectively weighted models in decision making. *Perceptual and Motor Skills, 49,* 583-590.

Murphy, K. (1982). Difficulties in the statistical control of halo. *Journal of Applied Psychology, 67,* 161-164.

Murphy, K., Garcia, M., Kerkar, S., Martin, C., & Balzer, W. (1982). The relationship between observational accuracy and accuracy in evaluating performance. *Journal of Applied Psychology, 67,* 320-325. Reprinted in K. Bradley (1994), *The International Library of Management.* Aldershot, England: Dartmouth.

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Murphy, K. (1983). Fooling yourself with cross-validation: Single-sample designs. *Personnel Psychology, 36,* 111-118.

Balzer, W., Rohrbaugh, J., & Murphy, K. (1983). Reliability of actual and predicted judgments over time. *Organizational Behavior and Human Performance, 32,* 109-123.

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Murphy, K., & Constans, J. (1987). Behavioral anchors as a source of bias in rating. *Journal of Applied Psychology, 72*, 573-579.

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Murphy, K., Philbin, T., & Adams, S. (1989). Effect of purpose of observation on accuracy of immediate and delayed performance ratings. *Organizational Behavior and Human Decision Processes, 43*, 336-354.

Murphy, K. & Pardaffy, V. (1989). Bias in behaviorally anchored ratings scales: Global or scale-specific? *Journal of Applied Psychology, 74*, 343-346.

Cleveland, J., Murphy, K. & Williams, R. (1989). Multiple uses of performance appraisal: Prevalence and correlates. *Journal of Applied Psychology, 74*, 130-135. Reprinted in K. Bradley (1994), *The International Library of Management*. Aldershot, England: Dartmouth.

Murphy, K. (1989). Maybe we should shoot ourselves in the foot: A reply to Manhardt. *The Industrial Psychologist, 26(3)*, 45-46.

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Murphy, K. (1989). Is the relationship between cognitive ability and job performance stable over time? *Human Performance, 2*, 183-200.

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Yu, J. & Murphy, K. (1993). Modesty bias in self ratings of performance: A test of the cultural relativity hypothesis. *Personnel Psychology, 46,* 357-363.

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Slater, M., Rouner, D., Murphy, K., Beauvais, F., Van Leuven & Rodriquez, M. (1996). Adolescent counterarguing of TV beer advertisements: Evidence of the effectiveness of alcohol education and critical viewing discussions. *Journal of Drug Education, 26*, 143-156.

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Murphy, K. & Shiarella, A. (1997). Implications of the multidimensional nature of job performance for the validity of selection tests: Multivariate frameworks for studying test validity. *Personnel Psychology, 50*, 823-854.

Tziner, A., Murphy, K., Cleveland, J., Beaudin, G. & Marchand, S. (1998). Impact of rater beliefs regarding performance appraisal and its organizational contexts on appraisal quality. *Journal of Business and Psychology, 12*, 457-467.

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Slater, M., Rouner, D., Karan. K. & Beauvais, F. (1999). Placing alcohol warnings before, during, and after TV beer ads: Effects on knowledge and responses to the ads and the warnings. *Journalism and Mass Communications Quarterly, 76* , 468-484.

Morin, D. & Murphy, K. (1999). Analyse empirique de la relation enre le contexte de l'évaluation de rendment et l'indulgence de l'évaluateur [The relationship between performance appraisal context and rating inflation]. *Relations Industrielles [Industrial Relations],* 54, 694-726.

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Gunnigle, P., Murphy, K., Cleveland, J., Heraty, N. & Morley, M. (2002). Localization in human resource management: Comparing American and European multinational corporations. *Advances in International Management, 14,* 259-284.

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Murphy, K.R., Cronin, B. & Tam, A.P. (2003). Controversy and consensus regarding the use of cognitive ability testing in organizations. *Journal of Applied Psychology, 88,* 660-671.

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Tam, A.P, Murphy, K.R & Lyall, T. (2004). Can changes in differential dropout rates reduce adverse impact: a computer simulation of a multi-wave selection system. *Personnel Psychology, 57,* 905-934.

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Morgeson, F. P., Campion, M. A., Dipboye, R. L., Hollenbeck, J. R., Murphy, K., & Schmitt, N. (2007). Are we getting fooled again? Coming to terms with limitations in the use of personality tests for personnel selection. *Personnel Psychology,* 60, 1029-1049.

Murphy, K.R. (2008). Explaining the weak relationship between job performance and ratings of job performance. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 1,* 148-160.

Murphy, K.R. (2008). Perspectives on the relationship between job performance and ratings of job Performance. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 1,* 197-205.

Tziner, A., Murphy, K.R., Cleveland, J.N., Yavo, A. & Hayoon, E. (2008). A new old question: Do contextual factors relate to rating behavior? - An investigation with peer evaluations. *International Journal of Selection and Assessment, 16,* 59-67.

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Murphy, K.R. & Jacobs, R. (In press). Using effect size measures to reform the determination of adverse impact in equal employment litigation. *Psychology, Public Policy and Law.*

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CHAPTERS

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COMMISSIONED PAPERS

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REVIEWS AND INVITED CONTRIBUTIONS

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CONFERENCE PRESENTATIONS

Murphy, K. (1979). Fooling yourself with cross-validation: Single-sample designs. Presented at American Psychological Association annual meeting. New York.

Murphy, K. (1980). Convergent and discriminant validity of regression, models and subjectively weighted models in decision research. Presented at Midwestern Psychological Association annual meeting, St. Louis.

Murphy, K. (1981). Methodological issues in social judgment theory. Symposium Chair, Southwestern Psychological Association annual meeting. Houston.

Murphy, K. (1981). Task determinants of the discriminant validity of judgmental models. Presented at Southwestern Psychological Association annual meeting. Houston.

Lane, D., Murphy, K., & Marques, T. (1981). Measuring cue importance in policy capturing. Presented at Southwestern Psychological Association annual meeting. Houston.

Stramler, C., & Murphy, K. (1981). Stress and coping behaviors in secretaries. Presented at Southwestern Psychological Association annual meeting. Houston.

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Murphy, K. (1982). Cost-benefit considerations in choosing among cross-validation methods. Presented at American Psychological Association annual meeting. Washington, D.C.

Murphy, K., & Needham, T. (1983). Using implicit personality theory to predict biases in simulated personnel decisions. Presented at Fifth International Personal Construct Psychology Congress. Boston.

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Murphy, K., Herr, B., Lockhart, M., & Maguire, E. (1985). Evaluating the performance of paper people. Presented at Annual Convention, American Psychological Association. Los Angeles.

Murphy, K., & Cleveland, J. (1985). Enhancing link between research and practice in Industrial/Organizational Psychology. Co-chair of panel at Annual Convention, AmericanPsychological Association. Los Angeles.

Murphy, K. (1985). Information processing research in performance appraisal: A consideration of the approach, findings, and implications. Symposium discussant. Annual Convention, Academy of Management. San Diego.

Murphy, K. (1985). Issues in job performance measurement. Symposium discussant. Twenty-seventh Annual Military Testing Association Conference. San Diego.

Murphy, K. (1986). Empiricism in applied psychology: Inductive vs. deductive research strategies.Program Chair: First Annual Convention of the Society of Industrial and Organizational Psychology. Chicago.

Murphy, K., Philbin, T. & Adams, S. (1986). Purpose of observation and accuracy of memory-based performance ratings. Presented at Annual Convention, American Psychological Association. Washington, D.C.

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Murphy, K., & Constans, J. (1986). Behavioral anchors as a source of bias in ratings. Information processing in organizations conference. Buffalo.

Murphy, K. (1987). The utility of utility analysis. Panel discussant, Chair-R. Alexander. Second Annual Conference of Society for Industrial/Organizational Psychology. Atlanta.

Murphy, K. (1987). Gaining experience in organizations: A graduate student's view. Symposium Co-chair. Second Annual Conference of Society for Industrial and Organizational Psychology. Atlanta.

Murphy, K. (1987). Performance appraisal: Making progress and making sense. Panel discussant. Second Annual Conference of Society for Industrial/Organizational Psychology. Atlanta.

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Murphy, K. (1987). Detecting infrequent deception. Annual Conference of American Psychological Association. New York.

Murphy, K. (1987). Cognitive research in performance appraisal: Prospects for application. Panel Chair, Annual Conference of American Psychological Association. New York.

Murphy, K. (1988). Job performance and productivity. Organizational Behavior, Performance and Productivity Conference, Rensselaer Polytechnic Institute. Troy.

Murphy, K. (1988). What to do about construct validity. Chair, Roundtable discussion Third Annual Conference of Society for Industrial and Organizational Psychology, Dallas.

Murphy, K. (1988). Do we remember behaviors or impressions? Annual Conference of Academy of Management. Anaheim.

Murphy, K. (1989). Psychology departments vs. business schools as places of employment. Fourth Annual Conference of SIOP. Boston.

Murphy, K., Thornton, G. & Prue, K. (1990). The influence of job characteristics on the acceptability of employee drug testing. Fifth Annual Conference of SIOP. Miami.

Murphy, K. & Anhalt, R. (1991). Is halo error a property of rater, ratees or task. Sixth Annual Conference of SIOP. St. Louis.

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Murphy, K. (1992). Power, politics, and performance appraisal: The role of subjectivity. Annual Conference of SIOP. Montreal, Canada.

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Murphy, K. (1992). Ethical issues in Human resource decisions. Conference on Fairness InPersonnel Decisions. South African Industrial Psychology Association. Pretoria, South Africa.

Murphy, K. (1992). Can culture-fair personnel testing be effective? South African Industrial Psychology Association. Pretoria, South Africa.

Murphy, K. & Lee, S. (1993). Does conscientiousness explain the relationship between integrity and job performance? Annual Conference of SIOP. San Francisco.

Murphy, K (1994). Personality and job performance. Discussant remarks. Annual Conference of SIOP. Nashville.

Murphy, K (1994). Modeling sexual harassment. Discussant remarks. Annual Conference of SIOP, Nashville.

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Murphy, K. (1997). Confessions of a Statistical Minimalist. Annual Conference of SIOP. St Louis.

Murphy, K. (1997). Police selection in Nassau County:Validity and Demographic Diversity: Discussant remarks. Annual Conference of SIOP. St Louis.

Murphy, K. (1997). Screening for Substance Abuse: Emerging Scientific and Business Issues: Discussant remarks. Annual Conference of SIOP. St Louis.

Murphy, K. (1997). Personality and mental ability as predictors of task and contextual job performance. Symposiom chair. Fifth European Congress of Psychology. Dublin, Ireland.

Murphy, K. (1997). Performance Appraisal at Work: Issues Related to Contextual Job Performance Symposiom chair. Fifth European Congress of Psychology. Dublin, Ireland.

Murphy, K. & Shiarella (1997). Using Ability and Personality Measures to Predict Multidimensional Performance Criteria. Presented at Fifth European Congress ofPsychology. Dublin, Ireland.

Tziner, A., Murphy, K. & Cleveland, J. (1998). Relationships between attitudes toward organizations and performance appraisal systems and rating behavior: A multi-national study. Presented at 24th International Congress of Applied Psychology. San Francisco.

Murphy, K. (1998). In search of success: Everyone's criterion problem. Presidential address. Annual conference of SIOP. Dallas.

Murphy, K. (1998). The controversy over score banding in personnel selection. discussant's remarks. Annual conference of SIOP. Dallas.

Murphy, K. (1998). Alternative strategies for devloping highly predictive, low adverse impact tests. Annual conference of SIOP. Dallas.

Murphy, K. (1999). New Empirical Research on Social Desirability in Personality Measurement. discussant. Annual Conference of SIOP. Atlanta.

Cleveland, J., Gunnigle, P., Heraty, N., Morley, M. and Murphy, K. (1999). Human resource management practices of U.S.-owned multinational corporations in Europe: Accomodation or imposition. Presented at Irish Academy of Management Conference. Limerick, Ireland.

Cleveland, J., Gunnigle, P., Heraty, N., Morley, M. and Murphy, K. (2000). HRM practices of U.S.-owned multinational corporations in Europe. Annual Conference of SIOP. New Orleans.

Beaty, J.C., Cleveland, J.N. & Murphy, K.R. (2000). The relationship between personality and contextual performance in "strong" versus "weak" situations. Annual Conference of SIOP. New Orleans.

Murphy, K., Cleveland, J. & Tziner, A. (2000). Influence of Proximal and Distal Attitudes on Performance Rating Behavior: A Multi-National Study. XXVII International Congress of Psychology. Stockholm, Sweeden.

Tziner, A., Murphy, K. & Cleveland, J. (2000). Do Context Factors Relate to Rating Behavior? XXVII International Congress of Psychology. Stockholm, Sweeden.

Murphy, K. (2001). Using large-scale surveys as a research tool. Symposium chair, Annual Conference of SIOP. San Diego.

2000 Publishing without perishing. Academy of Management, Human Resource Management Division, Doctoral Student and Junior Faculty Consortium. Toronto, Canada.

Unraveling the mysteries of the publication process. SIOP Doctoral Consortium. New Orleans.

1997 De-mystifying statistics: Getting a handle on recent advances in statistics and data analysis. Personnel Testing Council of Southern California, Los Angeles.

1995 Goal-oriented performance appraisal. IOOB Graduate Student Conference. Denver.

Perils of publishing. SIOP Doctoral Consortium. Orlando.

Improving performance appraisal: Designing, implementing and evaluating goal-oriented performance appraisal systems. Sydney, Australia. Inaugural Australian Industrial and Organisational Psychology Conference (Murphy, K. & Cleveland, J.)

1994 De-mystifying statistics: Getting a handle on recent advances in statistics and data analysis. SIOP workshop. Nashville.

1992 De-mystifying statistics: Getting a handle on recent advances in statistics and data analysis. SIOP workshop. St. Louis.

Goal-directed performance appraisal. Pretoria, South Africa.

1992 Statistics update. SIOP workshop. April, Miami.

1989 The context of performance appraisal. Academy of Management Doctoral Consortium. August, Washington, D. C. (Murphy, K. & Cleveland, J.)

Statistics Update. APA workshop. August. New Orleans.

1987 Performance appraisal. SIOP Doctoral Consortium. August, Washington, D.C. (Murphy, K. & Cleveland, J.)

INVITED LECTURES AND DEBATES

2011 The Seduction of Simplicity: The Downside of Studying Personnel Selection without Applicants or Organizations. Patricia Cain Smith and Robert M. Guion Distinguished Lecture, Bowling Green State University.

Content validity is not what it appears. Texas A&M University.

2007 Getting into the minds of terrorists. Worldwide Universities Network Virtual Seminar Series; National Responses to Terrorism. Webcast 9/10/07.

2006 Power analysis for traditional and modern hypothesis tests. Center for the Advancement of Research Methods and Analysis, Richmond Va., Center for Advanced Research Methods and Analysis (CARMA) Webcast, 4/28/06.

2005 Distinguished Scientific Contributions Award Address : Performance Appraisal Isn't Performance Measurement: Why Poor Workers Receive Good Ratings. Annual SIOP Conference. Los Angeles.

Integrity and recruitment. Presented at International Training Centre, International Labor Organization. Turin, Italy.

Industrial and organizational psychology's biggest hits and biggest misses. Opening Keynote Address. 6th Australian Industrial and Organizational Psychology Conference. Brisbane, Australia.

2003 Testing the hypothesis that something important has happened. Distinguished Lecture Series in honor of J.S. Coon Rededication of School of Psychology, Georgia Institute of Technology.

2000 Participant in "Millenial Debate on 'g' : An Invited Debate". Annual Confrerence of SIOP. New Orleans.

1999 Honesty in the workplace. SHL South Africa. Preatoria, South Africa.

Benefits and pitfalls of structured assessment programs in organizations. SHL/UMIST Workshop on Psychological Interventions and Organizational Effectiveness. Manchester, UK.

1998 Visiting Professors' Seminar Series, College of Business, University of Limerick, Limerick Ireland.

KEVIN R. MURPHY, PH.D.
Expert Testimony
March, 2012

1. Duane V. Michaels v. Cooley Gravel Co. - 2/86 - 11/86: Wrongful termination, age discrimination alleged. Provided depositions and testimony for defendant

2. Ronald Johns et. al., v. Civil service Commission et. al. 2/90 - 6/90: biased promotion process Alleged (Case 90 CV3591, District Court of City & County of Denver). Provided depositions and testimony for plaintiff

2. Lillard v. Ponds et. al., (File #2783) 4/91 - 8/91: wrongful termination alleged. Provided depositions for defendant.

3. Rodriquez et al. v. Denver Sheriff's Department et al. (Civil Action 92-N-2335): challenge to consent decree. Provided depositions for defendant.

4. Hsu v. Wyoming Department of Transportation (Civil No. 93-CV-134-J): racial and/or gender bias in promotion alleged. Provided depositions for plaintiffs.

5. Anderson et al. v. Ore-Ida Foods and H.J. Heinz Co. (December 1993): age discrimination in reduction-in-force decisions alleged. Provided depositions and testimony for plaintiffs

6. Jiron v. Jacor Broadcasting (Civil Action No. 94-M-1483): racial discrimination in pay and/or promotion alleged. Provided depositions and testimony for plaintiff.

7. Herman, et al., v. Westinghouse Electric Corporation (No. MJG-93-285): age discrimination in reduction-in-force decisions alleged. Provided depositions for defendant

8. United States of America v. City of Torrance et al [No. 93-4142 MRP (GHKx) (C.D. Cal.)]. Racial discrimination in hiring alleged. Provided depositions and testimony for the plaintiff.

9. O'Kelley v. Rice et al., (Pulaski Circuit No. 95-6210): use of improper promotion policies Alleged. Provided depositions and testimony for defendant.

10. Gerald M. Billouin et al., v. Monsanto Company and Chevron Chemical Company (No. 4-94-CV-1152 GFG): Age discrimination in termination decisions alleged. Provided depositions for defendant.

11. Bobbie Lee Wade v. Continental Airlines, Inc. (Civil Action No. 96-WY-1948-WD; U.S. District Court): Age, race, or gender discrimination in hiring decision alleged. Provided depositions for defendant.

12. Moore et al., v. Norfolk Southern Corporation. (Civil Action CV-93-C-0133-S; U.S. District Court). race discrimination in hiring alleged. Provided depositions and testimony for plaintiff.

13. Lopez v. City of Aurora (Civil Action No. 97CV330, District Court, County of Arapahoe, State of Colorado). Wrongful termination alleged. Provided testimony for defendant.

14. Equal Employment Opportunity Commission v. McDonnell Douglas Corporation (No. 95CV01414 SNL; U.S. District Court, Eastern District of Missouri). Age discrimination in layoff alleged. Provided depositions for defendant.

15. Manual Viarrial v. Coors Brewing Company and Betty Beck (U.S. District Court,CV No. 97-Z-1827). Racial discrimination in promotion alleged. Provided reports and deposition testimony for plaintiff.

16. OFCCP v. Ford Motor Company (Case 97-ofc-8: U.S. Department of Labor Office of Administrative Law Judges). Gender discrimination in hiring alleged. Provided depositions and testimony for plaintiff.

17. United States of America v. City of Buffalo (73-CV-414C). assessment of police selection test and validity study. Provided depositions and testimony for defendent.

18. Dukes et al., v. Wal-Mart Stores Inc. (C-01-2252-MJJ) - gender discrimination alleged. Provided deposition testimony for defendant.

19. MOCHA Society et al., v. City of Buffalo et al (98-CV-099C (M)) racial discrimination alleged. Provided deposition testimony and trial for plaintiff.

20. Lemley v. Philips Electronics (Civil Action 00-C-64) gender discrimination alleged. Provided deposition testimony for plaintiff.

21. Hopkins v. First American (Civil No. 08-08CV-669-L) age discrimination alleged. Provided deposition testimony for defendant.

22. Cicairos, et al., v. Summit Logistics, Inc. (Case No: CV014837). Superior Court of the State of California. Wage and hour violations alledged. Provided deposition testimony for plaintiff.

23. Brennen v. QWEST (Civil File No. 07-cv-020204 ADM/JSM). United States District Court, State of Minnesota. Unfair compensation alledged. Provided Deposition Testimony for Defendant.

24. Whitacker et al., v. 3M Company (Court File 62-C4-04-012239). Second Judicial District, State of Minnesota, County of Remsey. Age discrimination alledged. Provided testimony at deposition and in hearings for Defendant

25. Denise Manzanares Grievance hearing (No. 13-01-10 - FL 8298 AAA # 77 300 00381 10). Denver, Colorado. Validity of a classsification test is challenged. Provided testimony for Plaintiff.

26. Anderson, et al., v. Arne Duncan, U.S. Department of Education, Civil Action No. 06-1565 (RMC). United States District Court for the District of Columbia. Age and disability bias alledged in reduction in force. Provided deposition testimony for defendant.

Exhibit No. 2
Witness Murphy
Date 12/11/12
KWD CCR# 711

HORIZONTAL ELEVATORS

by Lawrence Fabian

ECOPLAN SEEKS BOLD "ACCESS" PARTNERS

Tackling head-on the growing nightmare of urban and suburban congestion and pollution, EcoPlan of Paris has launched a high-level public/private research effort with six pioneering projects under way and several publications in hand. "Public policy should not maximize movement or mobility," states EcoPlan's Eric Britton. "It should maximize individuals' access to needed services. And this has vastly different implications for urban transport policy." Access is a multi-client study to explore and implement these implications.

Two Access pilot projects have started in California (a walk-oriented new town concept and a new city master plan). Two are in Spain (a phased metro program and a detailed implementation plan), one in the Virgin Islands and the sixth in Adelaide, Australia.

EcoPlan seeks progressive, innovative partners who want to take a long view, focus on the needs of citizens in their daily lives and appreciate the systemic complexity of contemporary cities. For more information, contact Trans21, P.O. Box 249, Fields Corner Station, Boston, MA 02122.

OTIS' MULTI-GENERATIONAL PROGRAM

Spurred by strong Japanese interest in automated people movers (APMs) with linear induction-powered vehicles such as built for Duke University, Otis engineers are broadening their horizontal commitments. Their previous focus on back-and-forth shuttles arose from cable's inherent limitations. A new Shuttle Systems Division has been given new resources as an autonomous unit now headed by David Perl. Kris Balch, who oversaw Shuttle activities for many years, will stay within the Engineering Division and work closely with the APM program.

Japanese executives are emboldened by successful opening of two Otis shuttles at Narita Airport and anticipate growing interest in short-range APMs by their government. Several last May visited the Duke system, operating at a private hospital since 1980, and participated in a three-day workshop with high-level U.S. Otis staff to take a long-term view that defines developmental stages and the evolution of APM hardware, software and service capabilities. A linear induction motor (LIM) testing program outside Tokyo is envisioned.

Cable-drawn APMs can be very economical for small installations not requiring high speeds and many stations. Self-propelled vehicles enhance speed and system size. Unique among APM concepts is Otis' lateral docking capability. This is not feasible in cable versions. With air flotation, the Otis APM can move at 90-degree angles, right or left. With side-loading bays off a station guideway, station capacities increase dramatically.

David Perl brings experience with the customer side of Otis' elevator operations in North America to the APM division. He now reports to Otis' President Jean-Pierre van Rooy. Unlike previously reported, Bruno Grob is head of European and Transcontinental Operations.

Continued elsewhere

01214

HORIZONTAL ELEVATORS

Continued from cvr/4

LAS COLINAS RESOLVES AVAILABLE

An Automated People Mover (APM) Task Force to publicize transportation and development advantages of electronically smart transit was formed at the "APM Prospects in the 1990s" panel discussion and forum organized after the American Society of Civil Engineers (ASCE) Conference in Texas last March by Trans21 and supported by Parsons-Brinckerhoff. A four-page summary of recommendations has been prepared and is available free from Trans21. It can be used to promote hardware-neutral APM interest to public and private officials and the general public.

Also available is a full transcript of the 90-minute discussion. The panel consisted of Ingmar Andreasson of Gothenburg, Sweden; Lawrence Fabian of Boston, Massachusetts; Bernard Scherrer of Paris, France; Lee Rogers of Washington, D.C.; and George Swede of Los Angeles, California.

About 90 people attended the event and many joined the lively, thought-provoking discussion. To obtain the "APM Prospects in the 1990s" transcript, send US $15 to Trans21, PO Box 249, Fields Corner Station, Boston, MA 02122.

THE FIRST THREE YEARS OF LAON'S POMA 2000

A report by local officials in the medieval town of Laon two hours north of Paris describes the debugging process that its Pomagalski-supplied automated people mover (APM) has undergone. Opened in 1989, it has become an integral part of daily life. It carries almost 900,000 passengers each year between the lower part of town and the attractive historic city high on a plateau.

Laon's bus ridership has increased 17%. Most bus routes feed the APM. Counting APM ridership separately gives Laon the highest per capita figure in its class size in all of France. Vandalism has been negligible, although fare evasion is somewhat of a problem.

The lower terminus of the three-station shuttle station was integrated with a new underground parking garage. Usage has failed to develop. Paris consultants had predicted almost 700 daily parkers, but it has never exceeded 20. Car traffic up to the plateau has increased 5% from 1987 to 1991, just a hair under the national average. Parking and traffic problems continue in the historic district, but more people have access to it via the "Poma 2000."

The APM provides about 200,000 vehicle-kms of service each year at a cost of US $1.2 million — about US $6/veh-km. There is some uncertainty about future costs because of aging of the hardware. Local officials have created a committee to encourage other cities to consider a Poma installation.

CHICAGO LAUNCHES $40-MILLION RAYTHEON PRT

With a quiver in his voice and a chill up and down his spine; Chicago Regional Transit Authority (RTA) Chairman Gayle Franzen counted the 10-1 vote to move forward on its personal rapid transit (PRT) program with Raytheon/Taxi 2000. Calling it "pivotal" for public transport, Franzen fully recognized the risk in his experiment. Yet, in the void of Washington attention to transit R&D, Chicago feels obliged to explore new technologies.

The RTA selected Raytheon over Intamin. It committed in principal US $18 million, with Raytheon saying it will add

Continued from/4

01215

IN THE SUPREME COURT OF THE STATE OF NEVADA

BOMBARDIER TRANSPORTATION (HOLDINGS) USA INC., Appellant, v. NEVADA LABOR COMMISSIONER; THE INTERNATIONAL UNION OF ELEVATOR CONSTRUCTORS; and CLARK COUNTY, Respondents.	**Case No. 71101**

APPELLANT BOMBARDIER TRANSPORTATION (HOLDINGS) USA INC.'S APPENDIX

VOLUME 5

ER0998-ER1247

JACKSON LEWIS P.C.
Paul T. Trimmer, Bar No. 9291
3800 Howard Hughes Parkway, #600
Las Vegas, Nevada 89169
(702) 921-2460

Attorneys for Appellant

Bombardier Transportation (Holdings) USA, Exhibit 31		2626–2808
Bombardier Transportation (Holdings) USA, Exhibit 32		2809
Bombardier Transportation (Holdings) USA, Inc.'s Motion for Summary Judgment	April 8, 2013	0094–0418
Bombardier Transportation (Holdings) USA, Inc. Post-Hearing Brief	December 13, 2013	1406–1467
Bombardier Transportation (Holdings) USA, Inc. Pre-Hearing Brief, List of Witnesses and List of Exhibits	June 3, 2013	0841–1294
Bombardier Transportation (Holdings) USA, Inc. Reply in Support of Motion for Summary Judgment	April 24, 2013	0675–0765
Bombardier Transportation (Holdings) USA, Inc. Supplement to Unopposed Motion to Seal	June 17, 2013	1311–1319
Bombardier Transportation (Holdings) USA, Inc. Unopposed Motion to Seal	June 17, 2013	1295–1310
Clark County Department of Aviation Exhibit 1		2810
Clark County Department of Aviation Exhibit 2		2811
Clark County Department of Aviation Exhibit 3		2812–2814
Clark County Department of Aviation Exhibit 4		2815–2817
Clark County Department of Aviation Exhibit 5		2818–2822

Clark County Department of Aviation Exhibit 13		2823–299
Clark County Department of Aviation Exhibit 14		3000–3026
Clark County Department of Aviation Exhibit 16		3027–3030
Clark County Department of Aviation Exhibit 17		3031
Clark County Department of Aviation Exhibit 18		3032–3034
Clark County Department of Aviation Exhibit 19		3035–3041
Clark County Department of Aviation Exhibit 20		3042–3044
Clark County Department of Aviation Exhibit 20A		3045–3046
Clark County Department of Aviation Exhibit 20B		3047–3050
Clark County Department of Aviation Exhibit 22		3051–3115
Clark County Department of Aviation Exhibit 23		3116–3134
Clark County Department of Aviation Exhibit 25		3135–3208
Clark County Department of Aviation Exhibit 26		3209–3286
Clark County Department of Aviation Exhibit 27		3287–3343

Clark County Department of Aviation Exhibit 30		3344–3391
Clark County Department of Aviation Exhibit 32		3392–3453
Clark County Department of Aviation Exhibit 33		3454–3456
Clark County Department of Aviation Exhibit 34		3457–3459
Clark County Department of Aviation Exhibit 35		3460–3463
Clark County Department of Aviation Exhibit 36		3464–3466
Clark County Department of Aviation Exhibit 37		3467–3469
Clark County Department of Aviation Exhibit 38		3470–3472
Clark County Department of Aviation Exhibit 39		3473–3507
Clark County Department of Aviation Exhibit 40		3508–3511
Clark County Department of Aviation Exhibit 41		3512–3524
Clark County Department of Aviation Exhibit 42		3525–3526
Clark County Department of Aviation Exhibit 43		3527–3532
Clark County Department of Aviation Exhibit 44		3533–3534

Clark County Department of Aviation Exhibit 141		3535–3539
Clark County Department of Aviation List of Documents		0837–0840
Clark County Department of Aviation Pre-Hearing Brief		0800–0832
Clark County Department of Aviation Post-Hearing Brief		1320–1365
Clark County Department of Aviation Response to Motion for Summary Judgment		0419–0549
Clark County Department of Aviation Revised Determination		0018–0036
Clark County Department of Aviation Witness List		0833–0836
Determination of Clark County Department of Aviation		0003–0005
Final Order	March 6, 2014	3939–3952
Hearing Transcript (Volume 1)	June 25, 2013	1468–1555
Hearing Transcript (Volume 2)	June 26, 2013	1556–1660
Hearing Transcript (Volume 3)	June 27, 2013	1661–1774
Hearing Transcript (Volume 4)	June 28, 2013	1775–1810
Hearing Transcript (Volume 5)	September 9, 2013	1811–1884
Hearing Transcript (Volume 6)	September 10, 2013	1885–1928
Interim Order	June 7, 2011	0009–0017
International Union of Elevator Constructors Exhibit 1		3540–3722

International Union of Elevator Constructors Exhibit 2		3723–3725
International Union of Elevator Constructors Exhibit 3		3726–3727
International Union of Elevator Constructors Exhibit 4		3728–3751
International Union of Elevator Constructors Exhibit 5		3752–3753
International Union of Elevator Constructors Exhibit 7		3754–3760
International Union of Elevator Constructors Exhibit 8		3761–3770
International Union of Elevator Constructors Exhibit 9		3771–3802
International Union of Elevator Constructors Exhibit 10		3803–3810
International Union of Elevator Constructors Exhibit 13		3811–3823
International Union of Elevator Constructors Exhibit 17		3824
International Union of Elevator Constructors Exhibit 18		3825–3829
International Union of Elevator Constructors Exhibit 19		3830–3838
International Union of Elevator Constructors Exhibit 21		3839–3840
International Union of Elevator Constructors Exhibit 22		3841–3843

International Union of Elevator Constructors Exhibit 23		3844
International Union of Elevator Constructors Exhibit 24		3845–3846
International Union of Elevator Constructors Exhibit 25		3847–3860
International Union of Elevator Constructors Exhibit 27		3861–3870
International Union of Elevator Constructors Exhibit 28		3871–3938
International Union of Elevator Constructors Objection to Revised Determination		0040–0044
International Union of Elevator Constructors Opposition to Motion for Summary Judgment	April 16, 2013	0550–0674
International Union of Elevator Constructors Post-Hearing Brief	December 11, 2013	1366–1405
International Union of Elevator Constructors Pre-Hearing Conference Memorandum	June 18, 2012	0068–0075
International Union of Elevator Constructors Pre-Trial Brief	April 19, 2013	0766–0794
International Union of Elevator Constructors Prevailing Wage Complaint	October 9, 2009	0001–0002
Notice of Entry of Order	August 10, 2011	0045–0054
Notice of Pre-Hearing Conference	May 17, 2012	0037–0039
Order Denying Motion for Summary Judgment	June 3, 2013	0795–0799
Order on International Union of Elevator Constructors' Petition for Reconsideration	May 18, 2012	0055–0067

Revised Determination of the Clark County Department of Aviation	March 30, 2010	0006–0008
Scheduling Order	June 27, 2012	0076–0080
Stipulated Protective Order, signed by the Labor Commissioner	November 7, 2012	0081–0090
Summary of Legislation History of 1981		3953–4005

RFP NO. 11-003
MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALKWAYS
EXHIBIT E
INSURANCE REQUIREMENTS

TO ENSURE COMPLIANCE WITH THE PURCHASE ORDER DOCUMENT, SHOULD FORWARD THE FOLLOWING INSURANCE CLAUSE AND SAMPLE INSURANCE FORM TO THEIR INSURANCE AGENT.

1. Format/Time: The CONTRACTOR, shall provide OWNER with Certificates of Insurance, per the sample format (page A-4), as evidenced by ACORD Form 25 Certificate of Insurance, written by a firm licensed to write such insurance in the State of Nevada, for coverage's as listed below, and endorsements affecting coverage required by this Agreement within ten (10) calendar days after the award by the OWNER. All required aggregate limits shall be disclosed and amounts entered on the Certificate of Insurance, and shall be maintained for the duration of the Contract and any renewal periods.

2. Best Key Rating: The OWNER requires insurance carriers to maintain during the Contract term, a Best Key Rating of A- VII or higher, which shall be fully disclosed and entered on the Certificate of Insurance. The OWNER requires insurance carriers to maintain during the Contract term, a Best Key Rating of A- VII (seven) or higher, which shall be fully disclosed and entered on the certificate of insurance. A lower Best Key Rating may be accepted with the express written permission of the OWNER.

3. OWNER Coverage: The OWNER, its officers, employees, agents and volunteers must be expressly covered as additional insured's except on workers' compensation insurance coverage.. The CONTRACTOR insurance shall be primary as respects the OWNER, its officers, employees, agents, and volunteers.

4. Endorsement/Cancellation: The CONTRACTOR general and automobile liability insurance policies shall be endorsed to recognize specifically the CONTRACTOR contractual obligation of additional insured to OWNER and must note that the OWNER will be given thirty (30) calendar days advance notice by certified mail "return receipt requested" of any policy changes, cancellations, or any erosion of insurance limits.

5. Worker's Compensation: Worker's compensation insurance in accordance with laws of the State of Nevada covering your employees.

6. Employer's Liability: Employer's liability with a minimum limit of $1,000,000.

7. Automobile Liability: Automobile liability insurance covering all of your owned and any hired (rented/leased) vehicles while being used off the construction site(s). Minimum limits per occurrence (accident) that you are required to maintain are (Except $1,000,000 Minimum On Site):

	a.	Bodily Injury	$5,000,000.	per occurrence
and	b.	Property Damage	$5,000,000.	per occurrence
or	c.	Bodily Injury/Property Damage	$5,000,000.	Combined single limit

8. Commercial Liability: Commercial liability insurance covering for operations away from the insured project site in a form providing coverage not less than that of a standard Commercial General Liability insurance policy ("Occurrence Form") for operations of the CONTRACTOR and Subcontractors, including Independent Contractors, Products and Completed Operations, Contractual Liability and Personal Injury Liability with Limits not less than:

Bodily Injury and Property Damage Combined:

General Aggregate	$2,000,000.
Products/Completed Operations Aggregate	$2,000,000.
Personal and Advertising Injury	$1,000,000.
Each Occurrence Limit	$1,000,000.

9. Umbrella Liability: Umbrella liability insurance Off Site coverage that is excess of the primary automobile liability, employer's liability and general liability coverage's in a form that is as broad as the underlying coverage with limits not less than $5,000,000.

It is further required that all insurance be on an ***occurrence basis*** and not a *claim made* basis.

These are **minimum** requirements. You may want to discuss with your own agent / broker or risk manager the necessity for additional protection to meet your own individual circumstances.

Other sections that pertain to what you must provide and your responsibilities include:

You must furnish evidence that the above has been complied with **prior** to starting any work or services on your project.

10. Deductibles: All deductibles and self-insured retentions shall be fully disclosed in the Certificates of Insurance and may not exceed **$25,000** without the express written permission of the OWNER.

11. Professional Liability: Professional liability insurance shall not be less than $1,000,000 aggregate. If the professional liability insurance provided is on a Claims Made Form, then the insurance coverage required must continue for a period of 2 years beyond the completion or termination of this Contract. Any retroactive date must coincide with or predate the beginning of this Contract and may not be advanced without the consent of the OWNER.

12. Environmental and Clean-up Liability: Environmental insurance shall not be less than $1,000,000 aggregate for the duration of this Contract.

13. Failure To Maintain Coverage: If the CONTRACTOR fails to maintain any of the insurance coverage's required herein, OWNER may withhold payment, order the CONTRACTOR to stop the work, declare the CONTRACTOR in breach, suspend or terminate the Contract, assess liquidated damages as defined herein, or may purchase replacement insurance or pay premiums due on existing policies. OWNER may collect any replacement insurance costs or premium payments made from the CONTRACTOR or deduct the amount paid from any sums due the CONTRACTOR under this Contract.

14. Damages: The CONTRACTOR is required to remedy all injuries to persons and damage or loss to any property of OWNER, caused in whole or in part by the CONTRACTOR, their subcontractors or anyone employed, directed, or supervised by CONTRACTOR.

15. Cost: The CONTRACTOR shall pay all associated costs for the specified insurance. The cost shall be included in the bid price(s).

16. Insurance Submittal Address: All insurance Certificates requested shall be sent to the Clark County Department of Aviation, Purchasing, 5757 Wayne Newton Boulevard, P. O. Box 11005, Las Vegas, NV 89111-1005.

17. Insurance Form Instructions: All required insurance coverage as stated herein will be evidenced by a current Acord Form 25 Certificate(s) of Insurance, such Certificates will include, but will not be limited to, the following:

    1. Insurance Broker's name, complete address, phone and fax numbers.
    2. Successful Bidder's name, complete address, phone and fax numbers.
    3. Insurance Company's Best Key Rating
    4. Commercial General Liability (Per Occurrence)
        (A) Policy Number
        (B) Policy Effective Date
        (C) Policy Expiration Date
        (D) General Aggregate ($2,000,000)
        (E) Products-Completed Operations Aggregate ($2,000,000)
        (F) Personal & Advertising Injury ($1,000,000)
        (G) Each Occurrence ($1,000,000)
        (H) Fire Damage ($50,000)
        (I) Umbrella Liability Excess Liability ($5,000,000)
    5. Automobile Liability (Any Auto)
        (A) Policy Number
        (B) Policy Effective Date
        (C) Policy Expiration Date
        (D) Combined Single Limit ($5,000,000)
    6. Worker's Compensation
    7. Description: Bid Number and Name of Contract (must be identified on the initial insurance form and each renewal form).
    8. Certificate Holder:
        Clark County
        c/o Department of Aviation-Purchasing
        5757 Wayne Newton Boulevard
        P.O. Box 11005
        Las Vegas, Nevada 89111-1005
    9. Authorized Agent Signature

CLARK COUNTY CERTIFICATE OF INSURANCE			ISSUED DAY (MM/DD/YY)
PRODUCER 1. INSURANCE BROKERS NAME, ADDRESS, PHONE & FAX NUMBERS	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.		
	COMPANIES AFFORDING COVERAGE		3.BEST'S RATING
	COMPANY LETTER	A COMPANY'S	
INSURED 2. NAME, ADDRESS, PHONE & FAX NUMBERS	COMPANY LETTER	B BEST KEY	
	COMPANY LETTER	C RATING	
	COMPANY LETTER	D A- VII or BETTER	
	COMPANY LETTER	E	

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
4.	GENERAL LIABILITY	(A)	(B)	(C)	GENERAL AGGREGATE	$(D)	2,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$(E)	2,000,000
	CLAIMS MADE X OCCUR				PERSONAL & ADV. INJURY	$(F)	1,000,000
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$(G)	1,000,000
	UNDERGROUND EXPLOSION & COLLAPSE	(J) Deductible/Retention			FIRE DAMAGE (Any one fire)	$(H)	50,000
	INDEPENDENT CONTRACTOR				MED EXPENSE (Any one person)	$(I)	
5.	AUTOMOBILE LIABILITY	(K)	(L)	(M)	COMBINED SINGLE LIMIT	$(N)	5,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$	
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$	
	SCHEDULED AUTOS						
	HIRED AUTOS				PROPERTY DAMAGE	$	
	NON-OWNED AUTOS						
	GARAGE LIABILITY	(O)Deductible/Retention					
	EXCESS LIABILITY				EACH OCCURRENCE	$	5,000,000
	UMBRELLA FORM				AGGREGATE	$	5,000,000
	OTHER THAN UMBRELLA FORM						
6.	X WORKER'S COMPENSATION				STATUTORY LIMITS		
					EACH ACCIDENT	$	1,000,000
					DISEASE-POLICY LIMIT	$	1,000,000
					DISEASE-EACH EMPLOYEE	$	1,000,000
	OTHER PROFESSIONAL LIABILITY						

7. DESCRIPTION: **CBE-662, CONTRACT FOR MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALKWAYS (RFP NO. 11-003), CLARK COUNTY, ITS COMMISSIONERS, OFFICERS, EMPLOYEES, RELATED ENTITIES AND AUTHORIZED REPRESENTATIVES ARE INSUREDS WITH RESPECT TO LIABILITY ARISING OUT OF THE ACTIVITIES BY OR ON BEHALF OF THE ADDITIONAL INSURED IN CONNECTION WITH THIS PROJECT. PER ISO FORM ENCLOSED (ENDORSEMENT FORM)**

8. CERTIFICATE HOLDER	CANCELLATION
CLARK COUNTY C/O DEPARTMENT OF AVIATION PURCHASING 5757 WAYNE NEWTON BLVD. P.O. BOX 11005 LAS VEGAS, NV 89111-1005	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. 9. Authorized Agent

NAMED INSURED:					
POLICY PERIOD:				ENDORSEMENT EFFECTIVE DATE:	
CBE No.	662	TITLE:	CONTRACT FOR MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALK-WAYS (RFP 11-003)		

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

ADDITIONAL INSURED:

CLARK COUNTY, ITS COMMISSIONERS, OFFICERS, EMPLOYEES, RELATED ENTITIES AND AUTHORIZED REPRESENTATIVES

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

Automobile Liability - (as per form above) Policy No:

General Liability - (as per form above) Policy No.:

SCHEDULE (if required)

Name of Person or Organization:

Locations and Description of Completed Operations:

(If no entry appears above, information required to complete this endorsement will be shown in the
declarations as applicable to this endorsement.)

Section II

Who is an insured is amended to include as an additional insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

Authorized Agent (print name) Signature Date

CBE-662
MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALKWAYS (RFP 11-003)
ATTACHMENT 1
AFFIDAVIT

I, _____, on behalf of my company, _____, being
(Name of Sole Proprietor) (Legal Name of Company)

duly sworn, depose and declare:

1. I am a Sole Proprietor;

2. I will not use the services of any employees in the performance of this contract, identified as CBE No. 662, entitled Maintenance Services for Elevators, Escalators & Moving Walkways (RFP 11-003);

3. I have elected to not be included in the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive; and

4. I am otherwise in compliance with the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive.

I release Clark County from all liability associated with claims made against me and my company, in the performance of this contract, that relate to compliance with NRS Chapters 616A-616D, inclusive.

Signed this _____ day of _____, _____.

Signature

State of Nevada
County of Clark

On this _____ day of _____, _____, before the undersigned Notary Public, personally appeared _____, having proved on a satisfactory basis to be the person(s) whose name(s) _____ subscribed to this instrument, and acknowledge that _____ executed it.

Witness my hand and official seal.

_____
Notary's Signature

FOR INFORMATIONAL PURPOSES ONLY:

The above referenced firm is a ☐MBE ☐WBE ☐DBE ☐PBE ☐SBE ☐NBE ☐LBE as defined below.

STATE OF NEVADA BUSINESSES

MINORITY OWNED BUSINESS ENTERPRISE (MBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity.

WOMEN OWNED BUSINESS ENTERPRISE (WBE): An independent and continuing Nevada business for profit that performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more women.

DISADVANTAGED BUSINESS ENTERPRISE (DBE): A small business as defined by Small Business Administration owned and controlled by one or more socially and economically individuals, that is certified in accordance with U.S. Dept. of Transportation regulations 49CFR Part 26 and/or 23.

PHYSICALLY-CHALLENGED BUSINESS ENTERPRISE (PBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.

SMALL BUSINESS ENTERPRISE (SBE): An independent and continuing Nevada business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed two million dollars ($2,000,000).

NEVADA BUSINESS ENTERPRISE (NBE): Any Nevada business that has the resources necessary to sufficiently perform identified County projects, and is owned or controlled by individuals that are not designated as socially or economically disadvantaged.

BUSINESSES IN OTHER STATES

LARGE BUSINESS ENTERPRISE (LBE): An independent and continuing business for profit, which performs a commercially useful function and is not located in Nevada.

RFP NO. 11-003
MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALKWAYS
EXHIBIT F
SUBCONTRACTOR INFORMATION

It is our intent to utilize the following MBE, WBE, PBE, SBE, and NBE subcontractors in association with this Contract:

1. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

2. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

3. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

4. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

5. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

6. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other: _____

☐ No MBE, WBE, PBE, SBE, nor NBE subcontractors will be used.

CBE-662
MAINTENANCE SERVICES FOR ELEVATORS, ESCALATORS AND MOVING WALKWAYS (RFP 11-003)
EXHIBIT G

DISCLOSURE OF OWNERSHIP/PRINCIPALS

Business Entity Type						
☐ Sole Proprietorship	☐ Partnership	☐ Limited Liability Company	☒ Corporation	☐ Trust	☐ Non-Profit Organization	☐ Other

Business Designation Group					
☐ MBE	☐ WBE	☐ SBE	☐ PBE	☐	☐
Minority Business Enterprise	Women-Owned Business Enterprise	Small Business Enterprise	Physically Challenged Business Enterprise		

Corporate/Business Entity Name:	KONE Inc.		
(Include d.b.a., if applicable)			
Street Address:	One KONE Court	Website: www.kone.com	
City, State and Zip Code:	Moline, IL 61265	POC Name and Email:	
Telephone No:	(309) 764-6771	Fax No:	
Local Street Address:	2060 Pama Lane	Website: www.kone.com	
City, State and Zip Code:	Las Vegas, NV 89119	Local Fax No:	(702)269-0922
Local Telephone No:	(702)269-0919	Local POC Name Email:	jon.jasper@kone.com
Number of Clark County Nevada Residents Employed: 65			

All entities, with the exception of publicly-traded and non-profit organizations, must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the Board.

Publicly-traded entities and non-profit organizations shall list all Corporate Officers and Directors in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use applications, extends to the applicant and the landowner(s).

Entities include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations.

Full Name	Title	% Owned (Not required for Publicly Traded Corporations/Non-profit organizations)
NA		

This section is not required for publicly-traded corporations.

1. Are any individual members, partners, owners or principals, involved in the business entity, a Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☒ No (If yes, please note that County employee(s), or appointed/elected official(s) may not perform any work on professional service contracts, or other contracts, which are not subject to competitive bid.)

2. Do any individual members, partners, owners or principals have a spouse, registered domestic partner, child, parent, in-law or brother/sister, half-brother/half-sister, grandchild, grandparent, related to a Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☒ No (If yes, please complete the Disclosure of Relationship form on Page 2. If no, please print N/A on Page 2.)

I certify under penalty of perjury, that all of the information provided herein is current, complete, and accurate. I also understand that the Board will not take action on land use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

Signature — Jon F. Jasper (Print Name)

District Manager (Title) — May 19, 2011 (Date)

01005

KONE Inc.
Directors and Officers

First Name	Last Name	Title	Business Address
Vance W.	Tang	President & CEO; Director/Chairman of the Board	4225 Naperville Road, Suite 400 Lisle, IL 60532
Kenneth E.	Schmid, Jr.	Senior Vice President Finance, Chief Financial Officer, Director	4225 Naperville Road, Suite 400 Lisle, IL 60532
Jeffrey S.	Blum	Senior Vice President West	1751 Harbor Bay Parkway, Suite 150 Alamede, CA 94502
Thomas	Bulat	Senior Vice President Northeast	One Meadowlands Plaza, Suite 302 East Rutherford, NJ 07073
Dennis L.	Gerard	Senior Vice President Central	4225 Naperville Road, Suite 400 Lisle, IL 60532
Octavia	Matthews	Senior Vice President Southeast	3550 George Busbee Parkway, Suite 360 Kennesaw, GA 30144
Wes	Askren	Senior Vice President Business Development	4225 Naperville Road, Suite 400 Lisle, IL 60532
Jay	Dietz	Senior Vice President Operations	4225 Naperville Road, Suite 400 Lisle, IL 60532
Charles D.	Moore	Senior Vice President Human Resources	4225 Naperville Road, Suite 400 Lisle, IL 60532
Jussi	Ojala	Senior Vice President Supply and Sourcing	4225 Naperville Road, Suite 400 Lisle, IL 60532
Kurt E.	Stepaniak	Senior Vice President Law & Acquisitions; Secretary	4225 Naperville Road, Suite 400 Lisle, IL 60532
Ronald L.	Bagwill	Vice President, Director of Supply Unit Americas	One Allen Center 700 Central Expwy South Allen, TX 75013
Michael P.	Bauschka	Treasurer	One KONE Court Moline, IL 61265
John	Dahlquist, Jr.	Assistant Secretary	4225 Naperville Road, Suite 400 Lisle, IL 60532
Barbara	Brockmeyer	Assistant Treasurer	One KONE Court Moline, IL 61265

DISCLOSURE OF RELATIONSHIP

List any disclosures below:
(Mark N/A, if not applicable.)

NAME OF BUSINESS OWNER/PRINCIPAL	NAME OF COUNTY* EMPLOYEE/OFFICIAL AND JOB TITLE	RELATIONSHIP TO COUNTY* EMPLOYEE/OFFICIAL	COUNTY* EMPLOYEE'S/OFFICIAL'S DEPARTMENT
N/A			

* County employee means Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District.

"Consanguinity" is a relationship by blood. "Affinity" is a relationship by marriage.

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For County Use Only:

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☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in anyway with the business in performance of the contract?

Notes/Comments:

Signature

Print Name
Authorized Department Representative

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   ☐ Yes ☒ No (If yes, please note that County employee(s), or appointed/elected official(s) may not perform any work on professional service contracts, or other contracts, which are not subject to competitive bid.)

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Jon F. Jasper — Signature

Jon F. Jasper — Print Name

District Manager — Title

May 19, 2011 — Date

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Directors and Officers

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Ronald L.	Bagwill	Vice President, Director of Supply Unit Americas	One Allen Center 700 Central Expwy South Allen, TX 75013
Michael P.	Bauschka	Treasurer	One KONE Court Moline, IL 61265
John	Dahlquist, Jr.	Assistant Secretary	4225 Naperville Road, Suite 400 Lisle, IL 60532
Barbara	Brockmeyer	Assistant Treasurer	One KONE Court Moline, IL 61265

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N/A			

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Notes/Comments:

Signature

Print Name
Authorized Department Representative

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Notes/Comments:

_____

Signature

_____

Print Name
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Notes/Comments:

_____

Signature

_____

Print Name
Authorized Department Representative

EXHIBIT 16

01013

CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	**Approval of Contract**	**Back-up:**
Petitioner:	Randall H. Walker, Director of Aviation	**Clerk Ref. #**

Recommendation:

That the Board of County Commissioners approve and authorize the Director of Aviation to sign the contract (CBE 670) between Clark County and Bombardier Transportation (Holdings) USA, Inc. (Stephen Stowe, General Manager Operations and Maintenance), to provide Technical Assistance Support for Automated Transit Systems which is related to the transfer of maintenance of the automated transit systems at McCarran International Airport to in-house personnel; or take other action as appropriate. (For possible action)

FISCAL IMPACT:

Fund#: 5201.701
Fund Name: McCarran Unrestricted Operations
Fund Center: 2200300020
Fund Program/Grant: N/A
Description: CBE 670 - Technical Assistance Support for Automated Transit Systems
Amount: $1,183,638.00
Added Comments: The cost associated with this contract is not to exceed $1,183,638.00 annually which includes a budgeted amount for spare parts as required.

BACKGROUND:

On May 4, 2010, the Board of County Commissioners (BOCC) directed the Director of Aviation to prepare a report on the cost options of providing maintenance for the automated transit system (ATS) at McCarran International Airport. After hearing the report, on June 1, 2010, the BOCC directed the Director of Aviation to proceed with arranging for the transfer of maintenance responsibilities for the existing C and D ATS and the new T3 ATS from Bombardier Transportation (Holdings) USA, Inc. (Bombardier) to Department of Aviation (DOA) personnel. This transition will require Bombardier to provide DOA staff with technical assistance as required on the C, D, and T3 ATS. In-house DOA staff will begin performing maintenance on the entire DOA ATS at 8:00 a.m. Pacific Daylight Time on May 2, 2012.

A discretionary award is permissible because the services to be performed are exempt from competitive bidding requirements in accordance with NRS 332.115.1(a), items which may only be contracted from a sole source; NRS 332.115.1 (b) services which are professional in nature; and NRS 332.115.1 (d) equipment which, by reason of the training of the personnel or of an inventory of replacement parts maintained by the local government is compatible with existing equipment.

Bombardier Transportation (Holdings) USA, Inc. currently holds a Clark County business license.

Respectfully submitted,

DONALD G. BURNETTE, County Manager

Cleared for Agenda

5/1/2012

Agenda Item #

01014 13

TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS
CBE-670

This Contract is made and entered into this _____ day of _____, 2012, by and between CLARK COUNTY, a political subdivision of the State of NEVADA (hereinafter referred to as "OWNER"), and Bombardier Transportation (Holdings) USA, Inc. (hereinafter referred to as "CONTRACTOR"), for technical assistance support for Automated Transit Systems at McCarran International Airport (hereinafter referred to as "PROJECT").

WITNESSETH:

WHEREAS, the CONTRACTOR has the personnel and resources necessary to accomplish the PROJECT within the required schedule and within the annual budget allowance set forth herein.

WHEREAS, the CONTRACTOR has the required licenses and/or authorizations pursuant to all Federal, State of Nevada and local laws in order to conduct business relative to this Contract.

NOW, THEREFORE, OWNER and CONTRACTOR agree as follows:

SECTION I: RESPONSIBILITY OF CONTRACTOR

A. It is understood that in the performance of the services herein provided for, CONTRACTOR shall be, and is, an independent CONTRACTOR, and is not an agent or employee of OWNER and shall furnish such services in its own manner and method except as required by this Contract. Further, CONTRACTOR has and shall retain the right to exercise full control over the employment, direction, compensation and discharge of all persons employed by CONTRACTOR in the performance of the services hereunder. CONTRACTOR shall be solely responsible for, and shall indemnify, defend and save OWNER harmless from all matters relating to the payment of its employees, including compliance with social security, withholding and all other wages, salaries, benefits, taxes, exactions, and regulations of any nature whatsoever.

B. In accordance with the Immigration Reform and Control Act of 1986, the CONTRACTOR agrees that it will not employ unauthorized aliens in the performance of this Contract.

C. CONTRACTOR acknowledges that CONTRACTOR and any subcontractors, agents or employees employed by CONTRACTOR shall not, under any circumstances, be considered employees of the OWNER, and that they shall not be entitled to any of the benefits or rights afforded employees of OWNER, including, but not limited to, sick leave, vacation leave, holiday pay, Public Employees Retirement System benefits, or health, life, dental, long-term disability or workers' compensation insurance benefits. OWNER will not provide or pay for any liability or medical insurance, retirement contributions or any other benefits for or on behalf of CONTRACTOR or any of its officers, employees or other agents.

D. The CONTRACTOR shall be responsible for the professional quality, technical accuracy, timely completion, and coordination of all services furnished by the CONTRACTOR, its subcontractors and its and their principals, officers, employees and agents under this Contract. In performing the specified services, CONTRACTOR shall follow practices consistent with generally accepted professional and technical standards.

E. It shall be the duty of the CONTRACTOR to assure that all software products of its effort are technically sound and in conformance with all pertinent Federal, State and Local statutes, codes, ordinances, resolutions and other regulations. CONTRACTOR will not produce a software product which violates or infringes on any copyright or patent rights. The CONTRACTOR shall, without additional compensation, correct or revise any errors or omissions in its software products in accordance with the terms of this Agreement. Permitted or required approval by the OWNER of any software products furnished by CONTRACTOR shall not in any way relieve the CONTRACTOR of responsibility for the professional and technical accuracy and adequacy of its work scope. OWNER's review, approval, acceptance, or payment for any of CONTRACTOR's services herein shall not be construed to operate as a waiver of any rights under this Contract or of any cause of action arising out of the performance of this Contract, and CONTRACTOR shall be and remain liable in accordance with the terms of this Contract and applicable law for all damages to OWNER caused by CONTRACTOR's performance or failures to perform under this Contract.

F. CONTRACTOR shall appoint a Representative who will manage the performance of services. All of the services specified by this Contract shall be performed by the Representative, or by CONTRACTOR's associates and employees under the personal supervision of the Representative. Should the Representative, or any employee of CONTRACTOR be unable to complete his or her responsibility for any reason, the CONTRACTOR will replace him or her with a qualified person and notify OWNER of the replacement. If CONTRACTOR fails to make a required replacement within thirty (30) days, OWNER may terminate this Contract for default.

G. All materials, information, and documents, whether finished, unfinished, or draft, developed, prepared, completed, or acquired by CONTRACTOR for OWNER specifically for this Contract relating to the services to be performed hereunder and not otherwise used or useful in connection with services previously rendered or services to be rendered by CONTRACTOR to parties other than OWNER shall become the property of OWNER and shall be delivered to OWNER's representative upon completion or termination of this Contract, whichever comes first. CONTRACTOR shall not be liable for damages, claims, and losses arising out of any reuse of any work products on any other project conducted by OWNER. OWNER shall have the right to reproduce all documentation supplied pursuant to this Section.

H. The CONTRACTOR agrees that its officers and employees will reasonably cooperate with the OWNER in the performance of services under this Contract and will be available for consultation with OWNER at such reasonable times with advance notice as to not conflict with their other responsibilities.

I. The CONTRACTOR will follow OWNER'S standard procedures as followed by OWNER's staff and conveyed to Contractor in regard to programming changes; testing; change control; and other similar activities.

J. CONTRACTOR has or will retain such employees as it may need to perform the services required by this Contract. Such employees shall not be employed by the State of Nevada, the OWNER or any other political subdivision of the State of Nevada.

K. ANTI – DISCRIMINATION

OWNER and its Board of Commissioners are committed to promoting full and equal business opportunity for all persons doing business in Clark County. The CONTRACTOR acknowledges that the OWNER has an obligation to ensure that public funds are not used to subsidizing private discrimination.

The CONTRACTOR shall not refuse to employ or to discharge from employment any person because of his race, color, creed, national origin, gender identity, gender expression, or age, or to discriminate against a person with respect to hire, tenure, advancement, compensation or other terms, conditions or privileges of employment because of his race, creed, color, national origin, sex, sexual orientation, gender identity, gender expression, or age.

1. In connection with the performance of work under this Contract, the CONTRACTOR agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation, gender identity, gender expression, or age, including, without limitation, with regard to employment, upgrading, demotion or transfer recruitment advertising, layoff or termination, rates of pay or other forms of compensation.
2. The CONTRACTOR further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.
3. Any violation of such provision by a CONTRACTOR constitutes a material breach of Contract.
4. As used in this section, "sexual orientation" means having or being perceived as having an orientation for heterosexuality, homosexuality or bisexuality.

L. AIRPORT SECURITY

1. OWNER Property

For security purposes, OWNER property is divided into three (3) categories as follows:

a. Landside: The non-secure portion of the Airport;
b. Airside: The Secured Area/Security Identification Display Area (SIDA); and
c. Sterile Areas: The parts of the terminal buildings that require access through a security check point. Note: This is a part of the SIDA

All CONTRACTOR personnel working on OWNER property, Landside, Airside or Sterile Areas, must be badged for identification purposes.

2. Federal Regulations

49 Code of Federal Regulation (CFR), Part 1542, Airport Security requires that security of the Secured Area/SIDA at OWNER property be maintained at all times. This regulation has a provision for enforcement by the Transportation Security Administration (TSA), which may assess substantial fines ($10,000.00 per occurrence) for potential security breaches or security breaches by unauthorized persons and vehicles entering the Secured Area/SIDA on LAS. When working in the Secured Area/SIDA, CONTRACTOR personnel must visibly display at waist level or above on their outermost garment the appropriate OWNER's identification badge at all times.

CONTRACTOR agrees to accept and reimburse OWNER for any fines levied on OWNER by TSA for any violation of any TSA Security Regulations by CONTRACTOR and its employees or any of CONTRACTOR subcontractors, vendors, suppliers and agents and their employees. CONTRACTOR will reimburse owner for any fines levied for breaches of security due to CONTRACTOR activities or those of any tier subcontractor.

OWNER will determine the type of identification and training CONTRACTOR will be required to obtain. CONTRACTOR acknowledges that OWNER reserves the right to refuse identification badges to any person with a record of arrests and convictions which in its sole judgment would render that person an unacceptable risk to the security of the Airport.

3. Access to the Airport Secured Area/SIDA

Access to the Airport Secured Area/SIDA can be gained by personnel displaying a Maroon or Green badge. Personnel with a Tan Badge are only allowed access to and within the OWNER's Sterile Areas and Landside/Public Areas. CONTRACTOR will be allowed access to only those areas necessary to complete the work.

4. Airport Secured Area/SIDA

If a Maroon or Green badge holder enters a part of the Airport Secured/SIDA for which access has not been authorized, CONTRACTOR may be subject to a fine as detailed in Section L.2., and personnel may be subject to immediate and permanent removal, to include security identification badge revocation from the Airport by OWNER.

5. Landside/Public Work Areas

CONTRACTOR's personnel with a Tan badge can gain access to Landside/Public or Sterile Area work areas without escort. If a Tan badge holder enters an Airport Secured Area/SIDA, CONTRACTOR may be subject to a fine as detailed in Section L.2., and personnel may be subject to immediate and permanent removal from the Airport by OWNER. Personnel with Tan badges do not have the authority to escort and must be screened through the TSA passenger security checkpoint prior to entering Airport Sterile Areas.

M. The CONTRACTOR agrees to provide the information on the attached "Disclosure of Ownership/Principals" form Exhibit D prior to any Contract award by the Board of County Commissioners.

N. INTENTIONALLY LEFT BLANK

SECTION II RESPONSIBILITY OF OWNER

A. The OWNER agrees that its officers and employees will cooperate with CONTRACTOR in the performance of services under this Contract and will be available for consultation with CONTRACTOR at such reasonable times with advance notice as to not conflict with their other responsibilities.

B. The services performed by CONTRACTOR under this Contract shall be subject to review for compliance with the terms of this Contract by OWNER's representative. OWNER's representative, who OWNER shall designate by written notice, may delegate any or all of his responsibilities under this Contract to appropriate management staff of OWNER, and shall so inform CONTRACTOR by written notice before the effective date of each such delegation.

C. The review comments of OWNER's representative may be reported in writing as needed to CONTRACTOR. It is understood that OWNER's representatives review comments do not relieve CONTRACTOR from the responsibility for the professional and technical accuracy of all work delivered under this Contract.

D. OWNER shall, without charge, furnish to or make available for examination or use by CONTRACTOR as it may request, any data which OWNER has available, including as examples only and not as a limitation:

1. Copies of reports, surveys, records, and other pertinent documents.
2. Copies of previously prepared reports, job specifications, surveys, records, ordinances, codes, regulations, other documents, and information related to the services specified by this Contract.

CONTRACTOR shall return any original data provided by OWNER.

E. OWNER shall assist CONTRACTOR in obtaining data on documents from public officers or agencies and from private citizens and business firms whenever such material is necessary for the completion of the services specified by this Contract.

F. CONTRACTOR will not be responsible for accuracy of information or data supplied by OWNER or other sources to the extent such information or data would be relied upon by a reasonably prudent CONTRACTOR.

SECTION III SCOPE OF WORK

Services to be performed by the CONTRACTOR for the PROJECT shall consist of the work described in the Scope of Work as set forth in Exhibit A of this Contract, attached hereto.

SECTION IV CHANGES TO SCOPE OF WORK

A. INTENTIONALLY LEFT BLANK

B. No services for which additional compensation will be charged by the CONTRACTOR shall be furnished without the written authorization of the OWNER.

SECTION V COMPENSATION AND TERMS OF PAYMENT

A. OWNER agrees to pay CONTRACTOR for the performance of services described in the Scope of Work (Exhibit A), for the amount of $87,722.00 from May 2, 2012 through June 30, 2012 (pricing includes reboot support option). The total annual amount from July 1, 2012 through June 30, 2013 shall be $533,638.00 (pricing includes reboot support option). Thereafter, each annual amount shall increase by 3% per year. The annual amounts shall be paid in equal monthly installments. The OWNER's obligation to pay CONTRACTOR cannot exceed the fixed fee amount. It is expressly understood that the entire work defined in Exhibit A must be completed by the CONTRACTOR and it shall be the CONTRACTOR's responsibility to ensure that hours and tasks are properly budgeted so the entire PROJECT is completed for the said annual amount, plus approved additional fees and expenses.

B. Payments

1. Payment of invoices will be made within thirty (30) calendar days after receipt of an invoice that has been reviewed and approved by the OWNER's representative.
2. The OWNER'S representative shall notify the CONTRACTOR in writing within fourteen (14) calendar days of any disputed amount included on the invoice. Owner shall proceed to pay any undisputed amounts within thirty (30) calendar days, as provided above.
3. If the OWNER fails to pay CONTRACTOR within thirty (30) calendar days after receipt of an invoice and fails to provide notice of any disputed amount included on the invoice as provided above, late payments will be subject to interest at the then current legal interest rate.
4. In the event that legal action is taken by the OWNER or the CONTRACTOR based on a disputed payment, each party shall pay its own legal costs.
5. All payments shall be due within thirty (30) calendar days after receipt of the invoice.
6. Invoices shall be submitted to Accounts Payable, PO Box 11005, Las Vegas, NV 89111-1005.

C. OWNER'S Fiscal Limitations

1. The content of this section shall apply to the entire Contract and shall take precedence over any conflicting terms and conditions, and shall limit the OWNER's financial responsibility as indicated in Sections 2 and 3 below.
2. Notwithstanding any other provisions of this Contract, this Contract shall terminate and OWNER's obligations under it shall be extinguished at the end of the fiscal year in which the OWNER's Board of Commissioners fails to appropriate monies for the ensuing fiscal year sufficient for the payment of all amounts which will then become due. OWNER will give CONTRACTOR reasonable notice of such event.
3. OWNER's total liability for all charges for services which may become due under this Contract is limited to the total maximum expenditure(s) authorized in OWNER's purchase order(s) to the CONTRACTOR, except for Owner's liability in respect of claims, damages or expenses related thereto arising under this Contract.

SECTION VI SUBCONTRACTS

A. Services specified by this Contract shall not be subcontracted by the CONTRACTOR, without prior written approval of OWNER.

B. Approval by OWNER of CONTRACTOR's request to subcontract or acceptance of or payment for subcontracted work by OWNER shall not in any way relieve CONTRACTOR of responsibility for the professional and technical accuracy and adequacy of the work. CONTRACTOR shall be and remain liable for all damages to OWNER caused by negligent performance or non-performance of work under this Contract by CONTRACTOR's subcontractor or it's sub-subcontractor.

C. The compensation due under Section V shall not be affected by OWNER's approval of CONTRACTOR's request to subcontract.

SECTION VII MISCELLANEOUS PROVISIONS

A. Time Schedule

1. Time is of the essence for the purposes of this Contract.

2. If the CONTRACTOR's performance of services is delayed it shall notify the OWNER's representative in writing of the reasons for the delay.

3. In case of failure on the part of the CONTRACTOR to complete the work scope within the time specified in the Contract, or with such additional time(s) as may be granted by written agreement, or fails to prosecute the work or any separable part thereof, with such diligence as will insure completion within the time(s) specified in the Contract or any extensions thereof, the CONTRACTOR shall be responsible for all damages caused by its failure to perform its required work scope subject to the terms of this agreement.

B. Termination

OWNER reserves the right to terminate the CONTRACTOR for cause by giving sixty (60) days prior written notice.

The performance of the work under this contract may be terminated by the OWNER in whole, or from time to time in part, in accordance with this paragraph whenever the OWNER determines that such termination is in the best interest of the County. Any such termination will be effected by a minimum of sixty (60) days prior written notice by registered or certified mail, return receipt requested to the CONTRACTOR specifying the extent to which performance of work under the contract is terminated, and the date upon which such termination becomes effective. Further, it will be deemed conclusively presumed and established that such termination is made with just cause as therein stated and no proof in any claim, demand, or suit will be required of the OWNER regarding such discretionary action. If such termination is given for nonperformance of the CONTRACTOR for work under this contract, the CONTRACTOR will not make claim for any termination expenses, except long-lead items which will not be received within the succeeding six (6) months, and for which the CONTRACTOR has an outstanding financial obligation.

After receipt of Notice of Termination, and except as otherwise directed by the OWNER, the CONTRACTOR will:

1. Stop work under the contract on the date and to the extent specified in the Notice of Termination.
2. Place no further orders or subcontracts for materials, services, or facilities except as may be necessary for completion of such portions of the work under the contract as is not terminated.

3. Terminate all orders and subcontracts to the extent that they relate to the performance of work terminated by the Notice of Termination.

4. Assign to the OWNER, in the manner, at the times, and to the extent directed by the OWNER, all of the rights, title, and interest of the CONTRACTOR under the orders and subcontracts so terminated, in which case the OWNER will have the right, in its discretion, to settle or pay any or all claims arising out of the termination of such orders and subcontracts.

   Settle all outstanding liabilities and all claims arising out of such termination or orders and subcontracts, with the approval or ratification of the OWNER to the extent it may require, which approval or ratification will be final for all purposes of this Section.

5. Complete performance of such part of the work which have not been terminated by the Notice of Termination; and

6. Take such action as may be necessary, or as the OWNER may direct, for the protection and preservation of the property related to the contract which is in the possession of the CONTRACTOR and in which the OWNER has an interest.

7. Within sixty (60) days after Notice of Termination, the CONTRACTOR will submit his termination claim to the OWNER in the form and with the certification prescribed by the OWNER. Unless one or more extensions in writing are granted by the OWNER upon request of the CONTRACTOR made in writing within such sixty (60) day period or authorized extension thereof, any and all such claims will be conclusively deemed waived.

8. Subject to the provisions of this paragraph, the CONTRACTOR and OWNER may agree upon the whole or any part of the amount or amounts to be paid to the CONTRACTOR by reason of the total or partial termination of work pursuant hereto; provided that such agreed amount or amounts will never exceed the total year amounts as reduced by the amount of payments otherwise made and as further reduced by the amounts for work not terminated. The contract will be amended accordingly, and the CONTRACTOR will be paid the agreed amount. At no time may any partial termination result in CONTRACTOR's annual amount being reduced to less than the amount charged for one full-time person on-site.

9. Under a partial termination of the work under this contract, the OWNER will review the CONTRACTOR's termination claim, and make payment in the amount due the CONTRACTOR.

Neither party shall be considered in default in the performance of its obligations hereunder, nor any of them, to the extent that performance of such obligations, nor any of them, is prevented or delayed by any cause, existing or future, which is beyond the reasonable control of such party. Delays arising from the actions or inactions of one or more of CONTRACTOR's principals, officers, employees, agents, subcontractors, vendors or suppliers are expressly recognized to be within CONTRACTOR's control.

CONTRACTOR shall not be in breach of this Contract if, for any reason, it discontinues its ATS business. It is provided, however, that in the event of such an occurrence, CONTRACTOR shall be obligated to act in good faith at the time of such occurrence and to the extent CONTRACTOR has such information readily available to assist OWNER in procuring the necessary technology and technical assistance necessary to continue to operate and maintain OWNER'S ATS.

C. Survivability

The terms and conditions of the Contract regarding confidentiality, indemnification, warranties, payment, and all others that by their sense and context are intended to survive the expiration of the Agreement will survive to the extent allowed for under applicable law.

D. Covenant Against Contingent Fees

The CONTRACTOR warrants that no person or selling agency has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide permanent employees. For breach or violation of this warranty, the OWNER shall have the right to annul this Contract without liability or in its discretion to deduct from the Contract price or consideration or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

E. Gratuities

1. The OWNER may, by written notice to the CONTRACTOR, terminate this Contract if it is found after notice and hearing by the OWNER that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the CONTRACTOR or any agent or representative of the CONTRACTOR to any officer or employee of the OWNER with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending or making of any determinations with respect to the performance of this Contract.
2. In the event this Contract is terminated as provided in paragraph 1 hereof, the OWNER shall be entitled:
   a. to pursue the same remedies against the CONTRACTOR as it could pursue in the event of a breach of this Contract by the CONTRACTOR; and
   b. as a penalty in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the OWNER) which shall be not less than three (3)nor more than ten (10) times the costs incurred by the CONTRACTOR in providing any such gratuities to any such officer or employee.
3. The rights and remedies of the OWNER provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this Contract.

F. Insurance

The CONTRACTOR shall provide the OWNER with proof of insurance and endorsements affecting coverage as specified in **Exhibit B** within ten (10) working days after OWNER request.

The CONTRACTOR shall obtain and maintain the insurance coverage as required in **Exhibit B**; incorporated herein by this reference. The CONTRACTOR shall comply with the terms and conditions set forth in said **Exhibit B**, and shall include costs of such insurance coverage in their prices.

G. Indemnity

The CONTRACTOR and its subcontractors of any tier, hereby indemnifies and shall defend and hold harmless OWNER, its officials, employees, OWNER's Representative, Authorized Representatives and their employees from and against any and all suits, actions, legal and or administrative proceedings, claims, demands, damages, liabilities, interest, attorney's fees, costs and expenses of whatsoever kind or nature, including those arising out of injury to or death of CONTRACTOR's employees, to the extent caused by any negligent act, omission or fault or willful misconduct whether active or passive of CONTRACTOR and its subcontractors or of anyone acting under its direction or control or on its behalf in connection with this Contract. OWNER shall promptly notify CONTRACTOR, in writing, of any such claim, demand, or lawsuit. It is understood that CONTRACTOR will act in an advisory role only and will have no responsibility for directing the work of OWNER personnel or directing or enforcing OWNER policies and procedures in performing the ATS maintenance and operation.

H. Patent Indemnity

CONTRACTOR hereby indemnifies and shall defend and hold harmless OWNER, its officials, employees, volunteers, OWNER's Representative, Authorized Representatives and their employees respectively from and against all claims, losses, costs, damages, and expenses, including attorney's fees, incurred by OWNER, its officials, employees, volunteers, OWNER's Representative, Authorized Representatives and their employees, respectively, and as a result of or in connection with any claims or actions based upon infringement or alleged infringement of any patent and arising out of the use of the equipment or materials furnished under the Contract by CONTRACTOR, or out of the processes or actions employed by, or on behalf of CONTRACTOR in connection with the performance of the Contract. CONTRACTOR shall, at its sole expense, promptly defend against any such claim or action unless directed otherwise by OWNER, its officials, employees, volunteers, OWNER's Representative, Authorized Representatives and their employees; provided OWNER, its officials, employees, volunteers, OWNER's Representative, Authorized Representatives and their employees shall have notified CONTRACTOR upon becoming aware of such claims or actions, and provided further that CONTRACTOR aforementioned obligations shall not apply to equipment, materials, or processes furnished or specified by OWNER or its representatives.

CONTRACTOR shall have the right, in order to avoid such claims or actions, to substitute at its expense non-infringing equipment, materials, or processes, or to modify such infringing equipment, materials and processes so they become non-infringing, or obtain the necessary licenses to use the infringing equipment, material or processes, provided that such substituted and modified equipment, materials and processes shall meet all the requirements and be subject to all the provisions of this Contract.

I. Subcontractor Information

The CONTRACTOR shall provide a list of the Minority-Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), Physically-Challenged Business Enterprise (PBE), Small Business Enterprise (SBE), and Nevada Business Enterprise (NBE) subcontractors for this Contract utilizing the attached format (Exhibit C). The information provided in Exhibit C by the CONTRACTOR is for the OWNER's information only.

J. Audits

The performance of any portion of this contract by the CONTRACTOR which results in special charges or additional costs to OWNER is subject to review by the OWNER to insure Contract compliance. The CONTRACTOR agrees to provide the OWNER any and all information requested that relates to the performance of any such portion of this contract. All requests for information shall be made in writing to the CONTRACTOR. Failure to provide the information requested within the timeline provided in the written information request may be considered a material breach of Contract and shall be cause for suspension and/or termination of the Contract.

K. Covenant

The CONTRACTOR covenants that it presently has no interest and that it will not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this Contract. CONTRACTOR further covenants, to its knowledge and ability, that in the performance of said services no person having any such interest shall be employed.

L. Assignment

Any attempt by CONTRACTOR to assign or otherwise transfer any interest in this Contract without the prior written consent of the OWNER shall be void. CONTRACTOR may, however, assign or transfer the Contract to a parent, subsidiary or affiliated entity with notice to OWNER, provided that CONTRACTOR's Representative shall not be changed as a result of such assignment or transfer.

M. Governing Law

Nevada law shall govern the interpretation of this Contract.

N. Term of Contract

OWNER agrees to retain CONTRACTOR for the period from May 2, 2012 through June 30, 2019 with the option to renew for four (4) five-year periods. OWNER shall notify CONTRACTOR of its intent to renew a minimum of 90 days prior to the beginning of the subsequent renewal period. During this period, CONTRACTOR agrees to provide services as required by OWNER within the scope of this Contract. Ninety days prior to the exercise of any renewal option, the OWNER and CONTRACTOR shall negotiate any necessary changes to the current pricing structure for the subsequent renewal term of this Contract. Both parties agree to negotiate in good faith to agree to a commercially reasonable pricing structure; however, either party may terminate if agreement cannot be reached following such good faith negotiations.

O. Confidential Treatment of Information

To the extent allowed by law, both Parties shall preserve in strict confidence any information obtained, assembled or prepared in connection with the performance of this Contract and shall treat the other Party's confidential information with the same level of care as is afforded its own confidential information.

P. Limitation on CONTRACTOR'S liability

Except as provided for under its Insurance, Indemnity or Patent Indemnity obligations provided herein, and except for liability in respect of bodily injury or death, in no event shall CONTRACTOR'S liability exceed 100% of the annual Contract sum, excluding the amount associated with the Maximo license fees.

Neither CONTRACTOR nor OWNER shall be liable to the other for any direct, incidental or consequential damages of any nature or howsoever arising, including, but not limited to loss of profit, loss of revenue or loss of business use, subject to the exceptions set forth in this subsection "O."

Q. Notice

Any notice required to be given hereunder shall be deemed to have been given when received by the party to whom it is directed by personal service, hand delivery, certified U.S. mail, return receipt requested or facsimile, at the following addresses:

TO OWNER: RANDALL H. WALKER, DIRECTOR OF AVIATION
CLARK COUNTY DEPARTMENT OF AVIATION
P.O. BOX 11005
LAS VEGAS, NEVADA 89111-1005

TO CONTRACTOR: General Manager Operations and Maintenance, and
Vice President Contracts and Legal
BOMBARDIER TRANSPORTATION (HOLDINGS) USA, INC.
1501 LEBANON CHURCH ROAD
PITTSBURGH, PENNSYLVANIA 15236-1491

IN WITNESS WHEREOF, the parties have caused this Contract to be executed the day and year first above written.

OWNER:

CLARK COUNTY, NEVADA

By: _____
RANDALL H. WALKER
Director of Aviation

CONTRACTOR:

BOMBARDIER TRANSPORTATION (HOLDINGS) USA INC.

By: _____

Name: _____

Title: _____

By: _____

Name: _____

Title: _____

APPROVED AS TO FORM:

STEVEN B. WOLFSON
District Attorney

By: _____
E. LEE THOMSON
Chief Deputy District Attorney

EXHIBIT A

SCOPE OF WORK

TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS
CBE-670

1. OWNER's TA Support Contract with CONTRACTOR

It has been determined by the OWNER that a Technical Assistance (TA) Support Contract is key for the successful operation and transition of maintenance for the Tram systems to be transitioned from CONTRACTOR to in-house staff of OWNER facility.

CONTRACTOR as the Manufacturer (Direct Vendor) shall provide an on-site Vendor Support representative to provide services which OWNER believes will enable the OWNER to operate, perform inspections, and complete preventative and corrective maintenance and repairs on the Airport's Automated Transit Systems (ATS). CONTRACTOR shall also provide urgent and necessary services to assist the OWNER in its efforts to restore the ATS system to operational status during significant system failures regardless of the time of day. The essence of this service provided by CONTRACTOR under this agreement is vendor support to aid the OWNER's goal to minimize operational cost, improve performance and efficiency, reduce down time events and provide a vital link as appropriate, via the on-site CONTRACTOR representative, to CONTRACTOR's headquarters expertise and support. These services will include the tasks specified below. Additional tasks may be mutually agreed upon by both parties during the course of the agreement.

This TA contract embodies all CONTRACTOR technical assistance support obligations for the C & D systems. Upon CONTRACTOR's receipt of notice of substantial completion on Contract 2273, this TA contract also applies to Terminal 3 (T3).

During the course of the systems useful life, overhauls of the equipment will be performed by the OWNER. At the end of the useful life, it is anticipated that the OWNER will perform a system upgrade and/or modernization of the ATS. OWNER acknowledges that CONTRACTOR, as the Original Equipment Manufacturer of the ATS, is qualified and well-situated to perform or support such efforts and agrees, to the extent allowed by law, to offer to CONTRACTOR the first opportunity to provide same.

2. On Site Technical Assistance Support Work Scope:

1. It is understood that CONTRACTOR will act in an advisory role only and will have no responsibility for directing the work of OWNER personnel or directing or enforcing OWNER policies and procedures
2. Provide urgent and necessary services to assist the OWNER in its efforts to restore the ATS system to operational status during significant system failures regardless of the time of day.
3. Provide a link as appropriate, via the on-site CONTRACTOR representative, to CONTRACTOR's headquarters expertise and support, including software support. It is understood that nothing in this Agreement is intended as an extension of any warranty provided on software or other components, equipment or systems supplied by CONTRACTOR under previous contracts and that certain software support may require additional compensation.

    (a) CONTRACTOR shall employ reasonable efforts to remedy any routine errors that are identified by Owner and communicated to CONTRACTOR.

    (b) CONTRACTOR shall advise OWNER if updates or other enhancement opportunities become available for any system software.

    (c) If option is exercised by OWNER, CONTRACTOR will provide on call telephone support by CONTRACTOR's software specialist(s) while OWNER reboots the ATS servers from 1:00 a.m. to 3:00 a.m. Pacific Time each Thursday (see "Reboot Support Option" in Section 4 below).

4. Provide technical assistance for OWNER's operation and preventative maintenance program. This will include monitoring results, reviewing processes, and making recommendations based on their findings.
5. Provide technical assistance for service interruptions, restoration after a failure, and the repair and/or adjustment of equipment OWNER identifies as not in service or, removed from service as a result of failure.
6. Representative will be available at OWNER discretion for on site assistance during system incidents.
7. Facilitate and interface with CONTRACTOR headquarters personnel on technical issues.

8. Recommend changes to OWNER procedures due to potential safety implications.
9. Provide proposal for potential improvements in availability and/or reliability.
10. OWNER will provide the on site representative with access to all report outputs to allow representative to generate weekly, monthly and yearly availability reports.
11. Present cost and time estimates for projects outside of the agreement.
12. Facilitate any parts issues. CONTRACTOR shall provide repair or replacement parts at fair and reasonable prices based on prices for similar or equivalent items charged to its other customers prevailing at the time of purchase.
13. Facilitate and interface with CONTRACTOR headquarters personnel to propose changes in operations and maintenance procedures, primary and subsystem enhancements, drawing and schematic updates, and upgrade opportunities.
14. Facilitate and provide interface between CONTRACTOR headquarters personnel and OWNER to provide information on current improvements and system related problems that have been discovered on similar CONTRACTOR ATS systems.
15. Coordinate and review ATS defined safety and reliability improvements that have been generated by OWNER. Provide cost and time estimates for such improvements.
16. Any revisions identified by CONTRACTOR as necessary to the safety of the system resulting from a design deficiency will be provided at no additional cost, subject to applicable law.
17. Call in assistance via the CONTRACTOR's on-site representative to CONTRACTOR engineer(s) for out of the ordinary system issues. If such assistance requires the engineer to travel to the site, the CONTRACTOR's then current hourly rate shall apply. This rate may be amended throughout the term of the Contract and related travel expense will be pre-approved in advance of bringing out the expert to help resolve the issue.
18. Send defective parts back to CONTRACTOR (RMR) and track and log all associated paperwork. CONTRACTOR representative will complete all necessary CONTRACTOR paperwork. OWNER will package up the item(s) accordingly and hand over to OWNER ATS supervisor for shipping.
19. Ensure all proprietary PC boards and equipment are loaded with correct software and ready for system use
20. It is understood that it shall not be CONTRACTOR responsibility to resolve any such technical issue but rather to assist and advise OWNER.
21. Submit proposal(s) and price for on the job training for maintenance staff to upgrade competencies where OWNER identifies a need.
22. CONTRACTOR shall not incur any financial liability under this Contract that results from OWNER's lack of or improper operation and maintenance of the ATS.

3. <u>On Site Technical Assistance Support Administration:</u>

Supplemental to the scope of work, the OWNER and CONTRACTOR, agree to the following:

1. OWNER will be the representative's primary assignment.
2. CONTRACTOR technical assistance representative shall take direction from OWNER ATS Manager only.
3. CONTRACTOR technical assistance representative work hours will be a standard 40 hour week, Monday through Friday. Representative's benefits, holidays, and vacation will be in accordance with CONTRACTOR's policies. Adjustments to work schedule and shift will be mutually agreed upon between the CONTRACTOR technical assistance representative and the OWNER.
4. Contact of the CONTRACTOR technical assistance representative during off hours and for emergency situations (both lanes out of service, major damage to equipment, or personal injury) will be via cell phone.
5. The representative will be available to CONTRACTOR to attend CONTRACTOR training sessions, engineering workshops and reliability workshops for a maximum of fifteen (15) working days per contract year. The maximum time for deployment of the representative away from OWNER for such sessions (but excluding scheduled vacations) will be no longer than five (5) consecutive working days at any time.
6. Problems and/or system failures under investigation should be resolved or a plan should be in place prior to the representative leaving the site.

7. CONTRACTOR will advise point of contact when the technical assistance representative is on holiday or on planned vacation.
8. If a system failure or other system related problem occurs while the representative is away from the site, except for planned vacation, the OWNER reserves the right to request the representative to return to OWNER within twenty four (24) hours. If system related problems can be resolved through telephone support and agreed to by the OWNER, CONTRACTOR will make the representative available by telephone on an as needed basis.
9. The representative shall not be changed without the review and prior written approval of the OWNER. The OWNER reserves the right to reject a proposed candidate after a resume review.
10. The OWNER may eliminate the need for the representative at a future date with 60 days notice. CONTRACTOR agrees to provide access to spare parts at CONTRACTOR aftermarket pricing at fair reasonable prices based on equivalent prices to other similar users.
11. Representative will be knowledgeable of CX-100 / City Flo-650 system, similar to that currently running at OWNER.
12. OWNER will furnish the following to be used for work purposes only. CONTRACTOR representative will follow OWNER policies and procedures for approved use of such items.
    a. Security Badge
    b. Parking
    c. Lockable Office
    d. Radio / Keys
    e. Tools / Flashlight
    f. Computer with printer, internet & OWNER database access
    g. Cell phone with camera
    h. Office supplies
    i. Land line phone & long distance
13. CONTRACTOR will provide the representative with a mailing address, a computer for access to CONTRACTOR intranet, and any other proprietary applications, software or material that might be needed to fulfill contract obligations. OWNER agrees that CONTRACTOR will continue to maintain and protect such proprietary applications and OWNER receives no entitlement to access or use of same by virtue of this agreement.
14. OWNER will maintain the Maximo System version 7.1.1.6 provided as part of the 2273 Contract. CONTRACTOR shall provide licensing for up to 29 OWNER ATS employees for the duration of this agreement. Should Maximo version 7.1.1.6 no longer be available or if the OWNER wishes to upgrade to a newer Maximo version a change order will be executed to the agreement.

4. **Payment Schedule:**

YEAR	TIME PERIOD	ESCALATION	MONTHLY PAYMENT	TOTAL PAYMENTS
1	5/2/2012 – 06/30/2012	N/A	$39,407.00	$77,734.00
2	07/01/2012 – 06/30/2013	N/A	$39,407.00	$472,880.00
3	07/01/2013 – 06/30/2014	3.00%	$40,589.00	$487,066.00
4	07/01/2014 – 06/30/2015	3.00%	$41,807.00	$501,678.00
5	07/01/2015 – 06/30/2016	3.00%	$43,061.00	$516,729.00
6	07/01/2016 – 06/30/2017	3.00%	$44,353.00	$532,231.00
7	07/01/2017 – 06/30/2018	3.00%	$45,683.00	$548,198.00
8	07/01/2018 – 06/30/2019	3.00%	$47,054.00	$564,643.00
		TOTAL AMOUNT:		$3,701,159.00

Reboot Support Option

For Years 1 and 2 above, $60,758 annually ($5,063 monthly). Delete obligation or renegotiate for period beginning July 1, 2013.

EXHIBIT B
INSURANCE REQUIREMENTS

TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS
CBE-670

TO ENSURE COMPLIANCE WITH THE BID DOCUMENT, CONSULTANT SHOULD FORWARD THE FOLLOWING INSURANCE CLAUSE AND SAMPLE INSURANCE FORM TO THEIR INSURANCE AGENT PRIOR TO BID SUBMITTAL.

Format/Time: The CONTRACTOR, shall provide OWNER with Certificates of Insurance, per the sample format (page A-4), as evidenced by ACORD Form 25 Certificate of Insurance, written by a firm licensed to write such insurance in the State of Nevada, for coverage's as listed below, and endorsements affecting coverage required by this Agreement within **ten (10) calendar days** after the award by the OWNER. All required aggregate limits shall be disclosed and amounts entered on the Certificate of Insurance, and shall be maintained for the duration of the contract and any renewal periods.

1. Best Key Rating: The OWNER requires insurance carriers to maintain during the contract term, a Best Key Rating of A- VII or higher, which shall be fully disclosed and entered on the Certificate of Insurance. The OWNER requires insurance carriers to maintain during the Contract term, a Best Key Rating of A- VII (seven) or higher, which shall be fully disclosed and entered on the certificate of insurance. A lower Best Key Rating may be accepted with the express written permission of the OWNER.

2. OWNER Coverage: The OWNER, its officers, employees, agents and volunteers must be expressly covered as additional insured's except on workers' compensation, and Employer's Liability insurance coverage's. The CONTRACTOR insurance shall be primary as respects the OWNER, its officers, employees, agents, and volunteers.

3. Endorsement/Cancellation: The CONTRACTOR general liability insurance policies shall be endorsed to recognize specifically the CONTRACTOR contractual obligation of additional insured to OWNER and must note that the OWNER will be given notice pursuant to policy provisions by certified mail "return receipt requested" of any policy changes cancellations, or any erosion of insurance limits.

4. Worker's Compensation: Worker's compensation insurance in accordance with laws of the State of Nevada covering your employees.

5. Employer's Liability: Employer's liability with a minimum limit of $500,000.

6. Commercial Liability: Commercial liability insurance covering standard Commercial General Liability insurance policy ("Occurrence Form") for operations of the CONTRACTOR and for liability arising from acts of its Subcontractors acting on Contractor's behalf, including Independent Contractors, Products and Completed Operations, Contractual Liability and Personal Injury Liability with Limits not less than:

Bodily Injury and Property Damage Combined:

General Aggregate	$2,000,000.
Products/Completed Operations Aggregate	$2,000,000.
Personal and Advertising Injury	$1,000,000.
Each Occurrence Limit	$1,000,000.

It is further required that all insurance be on an ***occurrence basis*** and not a *claim made* basis.

These are **minimum requirements.** You may want to discuss with your own agent / broker or risk manager the necessity for additional protection to meet your own individual circumstances.

Other sections that pertain to what you must provide and your responsibilities include:

You must furnish evidence that the above has been complied with **prior** to starting any work or services on your project.

7. Deductibles: All deductibles and self-insured retentions shall be fully disclosed in the Certificates of Insurance and may not exceed **$100,000** without the express written permission of the OWNER.

8. Failure To Maintain Coverage: If the CONTRACTOR fails to maintain any of the insurance coverage's required herein, OWNER may withhold payment, order the CONTRACTOR to stop the work, declare the CONTRACTOR in breach, suspend or terminate the Contract, assess liquidated damages as defined herein, or may purchase replacement insurance or pay premiums due on existing policies. OWNER may collect any replacement insurance costs or premium payments made from the CONTRACTOR or deduct the amount paid from any sums due the CONTRACTOR under this Contract.

9. Damages: The CONTRACTOR is required to remedy all injuries to persons and damage or loss to any property of OWNER caused in whole or in part by the CONTRACTOR, their subcontractors or anyone employed, directed, or supervised by CONTRACTOR.

10. Cost: The CONTRACTOR shall pay all associated costs for the specified insurance. The cost shall be included in the bid price(s).

11. Insurance Submittal Address: All Insurance Certificates requested shall be sent to the Clark County Department of Aviation, Purchasing, 5757 Wayne Newton Boulevard, P. O. Box 11005, Las Vegas, NV 89111-1005.

12. Insurance Form Instructions: All required insurance coverage as stated herein will be evidenced by a current Acord Form 25 Certificate(s) of Insurance, such Certificates will include, but will not be limited to, the following:

1. Insurance Broker's name, complete address, phone and fax numbers.
2. Successful Bidder's name, complete address, phone and fax numbers.
3. Insurance Company's Best Key Rating
4. Commercial General Liability (Per Occurrence)
   (A) Policy Number
   (B) Policy Effective Date
   (C) Policy Expiration Date
   (D) General Aggregate ($2,000,000)
   (E) Products-Completed Operations Aggregate ($2,000,000)
   (F) Personal & Advertising Injury ($1,000,000)
   (G) Each Occurrence ($1,000,000)
   (H) Fire Damage ($50,000)
   (I) Medical Expenses ($5,000)
5. Worker's Compensation
6. Description: Bid Number and Name of Contract (must be identified on the initial insurance form and each renewal form).
7. Certificate Holder:
   Clark County
   c/o Department of Aviation-Purchasing
   5757 Wayne Newton Boulevard
   P.O. Box 11005
   Las Vegas, Nevada 89111-1005
8. Authorized Agent Signature

CLARK COUNTY CERTIFICATE OF INSURANCE

ISSUED DAY (MM/DD/YY)

PRODUCER

1. INSURANCE BROKERS NAME, ADDRESS, PHONE & FAX NUMBERS

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE		3.BEST'S RATING
COMPANY LETTER	A COMPANY'S	
COMPANY LETTER	B BEST KEY	
COMPANY LETTER	C RATING	
COMPANY LETTER	D A- VII	or BETTER
COMPANY LETTER	E	

INSURED

2. NAME, ADDRESS, PHONE & FAX NUMBERS

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
4.	GENERAL LIABILITY	(A)	(B)	(C)	GENERAL AGGREGATE	$(D)	2,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$(E)	2,000,000
	CLAIMS MADE X OCCUR.				PERSONAL & ADV. INJURY	$(F)	1,000,000
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$(G)	1,000,000
	UNDERGROUND EXPLOSION & COLLAPSE	(J) Deductible/Retention			FIRE DAMAGE (Any one fire)	$(H)	50,000
	INDEPENDENT CONTRACTOR				MED EXPENSE (Any one person)	$(I)	
5.	AUTOMOBILE LIABILITY	(K)	(L)	(M)	COMBINED SINGLE LIMIT	$(N)	5,000,000
	X ANY AUTO				BODILY INJURY (Per person)	$	
	ALL OWNED AUTOS				BODILY INJURY (Per accident)	$	
	SCHEDULED AUTOS						
	HIRED AUTOS				PROPERTY DAMAGE	$	
	NON-OWNED AUTOS						
	GARAGE LIABILITY	(O)Deductible/Retention					
	EXCESS LIABILITY				EACH OCCURRENCE	$	5,000,000
	UMBRELLA FORM				AGGREGATE	$	5,000,000
	OTHER THAN UMBRELLA FORM						
6.	X WORKER'S COMPENSATION				STATUTORY LIMITS		
					EACH ACCIDENT	$	1,000,000
					DISEASE-POLICY LIMIT	$	1,000,000
					DISEASE-EACH EMPLOYEE	$	1,000,000
	OTHER						

7. DESCRIPTION: CBE NO. 670 - TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS, CLARK COUNTY, ITS COMMISSIONERS, OFFICERS, EMPLOYEES, RELATED ENTITIES AND AUTHORIZED REPRESENTATIVES ARE INSUREDS WITH RESPECT TO LIABILITY ARISING OUT OF THE ACTIVITIES BY OR ON BEHALF OF THE ADDITIONAL INSURED IN CONNECTION WITH THIS PROJECT. PER ISO FORM ENCLOSED (ENDORSEMENT FORM)

8. CERTIFICATE HOLDER

CLARK COUNTY
C/O DEPARTMENT OF AVIATION
PURCHASING
5757 WAYNE NEWTON BLVD.
P.O. BOX 11005
LAS VEGAS, NV 89111-1005

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

9. Authorized Agent

NAMED INSURED:					
POLICY PERIOD:				ENDORSEMENT EFFECTIVE DATE:	
CBE NO.	670	TITLE:	TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS		

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY

ADDITIONAL INSURED:

CLARK COUNTY, ITS COMMISSIONERS, OFFICERS, EMPLOYEES, RELATED ENTITIES AND AUTHORIZED REPRESENTATIVES

THIS ENDORSEMENT MODIFIES INSURANCE PROVIDED UNDER THE FOLLOWING:

Automobile Liability - (as per form above) Policy No:

General Liability - (as per form above) Policy No.:

SCHEDULE (if required)

Name of Person or Organization:

Locations and Description of Completed Operations:

(If no entry appears above, information required to complete this endorsement will be shown in the
declarations as applicable to this endorsement.)

Section II

Who is an insured is amended to include as an additional insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

Authorized Agent (print name) Signature Date

ATTACHMENT 1

AFFIDAVIT

I, _____, on behalf of my company, _____, being
(Name of Sole Proprietor) (Legal Name of Company)

duly sworn, depose and declare:

1. I am a Sole Proprietor;

2. I will not use the services of any employees in the performance of this contract, identified as CBE No. 670 entitled, Technical Assistance Support Contract for Automated Transit Systems;

3. I have elected to not be included in the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive; and

4. I am otherwise in compliance with the terms, conditions, and provisions of NRS Chapters 616A-616D, inclusive.

I release Clark County from all liability associated with claims made against me and my company, in the performance of this contract, that relate to compliance with NRS Chapters 616A-616D, inclusive.

Signed this _____ day of _____, _____.

Signature

State of Nevada
County of Clark

On this _____ day of _____, _____, before the undersigned Notary Public, personally appeared _____, having proved on a satisfactory basis to be the person(s) whose name(s) _____ subscribed to this instrument, and acknowledge that _____ executed it.

Witness my hand and official seal.

_____
Notary's Signature

EXHIBIT C

TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS
CBE-670

FOR INFORMATIONAL PURPOSES ONLY:

The above referenced firm is a ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE ☐LBE as defined below.

STATE OF NEVADA BUSINESSES

MINORITY OWNED BUSINESS ENTERPRISE (MBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity.

WOMEN OWNED BUSINESS ENTERPRISE (WBE): An independent and continuing Nevada business for profit that performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more women.

PHYSICALLY-CHALLENGED BUSINESS ENTERPRISE (PBE): An independent and continuing Nevada business for profit which performs a commercially useful function and is at least fifty-one (51%) percent owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.

SMALL BUSINESS ENTERPRISE (SBE): An independent and continuing Nevada business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed two million dollars ($2,000,000).

NEVADA BUSINESS ENTERPRISE (NBE): Any Nevada business that has the resources necessary to sufficiently perform identified County projects, and is owned or controlled by individuals that are not designated as socially or economically disadvantaged.

BUSINESSES IN OTHER STATES

LARGE BUSINESS ENTERPRISE (LBE): An independent and continuing business for profit, which performs a commercially useful function and is not located in Nevada.

EXHIBIT C

TECHNICAL ASSISTANCE SUPPORT CONTRACT FOR AUTOMATED TRANSIT SYSTEMS
CBE-670

SUBCONTRACTOR INFORMATION

It is our intent to utilize the following MBE, WBE, PBE, SBE, and NBE subcontractors in association with this Contract:

1. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

2. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

3. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

4. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

5. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

6. Subcontractor Name: _____
   Contact Person: _____ Telephone Number _____
   Description of Work: _____
   Estimated Percentage of Total Dollars: _____
   Business Enterprise Type: ☐MBE ☐WBE ☐PBE ☐SBE ☐NBE
   Ethnicity: ☐Asian ☐Black ☐Caucasian ☐Hispanic ☐Native American ☐Other:_____

☐ No MBE, WBE, PBE, SBE, nor NBE subcontractors will be used.

DISCLOSURE OF OWNERSHIP/PRINCIPALS

EXHIBIT D
DISCLOSURE OF OWNERSHIP / PRINCIPALS

INSTRUCTIONS FOR COMPLETING THE DISCLOSURE OF OWNERSHIP/PRINCIPALS FORM

Purpose of the Form

The purpose of the Disclosure of Ownership/Principals Form is to gather ownership information pertaining to the business entity for use by the Board of County Commissioners ("BCC") in determining whether members of the BCC should exclude themselves from voting on agenda items where they have, or may be perceived as having a conflict of interest, and to determine compliance with Nevada Revised Statute 281A.430, contracts in which a public officer or employee has interest is prohibited.

General Instructions

Completion and submission of this Form is a condition of approval or renewal of a contract or lease and/or release of monetary funding between the disclosing entity and the appropriate Clark County government entity. Failure to submit the requested information may result in a refusal by the BCC to enter into an agreement/contract and/or release monetary funding to such disclosing entity.

Detailed Instructions

All sections of the Disclosure of Ownership form must be completed. If not applicable, write in N/A.

Business Entity Type – Indicate if the entity is an Individual, Partnership, Limited Liability Company, Corporation, Trust, Non-profit Organization, or Other. When selecting 'Other', provide a description of the legal entity.

Non-Profit Organization (NPO) - Any non-profit corporation, group, association, or corporation duly filed and registered as required by state law.

Business Designation Group – Indicate if the entity is a Minority Owned Business Enterprise (MBE), Women-Owned Business Enterprise (WBE), Small Business Enterprise (SBE), or Physically-Challenged Business Enterprise (PBE). This is needed in order to provide utilization statistics to the Legislative Council Bureau, and will be used only for such purpose.

Minority Owned Business Enterprise (MBE):

An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more minority persons of Black American, Hispanic American, Asian-Pacific American or Native American ethnicity..

Women Owned Business Enterprise (WBE):

An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more women.

Physically-Challenged Business Enterprise (PBE):

An independent and continuing business for profit which performs a commercially useful function and is at least 51% owned and controlled by one or more disabled individuals pursuant to the federal Americans with Disabilities Act.

Small Business Enterprise (SBE):

An independent and continuing business for profit which performs a commercially useful function, is not owned and controlled by individuals designated as minority, women, or physically-challenged, and where gross annual sales does not exceed $2,000,000.

Business Name (include d.b.a., if applicable) – Enter the legal name of the business entity and enter the "Doing Business As" (d.b.a.) name, if applicable.

Corporate/Business Address, Business Telephone, Business Fax, and Email – Enter the street address, telephone and fax numbers, and email of the named business entity.

Local Business Address, Local Business Telephone, Local Business Fax, and Email – If business entity is out-of-state, but operates the business from a location in Nevada, enter the Nevada street address, telephone and fax numbers, point of contact and email of the local office. Please note that the local address must be an address from which the business is operating from that location. Please do not include a P.O. Box number, unless required by the U.S. Postal Service, or a business license hanging address.

Number of Clark County Nevada Residents employed by this firm.

List of Owners/Officers – Include the full name, title and percentage of ownership of each person who has ownership or financial interest in the business entity. If the business is a publicly-traded corporation or non-profit organization, list all Corporate Officers and Directors only.

For All Contracts – **(Not required for publicly-traded corporations)**

1) Indicate if any individual members, partners, owners or principals involved in the business entity are a Clark County full-time employee(s), or appointed/elected official(s). If yes, the following paragraph applies.

   In accordance with NRS 281A.430.1, a public officer or employee shall not bid on or enter into a contract between a government agency and any private business in which he has a significant financial interest, except as provided for in subsections 2, 3, and 4.

2) Indicate if any individual members, partners, owners or principals involved in the business entity have a second degree of consanguinity or affinity relation to a Clark County full-time employee(s), or appointed/elected official(s) (reference form on Page 2 for definition). If YES, complete the Disclosure of Relationship Form. Clark County is comprised of the following government entities: Clark County, University Medical Center of Southern Nevada, Department of Aviation (OWNER), and Clark County Water Reclamation District. Note: The Department of Aviation includes all of the General Aviation Airports (Henderson, North Las Vegas, and Jean).

A professional service is defined as a business entity that offers business/financial consulting, legal, physician, architect, engineer or other professional services.

DISCLOSURE OF OWNERSHIP/PRINCIPALS

Signature and Print Name – Requires signature of an authorized representative and the date signed.

Disclosure of Relationship Form – If any individual members, partners, owners or principals of the business entity is presently a Clark County employee, public officer or official, or has a second degree of consanguinity or affinity relationship to a Clark County employee, public officer or official, this section must be completed in its entirety.

Business Entity Type						
☐ Sole Proprietorship	☐ Partnership	☐ Limited Liability Company	☐ Corporation	☐ Trust	☐ Non-Profit Organization	☐ Other

Business Designation Group					
☐ MBE	☐ WBE	☐ SBE	☐ PBE	☐	☐
Minority Business Enterprise	Women-Owned Business Enterprise	Small Business Enterprise	Physically Challenged Business Enterprise		

Corporate/Business Entity Name:			
(Include d.b.a., if applicable)			
Street Address:		Website:	
City, State and Zip Code:		POC Name and Email:	
Telephone No:		Fax No:	
Local Street Address:		Website:	
City, State and Zip Code:		Local Fax No:	
Local Telephone No:		Local POC Name Email:	
Number of Clark County Nevada Residents Employed:			

All entities, with the exception of publicly-traded and non-profit organizations, must list the names of individuals holding more than five percent (5%) ownership or financial interest in the business entity appearing before the Board.

Publicly-traded entities and non-profit organizations shall list all Corporate Officers and Directors in lieu of disclosing the names of individuals with ownership or financial interest. The disclosure requirement, as applied to land-use applications, extends to the applicant and the landowner(s).

Entities include all business associations organized under or governed by Title 7 of the Nevada Revised Statutes, including but not limited to private corporations, close corporations, foreign corporations, limited liability companies, partnerships, limited partnerships, and professional corporations.

Full Name	Title	% Owned (Not required for Publicly Traded Corporations/Non-profit organizations)

This section is not required for publicly-traded corporations.

1. Are any individual members, partners, owners or principals, involved in the business entity, a Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☐ No (If yes, please note that County employee(s), or appointed/elected official(s) may not perform any work on professional service contracts, or other contracts, which are not subject to competitive bid.)

2. Do any individual members, partners, owners or principals have a spouse, registered domestic partner, child, parent, in-law or brother/sister, half-brother/half-sister, grandchild, grandparent, related to a Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District full-time employee(s), or appointed/elected official(s)?

   ☐ Yes ☐ No (If yes, please complete the Disclosure of Relationship form on Page 2. If no, please print N/A on Page 2.)

I certify under penalty of perjury, that all of the information provided herein is current, complete, and accurate. I also understand that the Board will not take action on land-use approvals, contract approvals, land sales, leases or exchanges without the completed disclosure form.

Signature | Print Name

Title | Date

DISCLOSURE OF RELATIONSHIP

List any disclosures below:
(Mark N/A, if not applicable.)

NAME OF BUSINESS OWNER/PRINCIPAL	NAME OF COUNTY* EMPLOYEE/OFFICIAL AND JOB TITLE	RELATIONSHIP TO COUNTY* EMPLOYEE/OFFICIAL	COUNTY* EMPLOYEE'S/OFFICIAL'S DEPARTMENT

* County employee means Clark County, University Medical Center, Department of Aviation, or Clark County Water Reclamation District.

"Consanguinity" is a relationship by blood. "Affinity" is a relationship by marriage.

"To the second degree of consanguinity" applies to the candidate's first and second degree of blood relatives as follows:

- Spouse – Registered Domestic Partners – Children – Parents – In-laws (first degree)
- Brothers/Sisters – Half-Brothers/Half-Sisters – Grandchildren – Grandparents – In-laws (second degree)

For County Use Only:

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in anyway with the business in performance of the contract?

Notes/Comments:

_____
Signature

_____
Print Name
Authorized Department Representative

DISCLOSURE OF RELATIONSHIP

For County Use Only:

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in anyway with the business in performance of the contract?

Notes/Comments:

_____
Signature

_____
Print Name
Authorized Department Representative

For County Use Only:

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in anyway with the business in performance of the contract?

Notes/Comments:

_____
Signature

_____
Print Name
Authorized Department Representative

For County Use Only:

If any Disclosure of Relationship is noted above, please complete the following:

☐ Yes ☐ No Is the County employee(s) noted above involved in the contracting/selection process for this particular agenda item?

☐ Yes ☐ No Is the County employee(s) noted above involved in anyway with the business in performance of the contract?

Notes/Comments:

_____
Signature

_____
Print Name
Authorized Department Representative

EXHIBIT 17

01041

AB-94 (AS AMENDED)

IN REFLECTING UPON THE DISCUSSION WHICH TOOK PLACE DURING THE FEBRUARY 13TH HEARING BEFORE THE GOVERNMENT AFFAIRS COMMITTEE I FEEL THAT A GOOD DEAL OF CONFUSION EXISTS ABOUT THE COMMITTEE MEMBERS AS TO THE PURPOSE AND EXTENT OF THE PROPOSED REVISIONS BY THE LEGISLATIVE PURCHASING STUDY COMMITTEE.

THEREFORE, I BELIEVE A MORE IN DEPTH EXPLANATION IS WARRANTED WHICH SHOULD CLARIFY OUR POSITION AND ADDRESS THE SPECIFIC CONCERNS WHICH YOU HAVE EXPRESSED.

•IN ORDER TO DETERMINE THE SCOPE AND EXTENT OF THE PROBLEMS FACING LOCAL GOVERNMENTS AND THE ADVERSE FISCAL POSITION WHICH WE HAVE BEEN PLACED BY COMPLYING WITH THE EXISTING STATUTES, IT IS NECESSARY TO ADDRESS THREE STATUTES, NRS 332, LOCAL GOVERNMENT PURCHASING ACT, NRS 338 AND 339 CONCERNING PUBLIC WORKS PROJECTS.

•NRS 332-

THE LOCAL GOVERNMENT PURCHASING ACT SETS FORTH CONTRACTUAL PROCEDURES TO BE FOLLOWED BY LOCAL GOVERNMENTS IN CONTRACTING FOR SERVICES, SUPPLIES AND EQUIPMENT IRREGARDLESS OF THE TYPE AND NATURE OF THE CONTRACT.

•SAID PROCEDURES PROVIDE FOR-

•-CONTRACT AWARD OF LESS THAN $2500.00 WITHOUT FORMAL ADVERTISING.

•-CONTRACT AWARD OF $2500.00 TO $4999.00 BY INFORMAL BIDS WHICH MUST BE SUBMITTED TO TWO OR MORE PERSONS CAPABLE OF PERFORMING THE CONTRACT IF AVAILABLE, AND REQUIRES THE MAINTENANCE OF PERMANENT RECORDS OF ALL REQUESTS FOR BIDS AND ALL BIDS RECEIVED.

- CONTRACTS IN AN ESTIMATED AGGREGATE AMOUNT OF $5000.00 OR MORE MUST BE AWARDED AS A RESULT OF A FORMAL ADVERTISED BID AND IN COMPLIANCE WITH ALL REQUIREMENTS THEREOF.

- AS PREVIOUSLY STATED THESE PROCEDURES ARE APPLICABLE TO ALL CONTRACTS IRRESPECTIVE OF SUBJECT MATTER, WITH THE EXCEPTION OF THOSE ITEMS SPECIFICALLY EXEMPTED BY STATUTE.

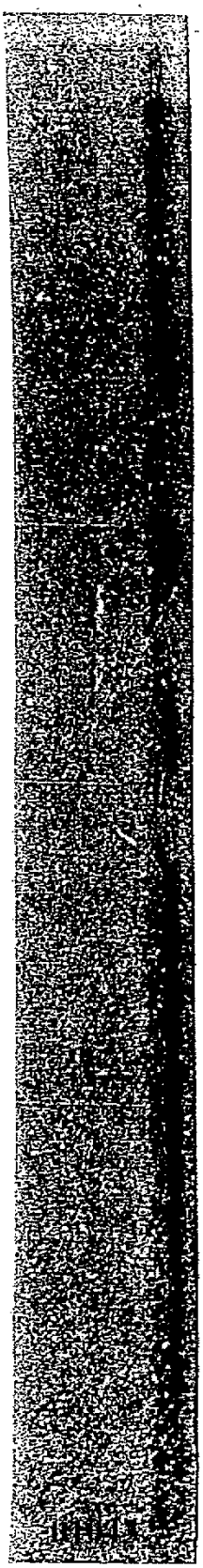
- NRS 338 GOVERNING PUBLIC WORKS PROJECTS BY DEFINITION AS WRITTEN, WITHOUT THE BENEFIT OF REVISION THE TERM "PUBLIC WORK" READS:

  - "PUBLIC WORKS" MEANS NEW CONSTRUCTION OF AND THE REPAIR AND RECONSTRUCTION WORK ON ALL PUBLIC BUILDINGS, PUBLIC HIGHWAYS, PUBLIC ROADS, PUBLIC STREETS AND ALLEYS, PUBLIC UTILITIES PAID FOR IN WHOLE OR IN PART BY PUBLIC FUNDS, PUBLICLY OWNED WATER MAINS AND SEWERS, PUBLIC PARKS AND PLAYGROUNDS, AND ALL OTHER PUBLICLY OWNED WORKS AND PROPERTY".

- AS IT STANDS, WE NOW HAVE TWO STATUTES GOVERNING THE SAME FUNCTION UNDER DIFFERENT RULES AND REGULATIONS.

- BECAUSE OF THE A/G'S OPINION THAT REPAIR AND MAINTENANCE ARE SYNONYMOUS, OUTSIDE SERVICES REQUIRED TO MAINTAIN OUR FACILITIES IN THE AREAS OF HOUSEKEEPING, GENERAL MAINTENANCE AND MINOR REPAIRS ARE NO LONGER CONTRACTED FOR UNDER THE PROVISIONS OF NRS 332 LOCAL GOVERNMENT PURCHASING ACT, BUT RATHER UNDER NRS 338 PERTAINING TO PUBLIC WORKS PROJECTS.

- ALTHOUGH THERE ARE A NUMBER OF DIFFERENCES IN REQUIREMENTS BETWEEN THE TWO STATUTES WHICH ARE TIME CONSUMING AND COSTLY TO THE LOCAL GOVERNMENT THE PRIMARY FACTOR IN CONTENTION IS THAT ALL CONTRACTS NEGOTIATED REGARDLESS OF AMOUNT SHALL BE IN ACCORDANCE WITH THE PREVAILING WAGE DETERMINATION OF THE LABOR COMMISSIONER PLUS FRINGE BENEFITS



ORS 279 (GOVERNING PUBLIC WORKS PROJECTS)

REQUIRES PAYMENT AND PERFORMANCE BONDS IN AN AMOUNT OF NOT LESS THAN 50 PERCENT OF THE CONTRACT AMOUNT.

OBJECTIONS TO THE CONSTRAINTS OF THE PUBLIC WORKS STATUTES IN THE AREA OF HOUSEKEEPING, REPAIR AND MAINTENANCE ARE:

1) COMPLIANCE ELIMINATES THE COMPETIVE ASPECTS OF CONTRACTING WHICH IS THE PRIMARY INTENT OF THE LOCAL GOVERNMENT PURCHASING ACT.

2) DEPRIVES APPROXIMATELY 75% OF THE SMALL LOCAL INDEPENDENT VENDORS OF THE OPPORTUNITY TO CONTRACT WITH STATE OR LOCAL GOVERNMENT AGENCIES.

3) ELIMINATES MINORITY CONTRACTORS TOTALLY.

4) FUNNELS ALL TAX DOLLARS EAR MARKED FOR OUTSIDE SERVICES TO A SMALL SPECIAL INTEREST GROUP WHICH CONSISTS OF THE MORE AFFLUENT VENDORS WITHIN THE STATE

5) INCREASES THE OPERATING COSTS OF STATE AND LOCAL GOVERNMENT WITHIN THE CATEGORIES SPECIFIED BY 50% TO 100% ON EACH CONTRACT AWARDED BECAUSE OF ADHERENCE TO THE POSTED LABOR WAGE SCALES.

6) TOTALLY DISREGARDS THE RIGHT TO WORK LAW OF THIS STATE AND PLACES THE CONTRACTING AUTHORITY IN A POSITION OF DISCRIMINATING AGAINST A NON-UNION LABOR FORCE WHICH HERETOFORE WE HAVE BEEN UNABLE TO DO.

7) IT IS ESTIMATED THAT IF ALL AGENCIES WERE COMPLYING FULLY TO THE REQUIREMENTS STATED THAT A MINIMUM OF $1,000,000 OO MORE PER QUARTER WOULD BE SPENT TO ACQUIRE THE SAME SERVICES PREVIOUSLY CONTRACTED FOR UNDER ORS 11.2 FOR LESS

8) GENERALLY SPEAKING, SERVICES PROVIDED ARE PERFORMED BY NON-SKILLED LABORERS WHO ARE PAID MUCH LESS THAN THE SKILLED TRADESMAN ADDRESSED IN THE POSTED LABOR RATES.

IT IS MY UNDERSTANDING THAT EFFECTIVE JULY 1, 1981, THE POSTED NON-SKILLED LABORER CATEGORY WILL BE $11.71/HOUR.

9) WE HAVE AND ARE CONTINUING TO LOSE WELL QUALIFIED VENDORS WHO SIMPLY CANNOT AND WILL NOT PAY THEIR EMPLOYEES AT THE RATES STIPULATED.

10) IN SOME INSTANCES WE HAVE BEEN TOTALLY UNABLE TO CONTRACT FOR SERVICES PREVIOUSLY AVAILABLE TO US

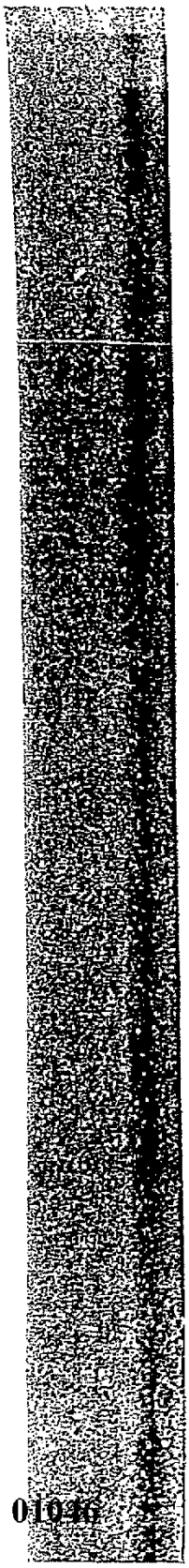
•WASHOE COUNTY TOTALLY SUPPORTS THE PROVISIONS OF NRS 338 AND 339 WITH REGARD TO BONA FIDE PUBLIC WORKS PROJECTS. HOWEVER, WE DO NOT FEEL THAT THE CATEGORIES IN QUESTION MEET THAT CRITERIA AND SHOULD THEREFORE BE REMOVED VIA THE REVISIONS SUBMITTED.

•BY DOING SO, YOU WILL NOT BE GRANTING THE CONTRACTING AUTHORITY ANY ADDITIONAL LATITUDE. YOU WOULD BE REMOVING THE CONFLICT BETWEEN STATUTES, RESTORING THE COMPETITIVENESS WHICH SHOULD EXIST, AND REDUCE OPERATING COSTS FOR BOTH STATE AND LOCAL GOVERNMENTS.

•THE END RESULT WOULD BE THAT THE STATUTES AS REVISED WOULD PROVIDE ADEQUATE CONSTRAINTS AND SAFEGUARDS AGAINST VIOLATIONS FOR ALL CONTRACTS IRRESPECTIVE OF TYPE AND NATURE.

•I STRONGLY URGE YOUR THOUGHTFUL CONSIDERATION OF THE FACTS PRESENTED FOR THE IMPACT IS FAR GREATER THAN EVEN THOSE OF US WORKING WITH IT ON A DAILY BASIS EVER IMAGINED.

•AT A TIME WHEN THERE IS SO MUCH CRITICISM OF GOVERNMENT SPENDING I DO NOT BELIEVE THAT WE CAN CONTINUE ON THIS COURSE WITHOUT A "HUMAN OUTCRY" FROM THE BUSINESS COMMUNITY AND TAXPAYERS.



Robert List
Governor

The State of Nevada
Executive Chamber
November 3, 1980

Capitol Complex
Carson City, Nevada 89710

Mr. Thomas J. Milligan
City of Sparks
431 Prater Way
Sparks, Nevada 89431

Dear Mr. Milligan:

During the past three months, the Office of the Labor Commissioner has been asked by local government agencies in Washoe County to review the public works project requirements contained in Chapters 338 and 339, Nevada Revised Statutes.

As you are aware, NRS 338.020 requires that every contract to which a public body is a party is subject to the reporting and prevailing wage provisions of the state public works laws.

The local government agencies had requested that the Labor Commissioner establish monetary thresholds below which the prevailing wage and reporting requirements would not apply.

Upon review of the matter with legal counsel, the Labor Commissioner denied the request and ruled that all public works projects entered into by local government agencies must comply with the prevailing wage and reporting requirements. This would include minor repair and maintenance contracts, operating services, and purchasing contracts on which labor is employed.

The Labor Commissioner ruled that he did not have the legal authority to establish arbitrary monetary thresholds, or to raise the $2,000 bonding requirement specified in Chapter 339, Nevada Revised Statutes.

The ruling was reviewed by Washoe County District Attorney Calvin Dunlap and Reno City Attorney Louis Test who requested a ruling from the Attorney General on the matter.

771

01047

The Attorney General's Office upheld the Labor Commissioner's ruling. In an opinion issued September 2, 1980, Deputy Attorney General Donald Klasic stated:

> "[I]n short, there appears nothing in either statute (NRS 338.010(3) and NRS 339.015(2)) which would justify a limitation on the term 'repair' to include only structural changes to a building. The term 'repair' as utilized in each statute is simply too broad for such limitation. . . ."

I am enclosing a copy of the Attorney General's opinion for your information.

In light of the legal opinion, the Labor Commissioner simply cannot institute an "administrative remedy" that would be contrary to the wording of the statutes.

I agree with you that current procedures adversely affect the efficiency of local public works' activities. Nevertheless, it is clear that we must adhere to the statutes as they are written. You can be assured that I will do everything necessary to see that this problem is resolved, as soon as possible, through corrective legislative action. Until that time, we must continue to work together to minimize the effect of this procedure on the activities of our individual operations.

Thank you for your cooperation and your interest in this matter.

Sincerely,

ROBERT LIST
Governor

STATE OF NEVADA
EXECUTIVE CHAMBER

772

01048

MEMBERS PRESENT:	Chairman Dini Mr. DuBois Mr. May Mr. Mello Mr. Nicholas Mr. Polish Mr. Prengaman Mr. Redelsperger
MEMBERS EXCUSED:	Vice Chairman Schofield Mr. Craddock Mr. Jeffrey
GUESTS:	Please refer to the guest list attached to the minutes of this meeting.

Chairman Dini called the meeting to order at 8:00 A.M.

Mr. Dini indicated that he had a request to introduce BDR 34-1032 by the Clark County School District.

Mr. May moved for committee introduction of BRD 34-1032, which was seconded by Mr. DuBois. The motion carried unanimously.

Mr. Dini announced that the first bill that the committee would consider this morning would be AB 275.

Mr. John Crossley, Legislative Auditor testified first. Mr. Crossley stated that this particular bill encompasses many of the audit recommendations contained in our audit reports. Up to two sessions ago we used to have separate bills on each one of these recommendations which was 14 to 15 bills and we decided it would be less expensive to try and incorporate many of the provisions or recommendations into one bill and this is what we have done the last two sessions. We do have other bills of course out of the audit reports but this one takes in many of the recommendations. This particular bill involves the creation, repealing, categorizing and retitling of funds in the State's accounting system. Mr. Crossley handed out a copy of his testimony for the committee, which is attached to the minutes of this meeting as EXHIBIT A.

Mr. Crossley discussed Exhibit A with the committee.

Assemblyman Robinson testified next on AB 151. Dr. Robinson indicated that his motivation for putting in this bill came about as I was subjected to more and more criticism from constituents for having voted for this measure in the first place and of all of the bills over the four sessions that I have been in and voted for, I think this is the only one that I regretted that I had voted for, not that it did not accomplish

Mr. Robert Gagnier, Executive Director of the State of Nevada Employees Association testified next. Mr. Gagnier indicated that he would like to speak on behalf of AB 278. Mr. Gagnier indicated that he agreed with everything that has been stated here this morning.

Mr. Jim Wittenberg, State Personnel Division, testified next. He indicated that he thought the problem that is caused at the state level is the result of salaries in the structure. He indicated that this law affects some 58 people. He indicated that they had serious recruitment and retention problems.

Mr. Robert Forbus, Clark County School Board testified next. He indicated that he was in favor of this bill, and that he did not have a vested interest.

Mr. Charles Sylvestre, Clark County School District testified next. He indicated that he concurred with the previous speakers. He stated that their district is a very large district. It is the 23rd largest in the United States and employs 7,600 people.

Mr. Dan Fitzpatrick testified next. He stated there was a problem in Clark County. It is a matter of retention and that they had a contradiction in the law. He further stated that there was a situation now where 13 individuals cannot make a comparable salary.

This concluded the testimony on AB 278. The committee took a short recess.

Mr. Dini indicated that the next bill before the committee is AB 275. He stated that this bill needs an amendment.

Mr. Nicholas moved for amend and do pass on AB 275, which was seconded by Mr. Polish. The motion carried unanimously. Mr. Jeffrey and Mr. Craddock were not present at the time of this vote.

Mr. Dini asked Mr. Nicholas about the subcommittee amendments on AB 94.

Mr. Nicholas stated that as a result of the several meetings that we had and the testimony that we took in our final meeting, in conjunction with all of the people who were in attendance at the meeting with Assemblyman Jeffrey and I, worked out this amendment which conforms with the wishes of all present, including Assemblyman Jeffrey and myself, so this is sent back to the committee as the recommendation of the subcommittee on AB 94, for your approval and process.

Mr. Dini stated that the amendment lowers the limit to $2,000. A copy of the amendment to AB 94 is attached to the minutes of this meeting as EXHIBIT E.

Mr. Dini stated that he would like to commend the committee on AB 94 for their work on this bill.

Mr. Nicholas moved for an amend and do pass on AB 94, which was seconded by Mr. Redelsperger. The motion carried unanimously. Mr. Jeffrey and Craddock were not present at the time of the vote.

Mr. Dini indicated the next bill up for discussion would be AB 151. Mr. May moved for a do pass on AB 151, which was seconded by Mr. Mello. The motion carried unanimously. Mr. Jeffrey and Mr. Craddock were not present at the time of the vote.

Mr. Dini indicated that the next bill to be discussed would be AB 276. He indicated that the committee had the amendments from Dan Fitzpatrick. Mr. Dini stated that with the amendment presented by Dan Fitzpatrick and the conflict notice that that would be a good bill. Mr. Polish moved for an Amend and Do Pass on AB 276, which was seconded by Mr. DuBois. The motion carried unanimously. Mr. Jeffrey and Mr. Craddock were not present at the time of the vote.

The next bill discussed by the committee was AB 282. Mr. Dini stated that he felt personally that AB 282 was a bill that we don't really need on the books.

Mr. Mello moved for an Indefinite Postponement of AB 282, which was seconded by Mr. Redelsperger.

Mr. Dini asked if there was any discussion.

Mr. Mello asked if he could say why he made that motion. Frankly I felt when Dave Parraguarre came back the second time, he gave a good case to keep it. I don't understand the problems. They have been treating the deputies as unclassified and perhaps that is why they haven't any problems and if they treat them like classified, maybe they will have some, but until we actually see if they are going to have problems if they treat them as classified. There are no problems in Clark County, obviously.

Mr. Dini asked for a vote of the committee of who was in favor of indefinitely postponing AB 282. The motion carried unanimously. Mr. Jeffrey and Mr. Craddock were not present at the time of the vote.

Mr. Dini stated that he had the amendments for the bonding bill, AB 189, where the State Treasurer has a municipal bond bank and I would like to have a motion to amend it and re-refer back to committee.

Mr. Mello moved for the amendment and re-referral back to committee, which was seconded by Mr. Schofield. The motion on AB 189 carried unanimously.

84.5

1981 REGULAR SESSION (61st)

ASSEMBLY ACTION	SENATE ACTION	Assembly AMENDMENT BLANK
Adopted ☐	Adopted ☐	AMENDMENTS to Assembly
Lost ☐	Lost ☐	Bill No. 94 ~~Joint Resolution No.~~
Date:	Date:	BDR 28-233
Initial:	Initial:	Proposed by Committee on Government Affair
Concurred in ☐	Concurred in ☐	
Not concurred in ☐	Not concurred in ☐	
Date:	Date:	
Initial:	Initial:	

Amendment No. 210

Conflicts with Amendment No. 40

Amend section 1, page 1, line 15, by deleting "exceeds $5,000." and inserting "as a whole exceeds $2,000."

Amend the bill as a whole by adding a new section designated as section 2, following section 1, to read as follows:

"Sec. 2. Chapter 338 of NRS is hereby amended by adding thereto a new section which shall read as follows:

The requirements of this chapter do not apply to a contract awarded in compliance with chapter 332 or 333 of NRS which is:

1. Directly related to the normal operation of the public body or the normal maintenance of its property.

2. Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public.".

To: B&E
LCR File
Journal ✓
Engrossment
Bill

Drafted by FWD:smc Date 3-10-81

01052

Senate Bill No. 256.

Assemblyman Vergiels moved that the bill be referred to the Committee on Judiciary.

Motion carried.

Senate Bill No. 298.

Assemblyman Vergiels moved that the bill be referred to the Committee on Transportation.

Motion carried.

Senate Bill No. 333.

Assemblyman Vergiels moved that the bill be referred to the Committee on Education.

Motion carried.

SECOND READING AND AMENDMENT

Assembly Bill No. 88.

Bill read second time, ordered engrossed and to third reading.

Assembly Bill No. 94.

Bill read second time.

The following amendment was proposed by the Committee on Government Affairs:

Amendment No. 210.

Amend section 1, page 1, line 15, by deleting "*exceeds $5,000.*" and inserting "*as a whole exceeds $2,000.*".

Amend the bill as a whole by adding a new section designated as section 2, following section 1, to read as follows:

"Sec. 2. Chapter 338 of NRS is hereby amended by adding thereto a new section which shall read as follows:

The requirements of this chapter do not apply to a contract awarded in compliance with chapter 332 or 333 of NRS which is:

1. Directly related to the normal operation of the public body or the normal maintenance of its property.

2. Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public.".

Assemblyman Nicholas moved the adoption of the amendment.

Remarks by Assemblyman Nicholas.

Amendment adopted.

Bill ordered reprinted, engrossed and to third reading.

Assembly Bill No. 151.

Bill read second time, ordered engrossed and to third reading.

Assembly Bill No. 189.

Bill read second time.

The following amendment was proposed by the Committee on Government Affairs:

Amendment No. 260.

Amend sec. 2, page 1, by deleting lines 6 and 7 and inserting: "preservation of the property and natural resources of the State of Nevada, and to obtain the benefits thereof; and that the state should".

Amend sec. 2, page 1, line 9, after "loans" by inserting "to municipalities".

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(REPRINTED WITH ADOPTED AMENDMENTS)

FIRST REPRINT **A. B. 94**

ASSEMBLY BILL NO. 94—COMMITTEE ON GOVERNMENT AFFAIRS

FEBRUARY 2, 1981

Referred to Committee on Government Affairs

SUMMARY—Limits definition of "public works." (BDR 28-233)

FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: No.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is material to be omitted.

AN ACT relating to public works; limiting their definition for certain purposes; and providing other matters properly relating thereto.

The People of the State of Nevada, represented in Senate and Assembly, do enact as follows:

SECTION 1. NRS 338.010 is hereby amended to read as follows:

338.010 As used in this chapter:

1. "Day labor" means all cases where public bodies, their officers, agents or employees, hire, supervise and pay the wages thereof directly to a workman or workmen employed by them on public works by the day and not under a contract in writing.

2. "Public body" means the state, county, city, town, village, school district or any public agency of this state or its political subdivisions sponsoring or financing a public work.

3. "Public work" means *any project for the* new construction [of and the repair and] *, repair or* reconstruction [work on all] *of* public buildings, public highways, public roads, public streets and alleys, public utilities paid for in whole or in part by public funds, publicly owned water mains and sewers, public parks and playgrounds, and all other publicly owned works and property [.] *whose cost as a whole exceeds $2,000.*

4. "Wages" means:

(a) The basic hourly rate of pay; and

(b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs, or other bona fide fringe benefits which are a benefit to the workman.

The obligation of a contractor or subcontractor to make such wage payments in accordance with the prevailing wage determination of the labor commissioner may be discharged by the making of payments in

01054

cash, or by making contributions to an established third person pursuant to a fund, plan or program in the name of the workman.

5. "Workman" means a skilled mechanic, skilled workman, semiskilled mechanic, semiskilled workman or unskilled workman.

SEC. 2. Chapter 338 of NRS is hereby amended by adding thereto a new section which shall read as follows:

The requirements of this chapter do not apply to a contract awarded in compliance with chapter 332 or 333 of NRS which is:

1. Directly related to the normal operation of the public body or the normal maintenance of its property.

2. Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public.

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Assembly Bill No. 378—An Act relating to economic development; creating an office of minority businesses within the department of economic development; and providing other matters properly relating thereto.

Assemblyman Vergiels moved that the bill be referred to the Committee on Government Affairs.

Motion carried.

SECOND READING AND AMENDMENT

Assembly Bill No. 209.

Bill read second time, ordered engrossed and to third reading.

GENERAL FILE AND THIRD READING

Assembly Bill No. 32.

Bill read third time.

Remarks by Assemblymen Banner and Cafferata.

Conflict of interest declared by Assemblyman May.

Roll call on Assembly Bill No. 32:

YEAS—29.

NAYS—Bergevin, Beyer, Brady, Cafferata, Ham, Nicholas, Rackley, Redelsperger, Rusk—9.

Absent—Rhoads.

Not voting—May.

Assembly Bill No. 32 having received a constitutional majority, Mr. Speaker declared it passed.

Bill ordered transmitted to the Senate.

Assembly Bill No. 94.

Bill read third time.

Remarks by Assemblyman Nicholas.

Roll call on Assembly Bill No. 94:

YEAS—39.

NAYS—None.

Absent—Rhoads.

Assembly Bill No. 94 having received a constitutional majority, Mr. Speaker declared it passed, as amended.

Bill ordered transmitted to the Senate.

Assembly Bill No. 270.

Bill read third time.

Remarks by Assemblyman Cafferata.

Roll call on Assembly Bill No. 270:

YEAS—39.

NAYS—None.

Absent—Rhoads.

Assembly Bill No. 270 having received a constitutional majority, Mr. Speaker declared it passed.

Bill ordered transmitted to the Senate.

Assembly Bill No. 271.

Bill read third time.

Remarks by Assemblyman Robinson.

(REPRINTED WITH ADOPTED AMENDMENTS)
SECOND REPRINT

A. B. 94

ASSEMBLY BILL NO. 94—COMMITTEE ON GOVERNMENT AFFAIRS

FEBRUARY 2, 1981

Referred to Committee on Government Affairs

SUMMARY—Limits definition of "public works." (BDR 28-233)
FISCAL NOTE: Effect on Local Government: No.
Effect on the State or on Industrial Insurance: No.

EXPLANATION—Matter in *italics* is new; matter in brackets [ ] is material to be omitted.

AN ACT relating to public works; limiting their definition for certain purposes; and providing other matters properly relating thereto.

The People of the State of Nevada, represented in Senate and Assembly, do enact as follows:

SECTION 1. NRS 338.010 is hereby amended to read as follows:

338.010 As used in this chapter:

1. "Day labor" means all cases where public bodies, their officers, agents or employees, hire, supervise and pay the wages thereof directly to a workman or workmen employed by them on public works by the day and not under a contract in writing.

2. "Public body" means the state, county, city, town, village, school district or any public agency of this state or its political subdivisions sponsoring or financing a public work.

3. "Public work" means *any project for the* new construction [of and the repair and] *, repair or* reconstruction [work on all] *of* public buildings, public highways, public roads, public streets and alleys, public utilities paid for in whole or in part by public funds, publicly owned water mains and sewers, public parks and playgrounds, and all other publicly owned works and property [.] *whose cost as a whole exceeds $4,000.*

4. "Wages" means:

(a) The basic hourly rate of pay; and

(b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs, or other bona fide fringe benefits which are a benefit to the workman.

The obligation of a contractor or subcontractor to make such wage payments in accordance with the prevailing wage determination of the labor commissioner may be discharged by the making of payments in

01057

cash, or by making contributions to an established third person pursuant to a fund, plan or program in the name of the workman.

5. "Workman" means a skilled mechanic, skilled workman, semiskilled mechanic, semiskilled workman or unskilled workman.

SEC. 2. Chapter 338 of NRS is hereby amended by adding thereto a new section which shall read as follows:

The requirements of this chapter do not apply to a contract awarded in compliance with chapter 332 or 333 of NRS which is:

1. Directly related to the normal operation of the public body or the normal maintenance of its property.

2. Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public.

5/13/81

Remarks by Senators Getto and Jacobsen.
Roll call on Senate Bill No. 637:
YEAS—17.
NAYS—Keith Ashworth, Gibson, Lamb—3.

Senate Bill No. 637 having received a constitutional majority, Mr. President declared it passed.

Assembly Bill No. 94.
Bill read third time.
Roll call on Assembly Bill No. 94:
YEAS—20.
NAYS—None.

Assembly Bill No. 94 having received a constitutional majority, Mr. President declared it passed, as amended.
Bill ordered transmitted to the Assembly.

Assembly Bill No. 115.
Bill read third time.
Roll call on Assembly Bill No. 115:
YEAS—20.
NAYS—None.

Assembly Bill No. 115 having received a constitutional majority, Mr. President declared it passed.
Bill ordered transmitted to the Assembly.

Assembly Bill No. 176.
Bill read third time.
Roll call on Assembly Bill No. 176:
YEAS—18.
NAYS—Lamb, Neal—2.

Assembly Bill No. 176 having received a constitutional majority, Mr. President declared it passed, as amended.
Bill ordered transmitted to the Assembly.

Assembly Bill No. 191.
Bill read third time.
Roll call on Assembly Bill No. 191:
YEAS—20.
NAYS—None.

Assembly Bill No. 191 having received a constitutional majority, Mr. President declared it passed.
Bill ordered transmitted to the Assembly.

Assembly Bill No. 414.
Bill read third time.
Roll call on Assembly Bill No. 414:
YEAS—20.
NAYS—None.

Assembly Bill No. 414 having received a constitutional majority, Mr. President declared it passed, as amended.
Bill ordered transmitted to the Assembly.

Assembly Bill No. 521.
Bill read third time.

01059

Assembly Bill No. 94—Committee on Government Affairs

CHAPTER 278

AN ACT relating to public works; limiting their definition for certain purposes; and providing other matters properly relating thereto.

[Approved May 20, 1981]

The People of the State of Nevada, represented in Senate and Assembly, do enact as follows:

SECTION 1. NRS 338.010 is hereby amended to read as follows:

338.010 As used in this chapter:

1. "Day labor" means all cases where public bodies, their officers, agents or employees, hire, supervise and pay the wages thereof directly to a workman or workmen employed by them on public works by the day and not under a contract in writing.

2. "Public body" means the state, county, city, town, village, school district or any public agency of this state or its political subdivisions sponsoring or financing a public work.

3. "Public work" means *any project for the* new construction [of and the repair and] *, repair or* reconstruction [work on all] *of* public buildings, public highways, public roads, public streets and alleys, public utilities paid for in whole or in part by public funds, publicly owned water mains and sewers, public parks and playgrounds, and all other publicly owned works and property [.] *whose cost as a whole exceeds $4,000.*

4. "Wages" means:

(a) The basic hourly rate of pay; and

(b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs, or other bona fide fringe benefits which are a benefit to the workman.

The obligation of a contractor or subcontractor to make such wage payments in accordance with the prevailing wage determination of the labor commissioner may be discharged by the making of payments in cash, or by making contributions to an established third person pursuant to a fund, plan or program in the name of the workman.

5. "Workman" means a skilled mechanic, skilled workman, semiskilled mechanic, semiskilled workman or unskilled workman.

SEC. 2. Chapter 338 of NRS is hereby amended by adding thereto a new section which shall read as follows:

The requirements of this chapter do not apply to a contract awarded in compliance with chapter 332 or 333 of NRS which is:

1. Directly related to the normal operation of the public body or the normal maintenance of its property.

2. Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public.

01060

EXHIBIT 18

Employment Research Corporation
305 E. Eisenhower Pkwy, Suite 316, Ann Arbor, MI 48108 ▪ Phone: 734-477-9040 ▪ Fax: 734-477-9060

REPORT ON THE CLASSIFICATIONS AND WAGES OF WORKERS MAINTAINING THE AUTOMATED PEOPLE MOVER SYSTEM (INNOVIA APM) AT THE LAS VEGAS MCCARRAN INTERNATIONAL AIRPORT (CLARK COUNTY)

BY

ALAN L. MOSS, PH. D.
SENIOR CONSULTANT
EMPLOYMENT RESEARCH CORPORATION
OCTOBER 1, 2012

info@employmentresearch.com ▪ www.employmentresearch.com

I. INTRODUCTION

A. Background

I am a Senior Consultant for Employment Research Corporation, a firm that specializes in labor market, economic, and forensic research. This report is intended as evidence for consideration of the prevailing wage complaint filed by the International Union of Elevator Constructors against Bombardier Transportation (Holdings) USA, Inc. The scope of the research covers: 1) the proper occupational classification for workers maintaining the automated people mover (APM) system (INNOVIA APM) at the Las Vegas McCarran International Airport; 2) wage rates that correspond to that classification; and 3) analysis of an expert report on classification matters provided by Kevin R. Murphy, Ph. D. on behalf of the elevator constructor union.

I obtained my Ph. D. in Economics from the Catholic University of America, with specialties in the Economics of Human Resources. From 1967 until 2002, I worked for the U.S. Department of Labor. I held the positions of Chief Economist of the Wage and Hour Division, Director of Wage Determinations (where for 12 years I administered the prevailing wage provisions of the Davis-Bacon and Service Contract Act), and Chief of Labor Market Information.

As Director of Wage Determinations, I initiated preparation and publication of the first manuals of wage determinations operations, development and publication of the Service Contract Act Directory of Occupations, automation of Davis-Bacon and Service Contract Act wage determination preparation, and on-line retrieval of Davis-Bacon wage determinations. In 1989, I was American Political Science Association Congressional Fellow to U.S. Senator Frank R. Lautenberg of New Jersey.

Over a 10-year period, I taught graduate and undergraduate courses in Economics at the Catholic University of America, the University of Virginia's Northern Virginia Center, and Central Michigan University. Over the years I originated and led many research initiatives, wrote numerous articles, and in 2000 authored *Employment Opportunity: Outlook, Reason, and Reality*, a career book published by Prentice-Hall. My curriculum vita is appended to this report as Attachment 1.

This report responds to five specific questions:

1. Is the Elevator Constructor classification appropriate for workers maintaining the McCarran International Airport INNOVIA Automated People Mover System, as contended by the International Union of Elevator Constructors?

2. Given relevant occupational and industry information, and established classification principles, what standard occupational classifications best fit the job requirements, labor market characteristics, and work performed by Automated Transit System (ATS) Technicians at McCarran?

3. Given available wage data, what wage estimates are reasonable for ATS Technicians at McCarren?

4. Given the occupations and definitions included in the Clark County prevailing wage listing, which is most comparable to the ATS Technician and its duties?

5. Should the conclusions of Kevin R. Murphy, Ph. D.'s expert report be accepted?

B. Research Methods and Sources

In order to answer these questions, I (a) reviewed the fundamental aspects of the ATS Technician job requirements; (b) conducted an analysis to determine the standard occupational classifications that most closely match the ATS Technician job requirements, observing principles of the Standard Occupational Classification Manual; (c) performed a like analysis of the Elevator Constructor classification, claimed by the International Union of Elevator Constructors to be the occupation that should carry out ATS Technician tasks; (d) analyzed statistical program data in order to identify wage and benefit estimates for the occupations that closely match the ATS Technician job requirements; and e) scrutinized the occupational definitions and wage rates included on the 2012 prevailing wage list for Clark County. Also, I reviewed the report of Dr. Murphy.

In order to develop this report, I reviewed the following resources:

- The Standard Occupational Classification Manual 2010, U.S. Department of Labor, Bureau of Labor Statistics.
- O*NET OnLine, Occupational Information Network, U.S. Department of Labor, Employment and Training Administration, 2012.
- The North American Industry Classification System (NAICS), U.S. Department of Commerce, Bureau of the Census, 2012.
- The Occupational Outlook Handbook, U.S. Department of Labor, Bureau of Labor Statistics, 2012.
- ATS Maintenance Contract # CBE-552 between Nevada's Clark County Department of Aviation and Bombardier Transportation Holdings USA, Inc., June 3, 2008.
- Written descriptions of the INNOVIA APM Automated People Mover System, Las Vegas, and interviews with Bombardier Transportation staff.
- Bureau of Labor Statistics (BLS) Statistical Programs:
    * Occupational Employment Statistics (OES) Program, May 2011.
    * Employer Costs for Employee Compensation (ECEC), June 2012.

* National Compensation Survey (NCS), June 2012.

* The National Industry – Occupation Employment Matrix, 2010.

- National Guidelines for Apprenticeship Standards, Elevator Constructor Mechanic, National Elevator Industry Education Program (NEIEP) for International Union of Elevator Constructors (IUEC) and Participating Employers.

- Guidebook for Planning and Implementing Automated People Mover Systems at Airports, Federal Aviation Administration, Transportation Research Board, Washington, D.C., 2010.

- 2012 Prevailing Wage Rates for Clark County

II. THE WORK OF ATS APM TECHNICIANS

A. Extent of Work on Contract #CBE-552 for Maintenance of Automated Transit System Equipment

Technician work performed under the Bombardier contract with the Clark County Department of Aviation calls for the inspection, cleaning, adjustment, preventive maintenance, lubrication, repair, testing, replacement of worn parts, and replacement and repair of spare equipment for McCarran's Automated Transit System. That system provides a timely and convenient means of intra-airport transportation. The system is comprised of guideways, electronic controls, and vehicles, each having their own sets of tires, electric motors, a chassis-like underbody, and braking system. Specific operation and maintenance tasks include:

- Monitor and maintain operations. For example, if required, thoroughly check stalled vehicles and attempt to restart using onboard reset devices. If a vehicle cannot be restored to automatic operations, manually drive the vehicle to the nearest station, using onboard controls. Passengers may deboard at the station.

- Maintain detailed records and inventory data to ascertain compliance with timing, safety, and availability requirements of the ATS system and subsystems.

- Perform routine subsystem scheduled and non-scheduled maintenance of electrical, mechanical, electro-mechanical, and pneumatic components.

- Troubleshoot ATS system and subsystem components to identify problems or failures to implement repairs.

- Service and maintain ATS vehicles including wheels, frame, structural members and body, seats, windows, panels, doors, suspension equipment, propulsion and braking equipment, control equipment, accessories, door mechanisms, graphic, and air conditioning equipment.

- Vehicle maintenance includes such tasks as daily cleaning, diagnostic equipment-assisted checks, and subsystem checks (routine maintenance); changing or adding lubricants and performing equipment adjustments (minor maintenance); replacing major repairable units and limited rebuilding of select major components (major maintenance); and non-scheduled maintenance in response to unsatisfactory conditions or operational failures.

- Guideway equipment maintenance includes such tasks as removal of debris and litter from the Guideway, periodic washing with high pressure water, and diagnostic equipment-assisted checks (routine maintenance); touch-up painting and alignment of guidance devices (scheduled maintenance); and non-scheduled maintenance in response to unsatisfactory conditions or operational failures.

- Station equipment maintenance services all electrical, electronic and mechanical equipment, windows, and door panels, passenger controls and displays. Specific tasks include diagnostic equipment-assisted checks (routine maintenance); station door adjustments and repairs, graphics repairs, and occupancy detector adjustments and repairs (scheduled maintenance); and non-scheduled station equipment maintenance required by unsatisfactory conditions or operational failure.

- Power distribution equipment maintenance services the Uninterruptible Power Supply (UPS), power rails, and surge protection equipment, and includes alignment and adjustment of Guideway power rails.

- Automatic train control (ATC) maintenance services all automatic vehicle control (AVC) equipment, including the Automated Transit System Control Center equipment. Specific tasks include cleaning of ATC equipment cabinets, diagnostic equipment-assisted checks, and periodic verification of the proper and safe operation of all ATC equipment (routine maintenance); test operation of redundant equipment, component operational checks, preventive maintenance on Control Center equipment, and repair or replacement of failed equipment or components (scheduled maintenance); and non-scheduled automatic vehicle control servicing required by unsatisfactory conditions or operational failure of AVC equipment.

- With owner approval and in accordance with recommended heavy maintenance and overhaul practices, additional tasks may include, for example, propulsion motor overhaul, axle differential and planetary gear overhaul, and replacement of carpet (for vehicles); and Guideway painting and running surface repair (for Guideway).

B. Suitability of Elevator Constructor Classification

For the most part, union arguments advanced in this matter have focused on whether or not Contract #CBE-552 is covered by the prevailing wage provisions of the State of Nevada's Regulations. Having reviewed numerous pages of complaints, appeals, and related documentation, I noted just two instances in which it was directly stated that Automated Transit Technicians should be paid at the Elevator Constructor rates or that Elevator Constructors in the context of elevators (including automated people movers) normally perform some of the work (heavy maintenance and overhaul work) on the subject contract.

However, I found no objective information that explains why Transit Technician employees should be treated as though they were Elevator Constructors. Regardless of the complexities and application of the governing Regulations and how they relate to specific prevailing rates, it is irrational to base the pay of workers in one occupation and industry on actual rates experienced by a very different occupation in another industry.

In terms of industry setting, Elevator Installers and Repairers are predominantly Construction Industry workers. According to the North American Industry Classification System, the Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in the sector. (See Attachment 2.)

On the other hand, the Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline. (See Attachment 3.)

In this case, it is being contended that installation, maintenance, and repair work of the Transportation sector (Other Urban Transit Systems) should be compensated as though it were construction and extraction work within the Construction sector (Other Building Equipment Contractors). By consulting the Bureau of Labor Statistics Industry-Occupation Matrix, we can see the dominance of the construction industry in the employment of Elevator Installers and Repairers. Over 90 percent of those working as Elevator Installers and Repairers are employed in the Other Building Equipment Contractors sector of the Construction Industry. At the same time, No Elevator Installer and Repairer employment is noted under any Transportation Industry sector. (See Attachment 4.)

The different nature of these industries in general, and these occupations, in particular, is demonstrated when we compare the setting and tasks of the APM Transit Technicians noted above with those of Elevator Installers and Repairers. While the latter, clearly, is a Construction and

Extraction industry occupation, the work of the Transit Technician involves no construction and extraction tasks.

According to the Standard Occupational Classification System and the nation's O*NET system, Elevator Installers and Repairers assemble, install, repair, or maintain electric or hydraulic freight or passenger elevators, escalators, or dumbwaiters. The Bureau of Labor Statistics, Occupational Outlook Handbook and the nation's O*NET system list typical tasks for this occupation, including:

- Read blueprints to determine the equipment needed for installation or repair.
- Install or repair elevator doors, steel frames and cables, motors, and control systems.
- Locate malfunctions in breaks, motors, switches, and control systems.
- Connect electrical wiring to control panels and electric motors.
- Use test equipment, such as ammeters and voltmeters, to diagnose problems.
- Adjust counterweights, door mechanisms, and safety controls.
- Test newly installed equipment to ensure that it meets specifications.
- Disassemble defective units, and repair or replace parts such as locks, gears, cables, and electric wiring.
- Comply with safety regulations and building codes.
- Keep service records of all maintenance and repair tasks.

The work context of Elevator Installers and Repairers, according to the nation's O*NET occupational information, the primary source of such data, includes:

- Exposure to High Places.
- Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets.
- Exposure to Hazardous Conditions.
- Exposure to Hazardous Equipment.
- Regularly Lift and Carry Heavy Equipment and Parts.
- Rates of Injury and Illness Slightly Higher than National Average.

Therefore, in terms of working environment, Elevator Installers and Repairers may spend time in the cramped, uncomfortable, and potentially dangerous quarters of an elevator shaft. On the other hand, APM Transit Technicians are assigned to strategically placed and relatively comfortable stations or shop locations where they are available to troubleshoot and resolve problems that may occur.

At the same time, APM Transit Technicians may be considered to operate the INNOVIA APM through 24/7 surveillance and correction of problems through in-person action, including manual functioning of disabled vehicles. Continuous systems inspection, preventive or corrective maintenance, and repair or replacement of defective parts provides comprehensive care of this transportation system.

On the other hand, while Elevator Installers and Repairers do not continually operate elevators, escalators, dumbwaiters, or moving sidewalks, they do provide for the initial installation of this building equipment as part of the construction process. Such work would be beyond the usual scope of APM Technician duties.

In terms of education and training requirements, according to the Occupational Outlook Handbook, elevator installers and repairers learn their trade through a 4-year apprenticeship. For each year of the program, apprentices must have at least 144 hours of related technical instruction and 2,000 hours of paid on-the-job training.

During training, apprentices learn blueprint reading, electrical and electronic theory, mathematics, applied physics, and safety. Installation topics include procedures for hoisting heavy equipment; building a safe working platform and scaffolding; and assembly of the elevator car and counterweight sling. (See Attachment 5.) Several states require Elevator Installers and Repairers to be licensed, with candidates having to pass an exam. The National Association of Elevator Contractors offers two certification programs.

Entry level Transit Technician positions, on the other hand, require a high school degree or its equivalent and two-years of study or experience in mechanical, electro-mechanical, electronic, and pneumatic systems.

Whether an elevator installer specializes in constructing or maintaining and repairing elevators, their prevailing compensation is based upon substantial training that includes hours of instruction in construction skills. Each is paid a journeyman rate that reflects construction industry and occupation requirements that are irrelevant to the APM Transit Technician occupation.

According to national OES survey data reported in the O*NET system, the median annual wage forelevatorinstallersandrepairersin2011was$75,060oranhourlyrateof$36.09.Themedianrate for a Standard Occupational Classification system position comparable to the APM Transit Technician occupation (Electrical and Electronics Installers and Repairers, Transportation) is about two-thirds (66.4 percent)oftheElevatorInstallerandRepairemedianrate,$49,810annuallyand$2 3.95 hourly.

If APM Transit Technician work at McCarran is the work of Elevator Constructors, as contended by the union, then, movement within the occupation should work both ways. Thus, a journeyman APM Transit Technician should, with little additional training and experience, be able to enter a construction site and proceed to install elevators, or enter a skyscraper and repair and adjust a bank of elevators. However, given union apprenticeship requirements and the significant construction skills covered by elevator constructor preparation, such labor mobility would be unlikely.

Given the conflicting industry setting and work environment, lack of elevator constructor operations responsibilities, initial system installation responsibilities absent in the APM Transit Technician work, significant construction skills and experience requirements typical of Elevator Constructor jobs, differing education and training requirements, and wide discrepancies in prevailing

wage rates, I must conclude that the Elevator Constructor classification is not appropriate for workers operating and maintaining the McCarran International Airport INNOVIA Automated People Mover System. (See Matrix of Key Differences, below.)

Matrix of Key Differences

Occupational Characteristic	Automated Transit System Technician	Elevator Constructor (Installers and Repairers)
Transportation Industry setting	X	
Provide 24/7 surveillance/maintenance	X	
Drive vehicles to nearest station	X	
Maintain Guideways	X	
Service individual vehicle wheels, seats, windows, suspension, propulsion, and braking systems	X	
Assigned to station or shop locations	X	
Construction Industry setting		X
Initial installation of steel frames and cables, motors, and control systems		X
Adjust counterweights		X
Exposure to high and cramped places (elevator shafts)		X
Exposure to hazardous conditions and equipment		X
Regularly lift and carry heavy equipment and parts		X

III. STANDARD OCCUPATIONS THAT DO FIT APM TECHNICIAN CHARACTERISTICS

Since there are only 40+ Automated People Mover airport systems in operation, and their employment of APM Transit Technicians is somewhat limited compared to other occupations, the Standard Occupational Classification System does not include a unique description for that work. However, there are standard occupations that may be used as appropriate proxies. None is a perfect fit, but each involves tasks, work context, and preparation requirements mostly comparable to those of the APM Transit Technician.

A. Electrical and Electronic Installers and Repairers, Transportation (See Attachment 6.)

According to the Standard Occupational Classification System, Electrical and Electronic Installers and Repairers, Transportation, install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.

The nation's O*NET system states that workers in this occupation install, adjust, or maintain mobile electronics, communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment. The BLS Industry-Occupation Matrix reports that the Transportation and Warehousing industrial sector accounts for the largest portion of this occupation's employment (37.1 percent). (See Attachment 7.)

Typical tasks of this occupation include:

- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Reassemble and test equipment after repairs.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Maintain equipment service records.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electrical drills and routers.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.

The work context includes:

- Wear common protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, hard hats, or life jackets.

In terms of education and training requirements, according to the Occupational Outlook Handbook, employers prefer to hire applicants who have taken courses in electronics at a community college or technical school, but having a high school diploma may be enough for some jobs. Certifications are offered by the Electronics Technicians Association International and the International Society of Certified Electronics Technicians.

The 2011 OES median wage for this occupation, as reported through the O*NET system, was $23.95perhouror$49,810annually.

B. Electrical and Electronics Repairers, Commercial and Industrial Equipment (See Attachment 8.)

According to the Standard Occupational Classification System, Electrical and Electronics Repairers, Commercial and Industrial Equipment repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas. The Bureau of Labor Statistics, Occupational Outlook Handbook, defines the occupation as follows: installs, repairs, or replaces a variety of electrical equipment in telecommunications, transportation, utilities, and other industries. The O*NET system lists these tasks:

- Test faulty equipment to diagnose malfunctions, using test equipment or software, and applying knowledge of the functional operation of electronic units and systems.
- Inspect components of industrial equipment for accurate assembly and installation or for defects, such as lose connections or frayed wires.
- Install repaired equipment in various settings, such as industrial or military establishments.
- Examine work orders and converse with equipment operators to detect equipment problems and to ascertain whether mechanical or human errors contributed to the problems.
- Perform scheduled preventive maintenance tasks, such as checking, cleaning, or repairing equipment, to detect and prevent problems.
- Study blueprints, schematics, manuals, or other specifications to determine installation procedures.
- Set up and test industrial equipment to ensure that it functions properly.
- Repair or adjust equipment, machines, or defective components, replacing worn parts, such as gaskets or seals in watertight electrical equipment.
- Maintain equipment logs that record performance problems, repairs, calibrations, or tests.
- Calibrate testing instruments and installed or repaired equipment to prescribed specifications.

The work context of this occupation includes:

- Wear common protective or safety equipment such as safety shoes, glasses, hearing protection, hard hats, or life jackets.
- Indoors, environmentally controlled.
- Sounds, noise levels are distracting or uncomfortable.
- Exposed to contaminants.

In terms of education and training, according to the Occupational Outlook Handbook, most electrical and electronics installers and repairers obtain specialized training at a technical college, although a high school diploma may be sufficient for some jobs. Various organizations offer certifications.

The 2011medianwageforthisoccupationis$25.16perhouror$52,320annually.

C. Electro-Mechanical Technicians (See Attachment 9.)

According to the Standard Occupational Classification System, Electro-Mechanical Technicians operate, test, and maintain unmanned, automated, servo-mechanical, or electro-mechanical equipment. They may operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. They may also assist engineers in testing and designing robotics equipment.

The nation's O*NET system describes this occupation's key tasks as:

- Test performance of electromechanical assemblies, using test instruments such as oscilloscopes, electronic voltmeters, or bridges.
- Read blueprints, schematics, diagrams, or technical orders to determine methods and sequences of assembly.
- Install electrical or electronic parts and hardware in housings or assemblies, using soldering equipment and hand tools.
- Align, fit, or assemble component parts, using hand or power tools, fixtures, templates, or microscopes.
- Inspect parts for surface defects.
- Analyze and record test results, and prepare written testing documentation.
- Verify part dimensions or clearances to ensure conformance to specifications, using precision measuring instruments.
- Operate metalworking machines to fabricate housings, jigs, fittings, or fixtures.
- Repair, rework, or calibrate hydraulic or pneumatic assemblies or systems to meet operational specifications or tolerances.
- Train others to install, use, or maintain robots.

The work context for the occupation includes:

- Indoors, environmentally controlled.
- Wear common protective or safety equipment such as safety shoes, glasses, gloves, hearing protection, hard hats, or life jackets.
- Exposed to contaminants and hazardous equipment.

In terms of education and training requirements, according to the Occupational Outlook Handbook, candidates for this occupation usually complete a 2-year associate's degree program at vocational-technical schools or community colleges. In addition, there are two recognized apprenticeship opportunities associated with this occupation.

The2011medianwageforthisoccupation,asreportedthroughtheO*NETsystem,was$24.63 perhour,or$51,220annually .

IV. WAGE ESTIMATES FOR LOCAL APM TRANSIT TECHNICIANS

To estimate reasonable wage rates for APM Transit Technicians working in Clark County, I utilized the Bureau of Labor Statistics Occupational Employment Statistics (OES) program. Estimates were calculated with data collected from employers in all industry sectors statewide and in individual metropolitan statistical areas, such as the Las Vegas-Paradise Statistical Area, composed of Clark County.

Due to the relatively small number of workers employed in Clark County as Electrical and Electronic Installers and Repairers, Transportation Equipment, and Electro-Mechanical Technicians, the estimates provided for these occupations are statewide. However, comparisons of wage rates for the Metropolitan Statistical Area versus the state for all occupations, Electrical and Electronics Repairers, Commercial and Industrial Equipment, and Elevator Installers and Repairers reflects only slight differences, as portrayed in Table 1, below.

Table 1
Wage Comparisons between Nevada Statewide And
Las Vegas-Paradise Area Employment and Wage Data

Geographic and Occupational Detail	Employment	Median Hourly Rate	Mean Hourly Rate	Mean Annual Wage
All Occupations				
Statewide	1,112,780	$15.70	$20.13	$41,860
Las Vegas-Paradise Area	806,040	$15.41	$19.85	$41,290
Electrical & Electronic Installers & Repairers, Commercial & Industrial				
Statewide	260	$27.90	$29.00	$60,330
Las Vegas-Paradise Area	150	$27.76	$29.14	$60,610
Elevator Installers and Repairers				
Statewide	250	$43.78	$42.14	$87,640
Las Vegas-Paradise Area	210	$45.08	$42.78	$88,980

Source: Bureau of Labor Statistics (BLS), May 2011 Occupational Employment Statistics Program survey.

Table 2 presents the OES employment and wage data for the three selected occupations whose characteristics are similar to those of the APS Transit Technician. Also included are estimates of benefits and total compensation, based upon Employer Cost for Employee Compensation program data from the BLS. Benefits are computed based upon the private industry average of 29.6 percent of total compensation. (See Attachment 10.)

Table 2
Wage, Benefit and Total Compensation Data for
Occupations Comparable to ATS Transit Technicians
The McCarren International Airport

Compensation Measure	Electrical and Electronic Installers and Repairers, Transportation Equipment	Electrical and Electronic Repairers, Commercial and Industrial Equipment	Electro-Mechanical Technicians
Mean Total Compensation	$28.44	$41.39	$37.40
Mean Hourly Rate	$20.02	$29.14	$26.33
Mean Hourly Benefits	$ 8.42	$12.25	$11.07

Mean hourly rates are from the May 2011 Bureau of Labor Statistics Occupational Employment Statistics survey for the Las Vegas – Paradise Metropolitan Statistical Area. Mean benefits and mean total compensation are computed based upon information from the BLS Employer Cost for Employee Compensation program.

V. SELECTION OF OCCUPATION FROM CLARK COUNTY PREVAILING WAGE LIST

Based upon the above information, when limited to selecting the most comparable occupation to the ATS Transit Technician from the Clark County list of occupations and wages, the Electronic Communication Installer/Technician (Electrician-Communication Tech.) is the obvious choice, with a 2012wagerateof$39.80perhour.Theocc upation's principle tasks include:

- Pulling cable, installing and trimming devices, terminating loops, circuits, or other data gathering points.
- Termination of main control panels, racks, or other head end equipment, as well as testing of all circuits from the filed devices to the main control panels and/or equipment.
- Utilizing test equipment for the purpose of troubleshooting and verifying the integrity of the circuits in question.
- Using hand tools to assemble and install data communication lines and equipment, computer systems, antennas and towers.
- Disassembling equipment to adjust, repair, or replace parts using hand tools.
- Starting up, programming and documenting systems.
- Measuring, cutting, splicing, connecting, soldering and installing wire and cable associated with communications systems.

These duties bear a close relationship to those of the three standard occupations selected and are most comparable to ATS Technician responsibilities than any of the other occupations listed. (See Attachment 11.)

VI. DESCRIPTION AND ASSESSMENT OF EXPERT REPORT

A. Report Description

Dr. Murphy reached four conclusions concerning his comparison of the Airport ATS Technician position at McCarran International Airport and the occupation of Elevator Installer/Repairer: (See Attachment 12.)

- The job of Airport ATS Technicians at McCarran International Airport requires virtually all of the knowledge, skills, abilities, and experience required of Elevator Installer/Repairers.
- The work activities performed by Airport ATS Technicians overlap substantially with those performed by Elevator Installer/Repairer.
- The job of Airport ATS Technician is comparable to, and perhaps more demanding than the job of Elevator Installer/Repairers.
- The job of Airport ATS Technicians at McCarran International Airport is appropriately classified as an Elevator Constructor/Installer/Repairer.

His conclusions are based upon:

- An on site visit, including the examination of tools, equipment, and facilities, and the provision of explanations of the work performed.
- Interviews and job analysis questionnaire ratings from four ATS Technicians.
- Review of publications describing the tasks, maintenance/repair procedures, and tools and equipment used by ATS Technicians, and the technologies used by ATS Technicians and Elevator Installers/Repairers.
- O*NET information for Elevator Installers/Repairers.
- A comparison of the ATS Technician job with the description of the job performed by Elevator Installers/Repairers.

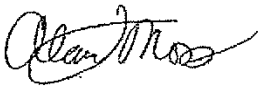
B. Assessment

Overall, Dr. Murphy's three-page report lacked the detail which would allow a reviewer to accept his findings. While he draws firm conclusions regarding the similarity of ATS Technician and Elevator Constructor positions, no information is provided as to exactly how these jobs match-up. Rather than providing examples that back-up his contentions, the reviewer is simply expected to take his word for each conclusion reached.

With regard to the interviews conducted and job analysis questionnaires completed, how do we know that the opinions of the sample of four ATS Technicians interviewed are representative of the ATS Technician population? Also, given the open disputes over ATS Technician classifications and wages, one has to wonder whether bias helped to shape the answers provided. In any case, Dr. Murphy failed to furnish any of these data, again, expecting the reviewer to blindly accept his characterization of the information.

The contents of this report represent my opinion to a reasonable degree of professional certainty. This report is based on analysis conducted by me or by members of the staff of Employment Research Corporation under my direction. I reserve the right to alter my opinion should additional information become available.

Sincerely,



Alan L. Moss, Ph. D.
Senior Consultant, Employment Research Corporation

Attachment 1

Curriculum Vitae

Alan L. Moss, Ph. D.

325 Blossom Circle
Egg Harbor Township, NJ
Office: 609-569-1462
Fax: 609-569-1463
Cell: 609-705-6204
moss3@verizon.net

Education

Doctor of Philosophy, the Economics of Human Resources, Catholic University of America, 1981 (Minor in Political Science)
Master of Arts, Economics, Temple University, 1967 (Minor in Political Science)
Bachelor of Science, Commerce (Business Administration), Rider University, 1965 (Minor in Economics)

Record of Accomplishment

As Senior Consultant, Employment Research Corporation (2002-2012), directed team in determining the economic loss of plaintiffs in a case involving a large financial institution's failure to pay wages in accordance with Federal and State labor laws. Prepared and delivered expert testimony to shape required wage rates in accordance with a State's prevailing wage law. Led team in the study of uncompensated preliminary and postliminary activities with the view toward verifying appropriate damage estimates. Conducted research and developed proposals and reports in support of various corporate objectives.

As Chief Economist of the U.S. Department of Labor, Wage and Hour Division (July 1997- May 2002) initiated program of National Office and Regional compliance surveys to effectively measure labor standards compliance. Directed the preparation of published economic reports on the U.S. minimum wage as applied to the Mainland, the Commonwealth of the Northern Marianas, and the territory of American Samoa.

As Director of Wage Determinations for the Wage and Hour Division (1984-96), designed and directed new procedures for weekly publication of prevailing wage determinations, resulting in improved customer service and large agency savings. Initiated effective programs of wage determination automation, publication of manuals of operation, staff training and interested party seminars.

Through an American Political Science Association Fellowship (1989), served as Legislative Assistant on labor and education issues to U.S. Senator Frank R. Lautenberg. Conceived and drafted bills -- introduced in the U.S. Senate -- to

combat labor shortages and enhance the education of inner city youth.

As Chief of Labor Market Information (LMI) for the Employment and Training Administration (ETA) (1980-83), conceived and directed development of the program to Improve Career Decision Making, which trained over 25,000 counselors in the use of career and labor market information. Also, originated and developed the LMI Training Institute – a university-based program for training LMI staff and customers.

As Labor Economist for the ETA (1975-79), initiated development of the first system to aggregate Job Bank openings nationally. Then, launched Occupations in Demand at Job Service Offices, a national newspaper that provided 400,000 students and jobseekers monthly information on occupations in demand by geographic area.

With ETA's U.S. Employment Service (1967-1974), led the Industry Manpower Survey Program, publishing reports on some of the nation's leading industries. Developed the first standard Job Bank Book format. During that period, I directed the development of a prototype Manpower Planning System under a 2-year assignment through the Intergovernmental Personnel Act. Published Manpower Planning: The State Of The Art.

Teaching Experience

Adjunct Instructor, Central Michigan University, 1997. Developed curriculum and instructed students in a graduate seminar in the Economics of Labor.

Adjunct Instructor, University of Virginia, Falls Church, 1991-1996. Developed and delivered curriculums in undergraduate Career Development and Macroeconomics.

Adjunct Instructor, The Catholic University of America, 1990. Developed curriculum and instructed Ph.D. guidance candidates in Advanced Career Planning.

Examples of Honors & Special Recognition

Received numerous Department of Labor Outstanding Performance/Secretary's Exceptional Achievement Awards.

Presented numerous papers at conferences such as the 1993 Bureau of Labor Statistics International Occupational Classification Conference.

Won Congressional fellowship, Office of Senator Frank R Lautenberg, 1989.

Represented U.S. at the Symposium on Occupational and Educational Information, International Labor Organization, Turin, Italy, 1979.

Served on a 2-year Intergovernmental Personnel Act assignment developing an Employment Planning System for local government use, 1972-74.

Publications

Employment Opportunity: Outlook, Reason, and Reality (Prentice Hall 2000): A college textbook, teaching the social, psychological, and economic concepts vital to career success. It includes both narrative text and CD-ROM for end-of-chapter applications and job search activities.

Economic Report: The Minimum Wage in American Samoa, U.S. Department of Labor, April 2001.

Minimum Wage and Overtime Hours under the Fair Labor Standards Act, U.S. Department of Labor, January 2001.

"Evaluation of the Hay Report: Minimum Wage Analysis for the Commonwealth of the Northern Mariana Islands," U.S. Department of Labor, March 1998.

Minimum Wage and Overtime Hours under the Fair Labor Standards Act, U.S. Department of Labor, June 1998.

"Agency Addresses Customer Wishes Using Quality Management Outreach," Workforce *Magazine*, Summer 1994.

"Consumer Criteria for the Next Standard Occupational Classification," Proceedings of the International Occupational Classification Conference, U.S. Department of Labor, September 1993.

Service Contract Act Wage Determinations Manual of Operations, Editor, U.S. Department of Labor, 1987.

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Davis-Bacon Construction Wage Determinations Manual of Operations, Editor, April 1986.

"General Wage Determinations Issued Under the Davis-Bacon and Related Acts," Editor, U.S. Department of Labor, January1986.

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Improve Career Decision-Making, LMI Monograph No. 10, U.S. Department of Labor, February 1983.

"A Test of the Application of Markov Chain Models to the Analysis of Internal

Labor Markets and Manpower Forecasting in Large Organizations," Ph. D. Dissertation, the Catholic University of America, January 1981.

"Occupations In Demand At Job Service Offices," Editor, U.S. Department of Labor, Monthly Editions and News Releases, 1977 - 1981.

"A National Perspective on the Labor Market Information Program," *Labor Market Information: Key to Improved CETA Planning*, U.S. Department of Labor, November 1979.

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"GI's Draw on Job Bank," *Manpower Magazine*, U.S. Department of Labor, October 1972.

Industry Manpower Survey No. 116, Nursing Homes and Related Health Care Facilities, U.S. Department of Labor, 1969.

"Will Manpower Shortages Curtail Your Growth?" *Cooking for Profit*, Vol. 38, No. 223, July 1969.

"Manpower Shortage in Food Service," *The Cornell Hotel and Restaurant Administration Quarterly*, May 1969.

Industry Manpower Survey No. 115, Eating and Drinking Places Industry, U.S. Department of Labor, March 1969.

"Manpower Developments and Outlook in the Computing Machines Industry," *Area Trends in Employment and Unemployment*, U.S. Department of Labor, April 1968.

Industry Manpower Survey No. 113, Blast Furnaces-Steelworks-Rolling Mills, U.S. Department of Labor, September 1967.

"Crisis: Land Use in Brazil's Northeast," Unpublished Masters Thesis, Temple University, January 1, 1967.

Professional Affiliations and Listings

National Association of Forensic Economists

American Political Science Association

The Authors Guild

International Thriller Writers

North American Industry Classification System

2012 NAICS Definition

T = Canadian, Mexican, and United States industries are comparable.

Sector 23 -- Construction[T]

The Sector as a Whole

The Construction sector comprises establishments primarily engaged in the construction of buildings or engineering projects (e.g., highways and utility systems). Establishments primarily engaged in the preparation of sites for new construction and establishments primarily engaged in subdividing land for sale as building sites also are included in this sector.

Construction work done may include new work, additions, alterations, or maintenance and repairs. Activities of these establishments generally are managed at a fixed place of business, but they usually perform construction activities at multiple project sites. Production responsibilities for establishments in this sector are usually specified in (1) contracts with the owners of construction projects (prime contracts) or (2) contracts with other construction establishments (subcontracts).

Establishments primarily engaged in contracts that include responsibility for all aspects of individual construction projects are commonly known as general contractors, but also may be known as design-builders, construction managers, turnkey contractors, or (in cases where two or more establishments jointly secure a general contract) joint-venture contractors. Construction managers that provide oversight and scheduling only (i.e., agency) as well as construction managers that are responsible for the entire project (i.e., at risk) are included as general contractor type establishments. Establishments of the "general contractor type" frequently arrange construction of separate parts of their projects through subcontracts with other construction establishments.

Establishments primarily engaged in activities to produce a specific component (e.g., masonry, painting, and electrical work) of a construction project are commonly known as specialty trade contractors. Activities of specialty trade contractors are usually subcontracted from other construction establishments, but especially in remodeling and repair construction, the work may be done directly for the owner of the property.

Establishments primarily engaged in activities to construct buildings to be sold on sites that they own are known as for-sale builders, but also may be known as speculative builders or merchant

builders. For-sale builders produce buildings in a manner similar to general contractors, but their production processes also include site acquisition and securing of financial backing. For-sale builders are most often associated with the construction of residential buildings. Like general contractors, they may subcontract all or part of the actual construction work on their buildings.

There are substantial differences in the types of equipment, work force skills, and other inputs required by establishments in this sector. To highlight these differences and variations in the underlying production functions, this sector is divided into three subsectors.

Subsector 236, Construction of Buildings, comprises establishments of the general contractor type and for-sale builders involved in the construction of buildings. Subsector 237, Heavy and Civil Engineering Construction, comprises establishments involved in the construction of engineering projects. Subsector 238, Specialty Trade Contractors, comprises establishments engaged in specialty trade activities generally needed in the construction of all types of buildings.

Force account construction is construction work performed by an enterprise primarily engaged in some business other than construction for its own account, using employees of the enterprise. This activity is not included in the construction sector unless the construction work performed is the primary activity of a separate establishment of the enterprise. The installation and the ongoing repair and maintenance of telecommunications and utility networks is excluded from construction when the establishments performing the work are not independent contractors. Although a growing proportion of this work is subcontracted to independent contractors in the Construction Sector, the operating units of telecommunications and utility companies performing this work are included with the telecommunications or utility activities.

Source: U.S. Census Bureau | North American Industry Classification System (NAICS) | (888) 756-2427 | naics@census.gov | Last Revised: November 7, 2011

North American Industry Classification System

2012 NAICS Definition

T = Canadian, Mexican, and United States industries are comparable.

Sector 48-49 -- Transportation and Warehousing[T]

The Sector as a Whole

The Transportation and Warehousing sector includes industries providing transportation of passengers and cargo, warehousing and storage for goods, scenic and sightseeing transportation, and support activities related to modes of transportation. Establishments in these industries use transportation equipment or transportation related facilities as a productive asset. The type of equipment depends on the mode of transportation. The modes of transportation are air, rail, water, road, and pipeline.

The Transportation and Warehousing sector distinguishes three basic types of activities: subsectors for each mode of transportation, a subsector for warehousing and storage, and a subsector for establishments providing support activities for transportation. In addition, there are subsectors for establishments that provide passenger transportation for scenic and sightseeing purposes, postal services, and courier services.

A separate subsector for support activities is established in the sector because, first, support activities for transportation are inherently multimodal, such as freight transportation arrangement, or have multimodal aspects. Secondly, there are production process similarities among the support activity industries.

One of the support activities identified in the support activity subsector is the routine repair and maintenance of transportation equipment (e.g., aircraft at an airport, railroad rolling stock at a railroad terminal, or ships at a harbor or port facility). Such establishments do not perform complete overhauling or rebuilding of transportation equipment (i.e., periodic restoration of transportation equipment to original design specifications) or transportation equipment conversion (i.e., major modification to systems). An establishment that primarily performs factory (or shipyard) overhauls, rebuilding, or conversions of aircraft, railroad rolling stock, or a ship is classified in Subsector 336, Transportation Equipment Manufacturing according to the type of equipment.

Many of the establishments in this sector often operate on networks, with physical facilities, labor forces, and equipment spread over an extensive geographic area.

01084

Warehousing establishments in this sector are distinguished from merchant wholesaling in that the warehouse establishments do not sell the goods.

Excluded from this sector are establishments primarily engaged in providing travel agent services that support transportation and other establishments, such as hotels, businesses, and government agencies. These establishments are classified in Sector 56, Administrative and Support and Waste Management and Remediation Services. Also, establishments primarily engaged in providing rental and leasing of transportation equipment without operator are classified in Subsector 532, Rental and Leasing Services.

Source: U.S. Census Bureau | North American Industry Classification System (NAICS) | (888) 756-2427 | naics@census.gov | Last Revised: November 7, 2011

Attachment 4

Employment by industry, occupation, and percent distribution, 2010 and projected 2020.

47-4021 Elevator Installers and Repairers

(Employment in thousands)

Industries with fewer than 50 jobs, confidential data, or poor quality data are not displayed

Industry		2010			2020				
Code	Title	Employment	Percent of ind	Percent of occ	Employment	Percent of ind	Percent of occ	Percent change	Employment change
TE1000	Total employment	19.9	0.0	100.0	22.2	0.0	100.0	11.3	2.3
TE1200	Total wage and salary employment	19.9	0.0	100.0	22.2	0.0	100.0	11.3	2.3
230000	Construction	18.3	0.3	91.7	20.4	0.3	91.8	11.5	2.1
238000	Specialty trade contractors	18.2	0.5	91.6	20.3	0.4	91.7	11.4	2.1
238200	Building equipment contractors	18.2	1.1	91.5	20.3	0.9	91.6	11.4	2.1
238290	Other building equipment contractors	18.1	15.6	91.0	20.2	15.7	91.0	11.3	2.0
31-330	Manufacturing	0.4	0.0	2.2	0.4	0.0	2.0	-2.5	0.0
333000	Machinery manufacturing	0.4	0.0	2.1	0.4	0.0	1.9	-2.4	0.0
333900	Other general purpose machinery manufacturing	0.4	0.2	2.1	0.4	0.2	1.9	-2.4	0.0
420000	Wholesale trade	0.4	0.0	2.0	0.5	0.0	2.2	24.0	0.1
423000	Merchant wholesalers, durable goods	0.1	0.0	0.5	0.1	0.0	0.5	2.3	0.0
423800	Machinery, equipment, and supplies merchant wholesalers	0.1	0.0	0.5	0.1	0.0	0.4	1.3	0.0
425000	Wholesale electronic markets and agents and brokers	0.2	0.0	1.2	0.3	0.0	1.4	37.5	0.1
610000	Educational services; State, local, and private	0.2	0.0	1.2	0.3	0.0	1.2	16.7	0.0
611000	Educational services; State, local, and private	0.2	0.0	1.2	0.3	0.0	1.2	16.7	0.0
6112-3	Junior colleges, colleges, universities, and professional schools; State, local, and private	0.2	0.0	1.1	0.3	0.0	1.2	15.8	0.0
611300	Colleges, universities, and professional schools; State, local, and private	0.2	0.0	1.1	0.3	0.0	1.2	16.8	0.0
611305	Colleges, universities, and professional schools; private	0.1	0.0	0.3	0.1	0.0	0.4	28.3	0.0
611302	Colleges, universities, and professional schools; State	0.2	0.0	0.8	0.2	0.0	0.8	12.6	0.0
910000	Federal government	0.1	0.0	0.4	0.1	0.0	0.3	-13.8	0.0
999100	Federal government, excluding postal service	0.1	0.0	0.4	0.1	0.0	0.3	-12.8	0.0

Attachment 5

ADDENDUM A

WORK PROCESS SCHEDULE

TRADE SCHEDULE FOR: ELEVATOR CONSTRUCTOR
O*NET/SOC: 47-4021.00

WORK PROCESSES	APPROXIMATE HOURS
A. CONSTRUCTION/MODERNIZATION	2300 hrs

1. SAFETY
   - Identify job hazards
   - What proper safety equipment to wear and use
   - Common sense safety around elevators and escalators
   - Fundamentals of first aid & MSDS information
   - Avoiding electric shock, GFCI's
   - Codes that apply to the elevator industry

2. PRINT READING
   - Read prints
   - Survey the hoistway for new installation and modernization
   - Convert to meter equivalents

3. HANDLING MATERIALS & TOOLS; RIGGING & HOISTING
   - Safety Procedures
   - Properly handle and store elevator/escalator equipment
   - Tie and identify knots, bends and hitches
   - Safety procedures for hoisting heavy equipment
   - Building a safe working platform & scaffolding
   - Use all safety devices

4. PIT STRUCTURES
   - Safety Procedures
   - Introduction to the pit components and their purpose
   - Install pit equipment: buffers, compensating sheaves, compensating ropes and chains
   - Testing of pit equipment for proper operation

5. GUIDE RAILS
   - Safety Procedures
   - Prepare rails and rail runs
   - Build templates, drop lines and plumb hoistways of single, multiple or corner post installations
   - Install guide rails
   - Use a rail gauge and align rails

6. MACHINE ROOM, ESCALATOR & OVERHEAD INSTALLATIONS
   - Safety Procedures
   - Layout and properly align & set equipment
   - Properly align sheaves, tracks and gears
   - Offset roping
   - Calibrate and test
   - Proper inspection and maintenance procedures for the equipment

7. CAR & COUNTERWEIGHT ASSEMBLY & ROPING
   - Safety Procedures
   - Assemble car and counterweight sling
   - Why elevators use counterweights
   - Proper handling & storage of wire ropes
   - Plan a rope run and learn other methods of installing and reroping

8. WIRING INSTALLATION
   - Safety Procedures
   - Terminology for various tools and electrical equipment
   - Plan and install raceway and conduit
   - Bend conduit
   - Plan wiring and pulling wires safely and efficiently
   - Accurately prepare and install traveling cables
   - Bonding and grounding equipment
   - Prepare the elevator/escalator for running operation

9. DOOR INSTALLATION
   - Safety Procedures
   - Proper terminology for doors and relating equipment
   - Install car and hoistway entrances and door equipment accurately
   - Install & adjust elevator doors, gates for passenger, freight & dumbwaiter

10. HYDRAULICS
   - Safety Procedures
   - Drill a hole for a hydraulic jack
   - Properly install and plumb the casing & jack with specific tools
   - Layout a pipe run and connections to power unit and jack
   - Hydraulic theory and valve operation
   - Adjust the valves for proper operation
   - Troubleshoot and isolate system problems

B. SERVICE/REPAIR/MODERNIZATION/CONSTRUCTION 3500 hrs

1. BASIC WIRING/ELECTRICITY
- Procedures for working safely with electricity
- Principle on which all electrical concepts are based
- What is electricity and where does it come from?

2. SOLID STATE ELECTRONICS/RELAY LOGIC
- Safety Procedures
- Terminology and safety equipment used on electronic devices
- Binary & hexidecimal systems are related to digital circuitry
- Capacitors and capacitance are used on elevator equipment
- Inductance and inductors are used in circuits
- How a semi-conductor works
- Diode, zener diodes, photodiodes and light emitting diodes
- Understanding transistors and how they operate
- How SCR's are operated and used in elevator circuits
- Various digital gates and their function
- The functions of integrated power supplies
- Different configurations and uses of the Op Amp
- Relay logic

3. CIRCUIT TRACING/RELAY LOGIC
- Safety Procedures
- Read a wiring diagram symbol and apply it to the equipment on the job
- Sequence of operation of individual circuits such as starting, stopping car and hall call cancellation and direction selection
- Troubleshoot particular circuits that are malfunctioning
- Locate and repair electrical problems such as ground, opens, defective contacts and coils
- Troubleshoot electrical problems with confidence

C. GENERAL REPAIR/MODERNIZATION 1000 hrs

1. REROPING, RECABLING
- Safety Procedures
- Inspecting for defective rope, selector tape & cable
- Staging and routing ropes, tapes & cables
- Shackling and socketing

2. DOOR OPERATOR & RELATING EQUIPMENT
- Safety Procedures
- Passenger & freight door, gate repairs and replacements
- Door Operators, repair, replace and adjustments
- Door protective devices and troubleshooting

3. TRAVELING CABLE
- Safety Procedures
- Repair and replacement of traveler in existing hoistways

4. MOTORS, GENERATORS, BEARINGS, SHEAVES, DRIVERS
   - Safety Procedures
   - Cleaning and lubrication
   - Testing and replacing motors, generators, bearings, sheaves and drivers
   - Turn and undercut a commutator
   - Test shunt and series field coils
   - Learn how to check bearings and replace

5. ESCALATORS, MOVING WALKS & SIMILAR EQUIPMENT
   - Safety Procedures
   - Repair/replace equipment
   - Clean and lubricate
   - Maintenance on equipment

TOTAL HOURS: 6800 hrs

 Attachment 6

O*NET OnLine

Updated 2010

Summary Report for:

49-2093.00 - Electrical and Electronics Installers and Repairers, Transportation Equipment

Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.

Sample of reported job titles: Electronic Technician, Boat Rigger, Marine Electrician, Critical Systems Technician, Mechanical Electrical Plumbing Supervisor (MEP Supervisor), Electronic Bench Technician, Electronics Mechanic, Locomotive Electrician, Radio Technician, Troubleshooter

View report: Summary | Details | Custom

Tasks | Knowledge | Skills | Abilities | Work Activities | Work Context | Job Zone | Education | Interests | Work Styles | Work Values | Related Occupations | Wages & Employment | Additional Information

Tasks

- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Reassemble and test equipment after repairs.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Maintain equipment service records.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.

back to top

Knowledge

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Engineering and Technology — Knowledge of the practical application of engineering science and technology.

This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Building and Construction — Knowledge of materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

back to top

Skills

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Repairing — Repairing machines or systems using the needed tools.

Social Perceptiveness — Being aware of others' reactions and understanding why they react as they do.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Reading Comprehension — Understanding written sentences and paragraphs in work related documents.

Speaking — Talking to others to convey information effectively.

Time Management — Managing one's own time and the time of others.

back to top

Abilities

Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

Near Vision — The ability to see details at close range (within a few feet of the observer).

Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

Finger Dexterity — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken

words and sentences.

Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.

Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense.

Multilimb Coordination — The ability to coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.

back to top

Work Activities

Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.

Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.

Monitor Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Repairing and Maintaining Electronic Equipment — Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.

Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

Performing General Physical Activities — Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.

Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

back to top

Work Context

Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets — How much does this job require wearing common protective or safety equipment such as safety shoes, glasses, gloves, hard hats or life jackets?

Contact With Others — How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it?

Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls — How much does

this job require using your hands to handle, control, or feel objects, tools or controls?

Work With Work Group or Team — How important is it to work with others in a group or team in this job?

Face-to-Face Discussions — How often do you have to have face-to-face discussions with individuals or teams in this job?

Telephone — How often do you have telephone conversations in this job?

Coordinate or Lead Others — How important is it to coordinate or lead others in accomplishing work activities in this job?

Duration of Typical Work Week — Number of hours typically worked in one week.

In an Enclosed Vehicle or Equipment — How often does this job require working in a closed vehicle or equipment (e.g., car)?

Importance of Being Exact or Accurate — How important is being very exact or highly accurate in performing this job?

back to top

Job Zone

Title	Job Zone Three: Medium Preparation Needed
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
Related Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
Job Zone Examples	These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include food service managers, electricians, agricultural technicians, legal secretaries, interviewers, and insurance sales agents.
SVP Range	(6.0 to < 7.0)

There is 1 recognized apprenticeable specialty associated with this occupation:
Electrician, Locomotive

To learn about specific apprenticeship opportunities, please consult the U.S. Department of Labor State Apprenticeship Information website.

For general information about apprenticeships, training, and partnerships with business, visit the U.S. Department of Labor Office of Apprenticeship website.

back to top

Education

Percentage of Respondents	Education Level Required
58 [redacted]	Some college, no degree

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27 [redacted] High school diploma or equivalent

10 [redacted] Associate's degree

back to top

Interests

Interest code: **RC**

Realistic — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

Conventional — Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

back to top

Work Styles

Attention to Detail — Job requires being careful about detail and thorough in completing work tasks.

Dependability — Job requires being reliable, responsible, and dependable, and fulfilling obligations.

Integrity — Job requires being honest and ethical.

Cooperation — Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.

Independence — Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

Self Control — Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.

Achievement/Effort — Job requires establishing and maintaining personally challenging achievement goals and exerting effort toward mastering tasks.

Adaptability/Flexibility — Job requires being open to change (positive or negative) and to considerable variety in the workplace.

Persistence — Job requires persistence in the face of obstacles.

Initiative — Job requires a willingness to take on responsibilities and challenges.

back to top

Work Values

Support — Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical.

Working Conditions — Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions.

Relationships — Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service.

back to top

Related Occupations

17-3024.00	Electro-Mechanical Technicians	Green
49-2091.00	Avionics Technicians	
49-2092.00	Electric Motor, Power Tool, and Related Repairers	
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	

back to top

Wages & Employment Trends

National

Median wages (2011)	$23.95 hourly, $49,810 annual
Employment (2010)	13,000 employees
Projected growth (2010-2020)	Little or no change (-2% to 2%)
Projected job openings (2010-2020)	3,400
Top industries (2010)	Transportation and Warehousing Government

State & National

Select a State Go

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Source: Bureau of Labor Statistics 2011 wage data and 2010-2020 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2010-2020). "Projected job openings" represent openings due to growth and replacement.

back to top

Sources of Additional Information

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- Electrical and Electronics Installers and Repairers. Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2012-13 Edition.*

back to top

Attachment 7

Employment by industry, occupation, and percent distribution, 2010 and projected 2020.
49-2093 Electrical and Electronics Installers and Repairers, Transportation Equipment
(Employment in thousands)
Industries with fewer than 50 jobs, confidential data, or poor quality data are not displayed

Industry		2010			2020				
Code	Title	Employment	Percent of ind	Percent of occ	Employment	Percent of ind	Percent of occ	Percent change	Employment change
TE1000	Total employment	12.7	0.0	100.0	13.0	0.0	100.0	2.1	0.3
TE1200	Total wage and salary employment	12.7	0.0	100.0	13.0	0.0	100.0	2.1	0.3
212000	Mining (except oil and gas)	0.1	0.0	0.4	0.0	0.0	0.3	-25.1	0.0
212200	Metal ore mining	0.1	0.1	0.4	0.0	0.1	0.3	-25.1	0.0
230000	Construction	0.3	0.0	2.1	0.4	0.0	2.7	31.9	0.1
238000	Specialty trade contractors	0.3	0.0	2.1	0.4	0.0	2.7	31.9	0.1
238200	Building equipment contractors	0.3	0.0	2.1	0.4	0.0	2.7	31.9	0.1
238210	Electrical contractors and other wiring installation contractors	0.3	0.0	2.1	0.4	0.0	2.7	32.2	0.1
31-330	Manufacturing	1.6	0.0	12.2	1.6	0.0	11.9	0.0	0.0
334000	Computer and electronic product manufacturing	0.1	0.0	0.6	0.1	0.0	0.5	-11.9	0.0
334500	Navigational, measuring, electromedical, and control instruments manufacturing	0.1	0.0	0.5	0.1	0.0	0.4	-12.2	0.0
336000	Transportation equipment manufacturing	1.4	0.1	11.2	1.4	0.1	11.1	0.7	0.0
336200	Motor vehicle body and trailer manufacturing	0.1	0.1	0.8	0.1	0.1	0.8	5.7	0.0
336300	Motor vehicle parts manufacturing	0.2	0.1	1.8	0.2	0.1	1.6	-5.9	0.0
336400	Aerospace product and parts manufacturing	0.4	0.1	2.9	0.3	0.1	2.7	-7.3	0.0
336500	Railroad rolling stock manufacturing	0.1	0.5	0.7	0.1	0.5	0.9	28.8	0.0
336600	Ship and boat building	0.6	0.5	4.5	0.6	0.4	4.4	0.7	0.0
420000	Wholesale trade	1.4	0.0	11.1	1.4	0.0	10.8	-2.6	0.0
423000	Merchant wholesalers, durable goods	1.3	0.0	10.3	1.2	0.0	9.4	-6.1	-0.1
423400	Professional and commercial equipment and supplies merchant wholesalers	0.2	0.0	1.2	0.2	0.0	1.3	3.8	0.0
423600	Electrical and electronic goods merchant wholesalers	0.6	0.2	4.4	0.5	0.2	3.5	-19.4	-0.1
423800	Machinery, equipment, and supplies merchant wholesalers	0.5	0.1	3.6	0.5	0.1	3.5	1.3	0.0
44-450	Retail trade	0.5	0.0	4.2	0.6	0.0	4.7	13.5	0.1
441000	Motor vehicle and parts dealers	0.1	0.0	0.6	0.1	0.0	0.7	16.8	0.0
443000	Electronics and appliance stores	0.5	0.1	3.6	0.5	0.1	3.9	12.9	0.1
443100	Electronics and appliance stores	0.5	0.1	3.6	0.5	0.1	3.9	12.9	0.1
48-490	Transportation and warehousing	4.7	0.1	37.1	4.7	0.1	36.0	-1.1	-0.1
482000	Rail transportation	4.0	1.8	31.0	3.7	1.7	28.8	-5.2	-0.2
487-80	Scenic and sightseeing transportation and support activities	0.5	0.1	4.0	0.6	0.1	4.7	22.0	0.1
488000	Support activities for transportation	0.5	0.1	4.0	0.6	0.1	4.7	22.0	0.1
488100	Support activities for air transportation	0.4	0.3	3.1	0.5	0.3	3.7	24.9	0.1
488300	Support activities for water transportation	0.1	0.1	0.6	0.1	0.1	0.6	13.6	0.0
560000	Administrative and support and waste management and remediation services	0.1	0.0	0.5	0.1	0.0	0.7	32.7	0.0
561000	Administrative and support services	0.1	0.0	0.5	0.1	0.0	0.7	32.7	0.0
810000	Other services (except public administration)	1.5	0.0	11.5	1.5	0.0	11.7	3.7	0.1
811000	Repair and maintenance	1.5	0.1	11.5	1.5	0.1	11.7	3.7	0.1
811100	Automotive repair and maintenance	0.1	0.0	0.4	0.1	0.0	0.6	29.3	0.0
811200	Electronic and precision equipment repair and maintenance	0.9	0.9	7.2	0.9	0.9	7.1	0.4	0.0
811300	Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	0.4	0.3	3.4	0.5	0.2	3.5	8.6	0.0
811400	Personal and household goods repair and maintenance	0.1	0.1	0.5	0.1	0.1	0.4	-5.3	0.0
900000	Government	2.2	0.0	17.2	2.2	0.0	17.2	1.6	0.0
999100	Federal government, excluding postal service	0.7	0.0	5.7	0.6	0.0	4.9	-12.8	-0.1
999200	State government, excluding education and hospitals	0.1	0.0	1.1	0.1	0.0	1.1	4.0	0.0
999300	Local government, excluding education and hospitals	1.3	0.0	10.5	1.5	0.0	11.2	9.2	0.1

 Attachment 8

O*NET OnLine

Summary Report for:

Updated 2010

green

49-2094.00 - Electrical and Electronics Repairers, Commercial and Industrial Equipment

Repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas.

Sample of reported job titles: Control Technician, Electronics Technician, Industrial Electrician, Electrical Technician, Electrician, Electrical and Instrument Technician (E&I Tech), Instrument and Electrical Technician (I&E Tech), Electrical and Instrument Mechanic, Repair Technician, Service Technician

View report: Summary | Details | Custom

Tasks | Tools & Technology | Knowledge | Skills | Abilities | Work Activities | Work Context | Job Zone | Education | Interests | Work Styles | Work Values | Related Occupations | Wages & Employment | Additional Information

Tasks

- Test faulty equipment to diagnose malfunctions, using test equipment or software, and applying knowledge of the functional operation of electronic units and systems.
- Inspect components of industrial equipment for accurate assembly and installation or for defects, such as loose connections or frayed wires.
- Install repaired equipment in various settings, such as industrial or military establishments.
- Examine work orders and converse with equipment operators to detect equipment problems and to ascertain whether mechanical or human errors contributed to the problems.
- Perform scheduled preventive maintenance tasks, such as checking, cleaning, or repairing equipment, to detect and prevent problems.
- Study blueprints, schematics, manuals, or other specifications to determine installation procedures.
- Set up and test industrial equipment to ensure that it functions properly.
- Repair or adjust equipment, machines, or defective components, replacing worn parts, such as gaskets or seals in watertight electrical equipment.
- Maintain equipment logs that record performance problems, repairs, calibrations, or tests.
- Calibrate testing instruments and installed or repaired equipment to prescribed specifications.

back to top

Tools & Technology

Tools used in this occupation:

Grounding hardware — Clamp sticks; Ground straps; Temporary protective grounds

Pipe bending tools — Hydraulic pipe benders; Pipe benders; Polyvinyl chloride PVC benders

Punches or nail sets or drifts — Knockout punches; Punches; Screw starters

Safety harnesses or belts — Safety belts; Safety harnesses; Safety lines

01098

ER1098

Voltage or current meters — High-voltage detectors; Low voltage detectors; Test lamps; Voltmeters

Technology used in this occupation:

Computer aided design CAD software — Autodesk AutoCAD software

Electronic mail software — Email software

Facilities management software — Computerized maintenance management system CMMS software; Maintenance management software

Spreadsheet software — Microsoft Excel

Word processing software — Microsoft Word

back to top

Knowledge

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Public Safety and Security — Knowledge of relevant equipment, policies, procedures, and strategies to promote effective local, state, or national security operations for the protection of people, data, property, and institutions.

Design — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

back to top

Skills

Repairing — Repairing machines or systems using the needed tools.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Equipment Maintenance — Performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Equipment Selection — Determining the kind of tools and equipment needed to do a job.

Complex Problem Solving — Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

Judgment and Decision Making — Considering the relative costs and benefits of potential actions to choose the most appropriate one.

back to top

Abilities

Finger Dexterity — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

Near Vision — The ability to see details at close range (within a few feet of the observer).

Problem Sensitivity — The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

Category Flexibility — The ability to generate or use different sets of rules for combining or grouping things in different ways.

Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense.

Information Ordering — The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

Oral Comprehension — The ability to listen to and understand information and ideas presented through spoken words and sentences.

Flexibility of Closure — The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.

back to top

Work Activities

Repairing and Maintaining Electronic Equipment — Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.

Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.

Interacting With Computers — Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

01100

Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily on the basis of mechanical (not electronic) principles.

Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.

Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).

back to top

Work Context

Face-to-Face Discussions — How often do you have to have face-to-face discussions with individuals or teams in this job?

Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets — How much does this job require wearing common protective or safety equipment such as safety shoes, glasses, gloves, hard hats or life jackets?

Telephone — How often do you have telephone conversations in this job?

Freedom to Make Decisions — How much decision making freedom, without supervision, does the job offer?

Importance of Being Exact or Accurate — How important is being very exact or highly accurate in performing this job?

Indoors, Environmentally Controlled — How often does this job require working indoors in environmentally controlled conditions?

Duration of Typical Work Week — Number of hours typically worked in one week.

Sounds, Noise Levels Are Distracting or Uncomfortable — How often does this job require working exposed to sounds and noise levels that are distracting or uncomfortable?

Electronic Mail — How often do you use electronic mail in this job?

Exposed to Contaminants — How often does this job require working exposed to contaminants (such as pollutants, gases, dust or odors)?

back to top

Job Zone

Title	Job Zone Three: Medium Preparation Needed
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
Related Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
Job Zone Examples	These occupations usually involve using communication and organizational skills to

coordinate, supervise, manage, or train others to accomplish goals. Examples include food service managers, electricians, agricultural technicians, legal secretaries, interviewers, and insurance sales agents.

SVP Range (6.0 to < 7.0)

There are 8 recognized apprenticeable specialties associated with this occupation:
Meteorological-Equipment Repairer; Avionics Technician; Control Equipment Electrician-Technician; Electronic-Sales-and-Service Technician; Field Service Engineer; Visual Imagery Intrusion Detection Systems (Maintenance); Visual Imagery Instrusion Detection Specialist; Supervisory Control & Data Acquisition Technician

To learn about specific apprenticeship opportunities, please consult the U.S. Department of Labor State Apprenticeship Information website.

For general information about apprenticeships, training, and partnerships with business, visit the U.S. Department of Labor Office of Apprenticeship website.

back to top

Education

Percentage of Respondents	Education Level Required
39	Some college, no degree
39	Associate's degree
21	High school diploma or equivalent

back to top

Interests

Interest code: **RIC**

Realistic — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

Investigative — Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

Conventional — Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

back to top

Work Styles

Attention to Detail — Job requires being careful about detail and thorough in completing work tasks.

Dependability — Job requires being reliable, responsible, and dependable, and fulfilling obligations.

Analytical Thinking — Job requires analyzing information and using logic to address work-related issues and problems.

Independence — Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

Integrity — Job requires being honest and ethical.

Cooperation — Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.

Initiative — Job requires a willingness to take on responsibilities and challenges.

Self Control — Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.

Persistence — Job requires persistence in the face of obstacles.

Adaptability/Flexibility — Job requires being open to change (positive or negative) and to considerable variety in the workplace.

back to top

Work Values

Support — Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical.

Working Conditions — Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions.

Independence — Occupations that satisfy this work value allow employees to work on their own and make decisions. Corresponding needs are Creativity, Responsibility and Autonomy.

back to top

Related Occupations

15-1143.00	Computer Network Architects
15-1151.00	Computer User Support Specialists Bright Outlook
15-1152.00	Computer Network Support Specialists
17-3023.01	Electronics Engineering Technicians Green
49-2011.00	Computer, Automated Teller, and Office Machine Repairers
49-2022.00	Telecommunications Equipment Installers and Repairers, Except Line Installers
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay
49-2097.00	Electronic Home Entertainment Equipment Installers and Repairers

back to top

Wages & Employment Trends

National

Median wages (2011)	$25.16 hourly, $52,320 annual
Employment (2010)	69,000 employees
Projected growth (2010-2020)	Little or no change (-2% to 2%)
Projected job openings (2010-2020)	17,700
Top industries (2010)	Manufacturing

Government

State & National

Select a State Go

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Source: Bureau of Labor Statistics 2011 wage data and 2010-2020 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2010-2020). "Projected job openings" represent openings due to growth and replacement.

back to top

Sources of Additional Information

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- Electrical and Electronics Installers and Repairers. Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2012-13 Edition.*

back to top

Attachment 9

O*NET OnLine

Summary Report for:
17-3024.00 - Electro-Mechanical Technicians

Updated 2011
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Operate, test, maintain, or calibrate unmanned, automated, servo-mechanical, or electromechanical equipment. May operate unmanned submarines, aircraft, or other equipment at worksites, such as oil rigs, deep ocean exploration, or hazardous waste removal. May assist engineers in testing and designing robotics equipment.

Sample of reported job titles: Electro-Mechanical Technician (E/M Technician), Electronic Technician, Test Technician, Tester, Mechanical Technician, Product Test Specialist, Electro-Mechanic, Electronic Instrument Technician, Laboratory Technician, Maintenance Technician

Also see: Robotics Technicians

View report: **Summary** | Details | Custom

Tasks | Tools & Technology | Knowledge | Skills | Abilities | Work Activities | Work Context | Job Zone | Education | Interests | Work Styles | Work Values | Related Occupations | Wages & Employment | Additional Information

Tasks

- Test performance of electromechanical assemblies, using test instruments such as oscilloscopes, electronic voltmeters, or bridges.
- Read blueprints, schematics, diagrams, or technical orders to determine methods and sequences of assembly.
- Install electrical or electronic parts and hardware in housings or assemblies, using soldering equipment and hand tools.
- Align, fit, or assemble component parts, using hand or power tools, fixtures, templates, or microscopes.
- Inspect parts for surface defects.
- Analyze and record test results, and prepare written testing documentation.
- Verify part dimensions or clearances to ensure conformance to specifications, using precision measuring instruments.
- Operate metalworking machines to fabricate housings, jigs, fittings, or fixtures.
- Repair, rework, or calibrate hydraulic or pneumatic assemblies or systems to meet operational specifications or tolerances.
- Train others to install, use, or maintain robots.

back to top

Tools & Technology

Tools used in this occupation:

Hex keys — Hex wrenches

Multimeters — Digital multimeters

Pressure indicators — Pressure gauges; Pressure sensors

01105

Signal generators — Function generators

Stripping tools — Wire strippers

Technology used in this occupation:

Computer aided design CAD software — Dassault Systemes SolidWorks software; PTC Pro/ENGINEER software

Enterprise resource planning ERP software — Manufacturing resource planning MRP software; Oracle Agile Product Lifecycle Management PLM

Industrial control software — Human machine interface HMI software; Motion control software

Operating system software — Linux; UNIX

Spreadsheet software — Microsoft Excel

back to top

Knowledge

Computers and Electronics — Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.

Mathematics — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

Mechanical — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

Engineering and Technology — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

Production and Processing — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

English Language — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

back to top

Skills

Operation Monitoring — Watching gauges, dials, or other indicators to make sure a machine is working properly.

Quality Control Analysis — Conducting tests and inspections of products, services, or processes to evaluate quality or performance.

Monitoring — Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Critical Thinking — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

Repairing — Repairing machines or systems using the needed tools.

Troubleshooting — Determining causes of operating errors and deciding what to do about it.

01106

Active Learning — Understanding the implications of new information for both current and future problem-solving and decision-making.

Active Listening — Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

Installation — Installing equipment, machines, wiring, or programs to meet specifications.

Operation and Control — Controlling operations of equipment or systems.

back to top

Abilities

Arm-Hand Steadiness — The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.

Near Vision — The ability to see details at close range (within a few feet of the observer).

Finger Dexterity — The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.

Inductive Reasoning — The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

Manual Dexterity — The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.

Control Precision — The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.

Deductive Reasoning — The ability to apply general rules to specific problems to produce answers that make sense.

Far Vision — The ability to see details at a distance.

Perceptual Speed — The ability to quickly and accurately compare similarities and differences among sets of letters, numbers, objects, pictures, or patterns. The things to be compared may be presented at the same time or one after the other. This ability also includes comparing a presented object with a remembered object.

Hearing Sensitivity — The ability to detect or tell the differences between sounds that vary in pitch and loudness.

back to top

Work Activities

Monitor Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.

Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

Inspecting Equipment, Structures, or Material — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.

Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Controlling Machines and Processes — Using either control mechanisms or direct physical activity to operate

machines or processes (not including computers or vehicles).

Repairing and Maintaining Electronic Equipment — Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Updating and Using Relevant Knowledge — Keeping up-to-date technically and applying new knowledge to your job.

Judging the Qualities of Things, Services, or People — Assessing the value, importance, or quality of things or people.

back to top

Work Context

Face-to-Face Discussions — How often do you have to have face-to-face discussions with individuals or teams in this job?

Importance of Being Exact or Accurate — How important is being very exact or highly accurate in performing this job?

Indoors, Environmentally Controlled — How often does this job require working indoors in environmentally controlled conditions?

Wear Common Protective or Safety Equipment such as Safety Shoes, Glasses, Gloves, Hearing Protection, Hard Hats, or Life Jackets — How much does this job require wearing common protective or safety equipment such as safety shoes, glasses, gloves, hard hats or life jackets?

Work With Work Group or Team — How important is it to work with others in a group or team in this job?

Freedom to Make Decisions — How much decision making freedom, without supervision, does the job offer?

Frequency of Decision Making — How frequently is the worker required to make decisions that affect other people, the financial resources, and/or the image and reputation of the organization?

Exposed to Contaminants — How often does this job require working exposed to contaminants (such as pollutants, gases, dust or odors)?

Spend Time Using Your Hands to Handle, Control, or Feel Objects, Tools, or Controls — How much does this job require using your hands to handle, control, or feel objects, tools or controls?

Exposed to Hazardous Equipment — How often does this job require exposure to hazardous equipment?

back to top

Job Zone

Title	Job Zone Three: Medium Preparation Needed
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree.
Related Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers. A recognized apprenticeship program may be associated with these occupations.
Job Zone Examples	These occupations usually involve using communication and organizational skills to

coordinate, supervise, manage, or train others to accomplish goals. Examples include food service managers, electricians, agricultural technicians, legal secretaries, interviewers, and insurance sales agents.

SVP Range (6.0 to < 7.0)

There are 2 recognized apprenticeable specialties associated with this occupation:
Electromechanical Technician; Assembler, Electromechanical

To learn about specific apprenticeship opportunities, please consult the U.S. Department of Labor State Apprenticeship Information website.

For general information about apprenticeships, training, and partnerships with business, visit the U.S. Department of Labor Office of Apprenticeship website.

back to top

Education

Percentage of Respondents	Education Level Required
38	Some college, no degree
38	Associate's degree
26	High school diploma or equivalent

back to top

Interests

Interest code: **RIC**

Realistic — Realistic occupations frequently involve work activities that include practical, hands-on problems and solutions. They often deal with plants, animals, and real-world materials like wood, tools, and machinery. Many of the occupations require working outside, and do not involve a lot of paperwork or working closely with others.

Investigative — Investigative occupations frequently involve working with ideas, and require an extensive amount of thinking. These occupations can involve searching for facts and figuring out problems mentally.

Conventional — Conventional occupations frequently involve following set procedures and routines. These occupations can include working with data and details more than with ideas. Usually there is a clear line of authority to follow.

back to top

Work Styles

Attention to Detail — Job requires being careful about detail and thorough in completing work tasks.

Concern for Others — Job requires being sensitive to others' needs and feelings and being understanding and helpful on the job.

Cooperation — Job requires being pleasant with others on the job and displaying a good-natured, cooperative attitude.

Initiative — Job requires a willingness to take on responsibilities and challenges.

Integrity — Job requires being honest and ethical.

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Dependability — Job requires being reliable, responsible, and dependable, and fulfilling obligations.

Independence — Job requires developing one's own ways of doing things, guiding oneself with little or no supervision, and depending on oneself to get things done.

Persistence — Job requires persistence in the face of obstacles.

Self Control — Job requires maintaining composure, keeping emotions in check, controlling anger, and avoiding aggressive behavior, even in very difficult situations.

Adaptability/Flexibility — Job requires being open to change (positive or negative) and to considerable variety in the workplace.

back to top

Work Values

Relationships — Occupations that satisfy this work value allow employees to provide service to others and work with co-workers in a friendly non-competitive environment. Corresponding needs are Co-workers, Moral Values and Social Service.

Support — Occupations that satisfy this work value offer supportive management that stands behind employees. Corresponding needs are Company Policies, Supervision: Human Relations and Supervision: Technical.

Working Conditions — Occupations that satisfy this work value offer job security and good working conditions. Corresponding needs are Activity, Compensation, Independence, Security, Variety and Working Conditions.

back to top

Related Occupations

49-2092.00	Electric Motor, Power Tool, and Related Repairers
51-2011.00	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers Green
51-2021.00	Coil Winders, Tapers, and Finishers
51-4011.00	Computer-Controlled Machine Tool Operators, Metal and Plastic
51-4121.06	Welders, Cutters, and Welder Fitters Bright Outlook
51-4122.00	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders
51-8021.00	Stationary Engineers and Boiler Operators

back to top

Wages & Employment Trends

National

Median wages (2011)	$24.63 hourly, $51,220 annual
Employment (2010)	16,000 employees
Projected growth (2010-2020)	Little or no change (-2% to 2%)
Projected job openings (2010-2020)	3,200
Top industries (2010)	Manufacturing Professional, Scientific, and Technical Services

01110

State & National

Select a State Go

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Source: Bureau of Labor Statistics 2011 wage data and 2010-2020 employment projections. "Projected growth" represents the estimated change in total employment over the projections period (2010-2020). "Projected job openings" represent openings due to growth and replacement.

back to top

Sources of Additional Information

Disclaimer: Sources are listed to provide additional information on related jobs, specialties, and/or industries. Links to non-DOL Internet sites are provided for your convenience and do not constitute an endorsement.

- Electro-mechanical Technicians. Bureau of Labor Statistics, U.S. Department of Labor. *Occupational Outlook Handbook, 2012-13 Edition.*
- Accreditation Board for Engineering and Technology (ABET), 111 Market Pl., Suite 1050, Baltimore, MD 21202. Phone: (410) 347-7700. Fax: (410) 625-2238.
- National Institute for Certification in Engineering Technologies (NICET), 1420 King St., Alexandria, VA 22314-2794. Phone: (888) 476-4238.

back to top

Attachment 10

COMPUTATION OF BENEFITS AND TOTAL COMPENSATION

FOR SELECTED OCCUPATIONS

Electrical and Electronic Installers and Repairers, Transportation Equipment

Mean Wage Rate = 20.02
Benefits = 29.6% of Total Compensation
X = 20.02 + .296X
.704X = 20.02
X = 28.44 Total Compensation
Benefits = 28.44 – 20.02 or 8.42

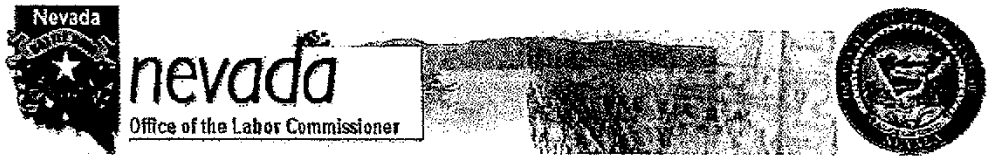
Electrical and Electronic Installers and Repairers, Commercial and Industrial Equipment

Mean Wage Rate = 29.14
Benefits = 29.6% of Total Compensation
X = 29.14 + .296X
.704X = 29.14
X = 41.39 Total Compensation
Benefits = 41.39 – 29.14 or 12.25

Electro-Mechanical Technicians

Mean Wage Rate = 26.33
Benefits = 29.6% of Total Compensation
X = 26.33 + .296X
.704X = 26.33
X = 37.40 Total Compensation
Benefits = 37.40 – 26.33 or 11.07

Attachment 11



2012 PREVAILING WAGE RATES
CLARK COUNTY

DATE OF DETERMINATION: October 1, 2011

APPLICABLE FOR PUBLIC WORKS PROJECTS BID/AWARDED OCTOBER 1, 2011 THROUGH SEPTEMBER 30, 2012*

***Pursuant to NAC 338.040(3), "After a contract has been awarded, the prevailing rates of wages in effect at the time of the opening of bids remain in effect for the duration of the project."**

As Amendments/Addenda are made to the wage rates, such will be posted to sites of the respective counties. Please review regularly for any amendments posted or contact our offices directly for further assistance with any amendments to the rates.

AIR BALANCE TECHNICIAN
ALARM INSTALLER
BOILERMAKER
BRICKLAYER
CARPENTER
CEMENT MASON
ELECTRICIAN-COMMUNICATION TECH.
ELECTRICIAN-LINE
ELECTRICIAN-NEON SIGN
ELECTRICIAN-WIREMAN
ELEVATOR CONSTRUCTOR
FENCE ERECTOR
FLAGPERSON
FLOOR COVERER
GLAZIER
HIGHWAY STRIPER
HOD CARRIER-BRICK MASON
HOD CARRIER-PLASTERER TENDER
IRON WORKER

LABORER
MECHANICAL INSULATOR
MILLWRIGHT
OPERATING ENGINEER
OPERATING ENG. STEEL FABRICATOR/ERECTOR
OPERATING ENGINEER-PILEDRIVER
PAINTER
PILEDRIVER (NON-EQUIPMENT)
PLASTERER
PLUMBER/PIPEFITTER
REFRIGERATION
ROOFER (Does not include sheet metal roofs)
SHEET METAL WORKER
SPRINKLER FITTER
SURVEYOR (NON-LICENSED)
TAPER
TILE /TERRAZZO WORKER/MARBLE MASON
TRAFFIC BARRIER ERECTOR
TRUCK DRIVER
WELL DRILLER
LUBRICATION AND SERVICE ENGINEER (MOBILE AND GREASE RACK)
SOIL TESTER (CERTIFIED)
SOILS AND MATERIALS TESTER

PREVAILING WAGE RATES INCLUDE THE BASE RATE AS WELL AS ALL APPLICABLE FRINGES

NRS 338.010(21) "Wages" means:

(a) The basic hourly rate of pay; and

(b) The amount of pension, health and welfare, vacation and holiday pay, the cost of apprenticeship training or other similar programs or other bona fide fringe benefits which are a benefit to the workman.

NRS 338.035 Discharge of part of obligation of contractor or subcontractor engaged on public work to pay wages by making certain contributions in name of workman. The obligation of a contractor engaged on a public work or a subcontractor engaged on a public work to pay wages in accordance with the determination of the Labor Commissioner may be discharged in part by making contributions to a third person pursuant to a fund, plan or program in the name of the workman.

Attachment 12

Analysis of the Airport ATS Technician Job at McCarran International Airport Las Vegas, NV

Expert Report

Kevin R. Murphy, Ph.D.

Lamorinda Consulting LLC
1 Camino Sobrante, Suite 201
Orinda CA 94563
(925) 258-9972

August 2, 2012

Expertise

I am an Affiliate Professor of Psychology and a Consulting Expert at Lamorinda Consulting LLC, with a specialization in Industrial/Organizational (I/O) Psychology, which deals with analyzing behavior and performance in the workplace. I am the Past President of Society for Industrial Psychology and past Editor of *Journal of Applied Psychology*, a leading scientific journal in the field. I have 30 years of experience as an I/O psychologist, and have consulted for organizations throughout the country.

Job analysis is one of the core areas of I/O psychology, and I have experience in job analysis in a number of industries. I have drawn on that experience to conduct an analysis of the job performed by Airport ATS Technicians at McCarran International Airport.

Methods

I used several methods to analyze the job of Airport ATS Technician, and to compare it to the job of Elevator Constructors (this job class is labeled Elevator Installers/Repairers in U.S. Department of Labor documents).

(1) I visited and observed several of the areas in which Airport ATS Technicians at McCarran International Airport perform their duties, examined tools, equipment, and facilities used in performing this work, and received explanations of the work performed in different areas.

(2) I interviewed four experienced Airport Technicians (1 ATS-I, 3 ATS-II, with an average of 8 years of experience in this or in similar jobs) to obtain detailed descriptions of the work they performed. I also obtained ratings on job analysis questionnaires from these subject matter experts.

(3) I consulted numerous publications describing the tasks, maintenance/repair procedures, and tools and equipment used in the Airport ATS Technicians at McCarran International Airport. These included manuals currently used at this Airport as well as publications comparing the technologies and service procedures used in Automated People Mover systems to the technologies and service procedures used in Elevator Installation and Repair.

(4) I obtained a detailed analysis of the work activities, knowledge, abilities, skills, and experience required in the job of Elevator Installers/Repairers from the U.S. Department of Labor's *O*NET* (*O*NET* is the Department of Labor's computerized database of occupational information for a wide range of jobs).