



KPNO Director's Office 520-318-8279

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Introduction

This edition of the Kitt Peak Tenant Newsletter includes updates on a range of items of interest to all of the observatories that share the top of Kitt Peak. Please feel free to ask questions about any of the items covered within or if there are any issues or other concerns that you would like to request information on. Please respond to Nanette Bird (nbird@noao.edu) regarding any issues and she will direct your email to the appropriate person for response.

For news about NOAO or KPNO since our last [tenant newsletter](#) please see our recent [general NOAO/NSO newsletters](#) or [NOAO Currents](#) announcements.

Fortunately we have not had any fires since the last newsletter, but we have had some severe winter storms that impacted mountain operations. In addition, there have been a number of changes regarding Kitt Peak operations. As you may be aware, in 2010 Dr. Buell Jannuzi stepped down as the KPNO Director and Dr. Abhijit Saha took over as Interim Director. A nationwide search in 2011 has now provided us with a new KPNO Director, Dr. Timothy Beers, who comes to us after 25 years on the faculty at Michigan State University. He has been on board since mid-October of 2011, and is anxious to get on with the business of making KPNO the best observatory possible (see his message below).

Within this Newsletter edition, the first since January 2010, we have included updates on a wide range of items that may be of interest to all of the observatories that share the top of Kitt Peak, known as Iolkam (or Ioligam Doag) to the Tohono O'odham Nation. KPNO does attempt to provide an annual Newsletter update and we apologize for the delays since the last one but our efforts and resources are limited. We continue to consider the possibility of holding an on-site tenants meeting but we understand that travel resources are limited. With the new video technologies that are available, it is possible that we could hold a video based meeting if that would be of interest. Please contact Nanette if there is any interest in a video meeting.

A Personal Message from new KPNO Director Dr. Timothy Beers

I accepted my new position (mid-October 2011) with great pleasure and anticipation of an exciting future for Kitt Peak National Observatory. The presence and continued scientific progress made by the tenants of KPNO are a big part of what makes this observatory so special and important to US astronomy, and I hope to strengthen this relationship further in the years to come. To begin this effort, I would very much like to meet with representatives of all of the tenants in the coming months. If each of your communities would be so kind as to designate a spokesperson for your concerns, issues, and desires for the future, and have them contact my administrative assistant Nanette Bird (nbird@noao.edu) in the next few weeks, we can arrange a time for a discussion. I would find that both informative and useful in forming plans for the future. As you are no doubt aware, NOAO and KPNO in particular are facing possibly difficult budgetary constraints in the coming years. The astronomy accomplished by our KPNO tenants is thus even MORE important as one of the reasons to keep the National Observatory and KPNO strong going forward.

PCWIN Radio System Update

During the past few years, KPNO staff members and staff from some of our observatories met with Pima County staff and their contractors to understand the Pima County Wireless Integrated Network (PCWIN) and their desires for a Kitt Peak radio site. While commercial operations are not allowed, PCWIN is a governmental communications system for southern Arizona that has been described as a critical, interoperable, public safety project. NOAO and KPNO hosted several informational meetings during which observatories identified their basic concerns as well as a discussion/review of the potential impact on the observatories. We greatly appreciate the assistance of the tenant staff members who assisted in these reviews. During these meetings/reviews, we restated that KPNO does not consider these requests for new installations unless there is a specific request for approval from the Tohono O'odham Nation and the Schuk Toak District. When the Tohono O'odham Nation or District approves of the project, then we work with relevant parties to identify mitigation efforts necessary to correct problems with frequencies, power levels, installation and/or site location to prevent impacts on astronomical research. Depending upon how the issues are resolved, then NOAO-KPNO will make a recommendation to the NSF regarding the approval or disapproval of the proposed installation. Any NSF approved installation does reserve the right to request relocation and/or removal if it should impact observatory research activities in the future. At the last meeting with the PCWIN personnel, we reminded them that tribal approval was necessary and that we would not proceed any further without the approval. To date, we have not received any tribal approval documentation and there does not appear to be any activity regarding this project. If you have any questions, please direct them to John Dunlop dunlop@noao.edu (520-318-8284) or Elizabeth Alvarez at ealvarez@noao.edu or (520-318-8414).

BIA Radio Site Update

During the PCWIN discussions (see above), additional questions were raised by the tribal representatives and tenant staff regarding the BIA radio site and the number of observed radio transmitters. It was reported that the BIA Wildland's fire response division had previously asked for permission to upgrade their system and that their technical personnel had worked with the radio observatories to incorporate mitigation requirements. At that time, KPNO staff were also working with BIA personnel in an effort to determine what other radio users might be co-located on their radio tower and how they may have obtained approval for the installations. At that time, we were not successful in obtaining the information so a letter was sent to the BIA Superintendent requesting that non-approved transmitters be removed and indicating that continued non-compliance could result in requesting that the NSF terminate the BIA radio site use on Kitt Peak. During the past year however, we have been contacted by the Director of Special Projects with the BIA's national office. He proceeded to initiate a radio review of active frequencies on the tower and recently provided the spectrum analysis for review, the information has also been forwarded to the appropriate tenant review staff for comment. In addition, the Director is being proactive in working with us to address the BIA radio installation concerns. Once that information is available, we will work with the appropriate personnel as necessary to correct potential issues. If you have any questions, please direct them to John Dunlop at jdunlop@noao.edu or (520-318-8284).

KPNO Tenant Status Updates

There have been few changes to the tenants on Kitt Peak since the last update. The Kitt Peak Visitor Center (KPVC) has become a small part of the WIY0.9 consortium and will use their observing time allocation to enhance their public observing programs. The LSST operated Calypso telescope has significantly reduced their development and telescope operation efforts. At this time, we are also not aware of any potential organizations that might be seeking telescope facilities on Kitt Peak.

Visitor Center Information

Rich Fedele

Visitor Center Manager, Kitt Peak National Observatory

Kitt Peak Visitor Center (KPVC) staff has been putting together an exhibit of all the tenants on the mountain. We plan to do it in the format of a back lit poster and website link but we need your help to do it. Please send the following information to rfedele@noao.edu. Your University or organization LOGO, an image you want us to use, and about 500 words of what you do or the research mission or any general information that the public would want to know. Your assistance on this project would be greatly appreciated as we are short staffed and do not have the staff time nor the resources to get the info ourselves. We will edit each submitted piece and send it to you for final approval so please include a contact. In addition to the Visitor Center operations, each year the KPVC also markets the whole mountain, including the tenant facilities, through its world-class programs. In the last year alone Kitt Peak has been mentioned in various articles in the following papers: The Miami Herald, AZ Republic, New York Times, The Dallas Morning News, Washington Post, St. Petersburg Times, AZ Daily Star and a number of smaller papers from all over the country. Our special thanks also go out to all those tenant observatories that have allowed us to escort the public through a tour of their facilities. The public has a voracious interest in Astronomy and what everyone does on Kitt Peak. By allowing the public interaction, you have helped us create a meaningful visit from people around the world. On a similar note, if you have any interest in renting your telescope out for public nights, please contact Rich Fedele for more information. This is currently done as a special program with the WIY0.9M telescope and the public has very favorably received it.

Mountain and Facility Operations

John Dunlop

Facilities Manager, Kitt Peak National Observatory

The small KPNO Facility staff is primarily focused on supporting the operations of the KPNO telescopes; however they also focus some of their efforts toward necessary mountain operations. Staff does work to reduce the operating costs of the mountain wide infrastructure to benefit all organizations on Kitt Peak and they respond to various emergency issues or situations. Over the past few years, we have undertaken efforts to improve response capabilities and be proactive on other mountain support activities such as roadway repairs/patching, fire protection and brush reduction efforts. Other efforts have gone into researching options to improve the data link bandwidth connections to Tucson and significant support to major ARRA funded efforts that will upgrade the mountain water processing/storage and distribution system. In the following articles we will try to provide information regarding these various efforts and provide updates on other mountain issues.

Special Events

In October we held an open house for members of the Tohono O'odham Nation and it was deemed a huge success. Even though daytime temperatures only hit the mid 50's, that didn't stop over 700 people from flocking to Kitt Peak from across the Nation. There were several food and craft vendors, basket and traditional dancers, a live band, and activities for children. There were fewer people this year than the event held in 2008, but this was a good thing! Crowd control was much more manageable and lines to each of the telescopes were significantly shorter at any given time. Parking at the picnic grounds was re-configured this year to accommodate many more vehicles, thus eliminating the need for overflow parking at the pullouts to the summit.

For the third year, three one-week-long Astronomy Camps were held at Kitt Peak throughout June 2011. The Camps immersed students in astronomy and motivated them to continue exploring science, math, engineering, and technology. Campers engaged in a variety of nighttime and daytime activities at the 2.3m Bok, 0.9m WIYN, 1.3m RCT, 12-m ARO, McMath-Pierce, and Visitor Center telescopes where they obtained a variety of data. Improvements to the cooling system at the Mayall U-floor made daytime activities there much enjoyable for the students. Astronomy Camp is sponsored by The University of Arizona Alumni Association.

Also held on Kitt Peak in June was the fifth annual Horse Camp where approximately 25 youths from the Schuk Toak and neighboring districts of the Tohono O'odham Nation camped at the picnic grounds. Horse Camp is run by Mr. Silas Johnson, Sr., who created the program to help Tohono O'odham youth build personal confidence and self-esteem, and to connect with and strengthen traditional O'odham values. The mountain operations staff cleaned up the picnic grounds to enable areas for the horse stable, cooking, and sleeping.

KPNO ARRA Funded Projects

Water Plant Renovation

Due to new EPA water regulation testing requirements over the past few years, some test results have begun to exceed new standards and a renovation of the 50 plus year old water processing plant was becoming necessary. Initial budget funding and planning efforts were being looked into and fortunately the NSF has provided approximately \$1M in funds from the American Recovery and Reinvestment Act (ARRA) to provide for an upgrade the mountain water processing/distribution system. KPNO staff then proceeded to obtain Environmental Engineering services to revise the processing system and prepare renovation documentation. At this time, the project contract has been awarded to the Phoenix based Hunter Contracting Company and they began their efforts in December of 2011. We have worked to increase our water storage since the project is anticipated to take 5 months of effort. Staff will be working with the contractor to minimize the impacts on the water supply as they update the treatment and disinfection systems. Once this primary project is completed additional funding will be necessary to renovate the storage tanks. We will issue periodic email project status updates over the coming months.

Instrument Handling Facility

Large high value instruments are either in place or under construction for use on KPNO telescopes and there are significant concerns regarding potential damage that could be incurred in transportation to/from the mountain top. To address this issue and the routine maintenance or unanticipated repair needs, KPNO has also obtained ARRA funds to develop a large Instrument Handling Facility (IHF). Initial plans were to construct a new structure however with the decommissioning of an NSO instrument an existing structure has become available that will accommodate this need. During 2012, this facility will be under renovation with completion projected for mid to late 2012. Opportunities may be available for use by other KP organizations so please contact us if this space that might be something that could support your operations.

Emergency Response and Safety Issues

NOAO-Tucson and KPNO staff continues to work with the Tohono O'odham Emergency Services group to ensure response to the emergency needs of Kitt Peak and open lines of communication. We have worked with their wild-lands fire response personnel to pursue fire brush reduction efforts in numerous areas around the mountain and worked with their staff to help enhance their knowledge of our equipment and facility. As has been noted in previous newsletters, we have experienced a sharp reduction in mountain based medically trained response personnel over the years and new regulations have increased the difficulties involved with staff also obtaining and maintaining an advanced training status such as EMT. While we continue to encourage staff to pursue relevant training in this area, in late 2010, a new position was established on Kitt Peak to provide a basic level of support for the mountain organizations and general public. This new position is staffed by a qualified and certified EMT (Amanda Culver) who is responsible for maintaining the emergency vehicles and providing on-site emergency response. She will also be working with staff and TO personnel on brush removal and various emergency response needs. We have also worked with Amanda to enable her to obtain basic FA/CPR/AED instructor certification. With this certification she will be able to offer these medical training courses, as may be scheduled or requested, at minimal or no cost to both mountain and tenant staff. Please note that we have obtained AED devices and located them in various areas around the mountain should they be needed. Please contact Amanda (Ext. 8659 or email: aculver@noao.edu) to identify the closest AED to your site and if you have any emergency response concerns or if you would like to pursue training for your staff on the emergency response equipment.

KP Telecommunications

The basic KPNO telecommunication system continues to perform at an acceptable level and there are no specific PBX changes or upgrades anticipated at this time. However, we do continue to explore various options to replace the 1986 system and/or do a significant upgrade or obtain a new IP based replacement system. Our last upgrade several years ago did provide us with an option to implement some new IP based phone connections at minimal cost should they be needed as the phone wires degrade. The upgrade also allowed us to implement IP based trunk lines which continues to help reduce the operating costs as the telephone lines utilize an ip based trunk on the data link to Tucson. The planned data link bandwidth increase, explained below, should allow us to continue to accommodate the voice system needs. We do note that the KPNO PBX is closely integrated with the NOAO-Tucson PBX which helps to control costs and telecom provider expenses. One result of this integration is that the telephone link is subject to the data link outages or the loss of electrical power in the Tucson facility. Fortunately these outages are minimal.

Data Connection – Tucson/Kitt Peak

In 2002, the TOUA fiber optic link was put in service and the connection to Tucson went from approximately 3.08MB/s to almost 45MB/s. At that time the change provided a significant increase in data transmission capabilities and allowed for the telecommunications link to see a reduction in costs. Over the last few years, it has been anticipated that new instruments and a projected growth in remote operations of current observatories may require an increase in this data rate. As noted in previous newsletters, we were also advised that TOUA was projecting some major rate increases to the data link however, they never implemented any changes. As a result of their indications, staff began to explore various options that might be possible to increase the bandwidth and control costs. Various options such as private microwave links and/or a combination of microwave links and fiber optic options were explored. During this period, we were advised that TOUA was also beginning to develop a data connectivity group as a part of their utility operations. In exploring different options with Qwest and various vendors, TOUA indicated they would be willing to modify their link and provide a high bandwidth Ethernet connection to us. Initial costing was not feasible but through their consultant, they were able to work with Qwest to develop a plan to be our supplier for the entire link. They then provided a very competitive proposal to install a 1 Gig Ethernet connection link at a reasonable cost increase that would hold the price for 5 years. In September of 2011, KPNO accepted their proposal and they began the process of setting up the link. This link should be in operation before the end of 2011 and it will significantly increase the available bandwidth and allow for enhanced data connectivity to all Kitt Peak organizations. As a reminder to everyone, the annual telecommunication costs associated with the PBX and data circuits are assessed to all tenants in April of each year with cost calculations based upon the percentage of actual bandwidth used by each organization over the year.

Mirror Re-coatings

Past improvements coating facilities has enabled Kitt Peak to make the process much more efficient and cost effective. As a result, the 2008 rates of \$10K for the 4Meter chamber and \$5K for the vertical coating 2 Meter chamber will continue. Future coating facility upgrades will continue to focus on improving the current high level of coating quality and staff will also be exploring the feasibility to incorporate other coating methods and materials. Please direct any coating request to Will Goble wgoble@noao.edu (520-318-8378) as early as possible to ensure that your requested date is available. Depending upon the time of year, some dates may need to be reserved up to a year in advance. It is also critical that your payment methods be in place prior to a scheduled coating date.

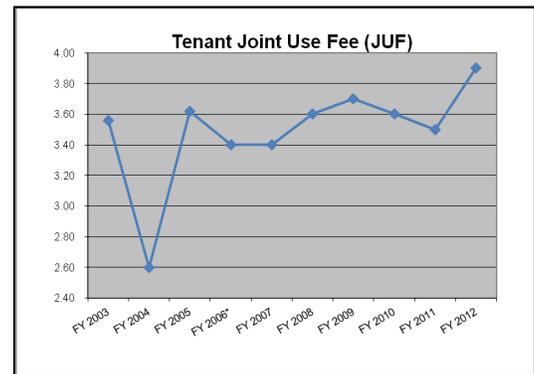
Updates on various Tenant Fees

The past few years have been very challenging for everyone and we anticipate that we will continue to be challenged in containing the costs for support of the mountain infrastructure. As of the end of October 2011, the Consumer Price Index has increased approximately 27.4% since October, 2001. Despite this increase in consumer costs, Kitt Peak continues to hold the line on most costs and reduce the need for increases. As an example the FY11 JUF and shuttle fees were less than the fees charged in FY01. We should also note that ARRA

funding has helped us to begin some major critical improvements to the water plant infrastructure that will help hold down future fee increases. We will continue to work on controlling costs to help reduce the demand for increases and stabilize your costs for Kitt Peak services but please note that future increases will be inevitable. Please note that the annual Joint Usage and Shuttle Participation Fees will be assessed on an coming invoice and the voice/data fees will be calculated and assessed on an invoice in the next April/May time period. For your general information, we have identified each of these various Kitt Peak Fees and noted their current and/or proposed costs.

JUF

As a result of the 2006 revisions in the methods utilized to calculate and identify costs for support of the mountain infrastructure, we were able to hold the fees in a narrow range between \$3.40 and \$3.60 per ssf. This method has helped correlate planned costs with projected expenditures and allow for development of a small buffer to meet unanticipated expenses. As a reminder, there are a number of basic mountain infrastructure activities that are funded by this fee. They include; mountain trash removal, septic tank pumping, road clearing and minor repairs, mountain wide emergency response efforts, electrical, data and telecommunication supply/distribution efforts, mandatory regulatory compliance issues, mountain cargo transportation deliveries and public operations. In 2010, we were very fortunate to be awarded ARRA funds to use to begin renovation of the mountain water plant. At that time we were starting to build up a reserve for the potential major repair cost with a multi-year funding plan that we began incorporating in to the JUF in 2008. Because of the ARRA funding, we reduced the rate by ~3% in FY 10 to help reduce the fund accumulation. Last year (FY11), we reduced the fee once again (~3%) to help control the fund accumulation. Unfortunately, other unanticipated expenses associated with the mountain infrastructure operations were incurred and we determined that the rate was reduced too much. For FY12 we have had to increase the rate by ~11% to cover expended costs and meet projected operating expenses. The rate has been set at \$3.90 per ssf and will be billed at the beginning of the year. For your reference, the adjacent graph highlights the JUF rate over the past 10 years.



Shuttle Participation Fee

Despite unanticipated and significant increases in fuel costs, NOAO and KPNO have worked to reduce the shuttle vehicle transportation costs. We continue to extend the usable life of the cargo truck, KP bus and the shuttle vehicles to help reduce fleet operating costs. In addition, our property officer was able to obtain a new bus from the government excess program that we believe will provide a minimal cost replacement for the 15 year old KP bluebird bus. For the FY11 year the fee was set at \$4.00 (per actual square foot of building space, no minimum) and we anticipate a slight 1.2% increase to \$4.05 for FY12. Despite increased fuel costs the proposed FY12 rate will remain below the rate of \$4.10 that was billed in FY05 and 08. This system is very cost effective for tenant organizations to participate in and provides transportation for their staff and their visitors to/from Kitt Peak and Tucson. The operational costs are shared on an actual building square footage basis with no minimum charge and additional tenant participation would help to reduce fees as more organizations would share the fixed costs. For FY12 the rate has been set at \$4.05.

Meal Charges

At this time we do not project an increase in the basic meal charges for FY12. The unit cost for each of the meals has remained the same since the last increase in FY06 and we continue to be proactive in reducing the costs associated with the dining services. Recent reviews of the usage and costs over the past year indicate that the current charges are generally recovering the operational costs. We will continue to monitor the costs over the next 6 months and on a regular basis to determine if charges remain appropriate. It is very critical to our costing

reviews that all individuals eating or obtaining meals from the kitchen ensure that they sign in so that we can accurately identify the associated per meal charges. Should the current meal options be increased or expanded or food costs continue to increase then the meal charges would need to be adjusted and we will attempt to provide advance notification.

Lodging Rates

Ongoing cost reviews indicate that it is appropriate for the base FY11 Lodging Rate to remain at \$90 per night. As noted for meals above, reviews of the records for usage and costs over the past year indicate that the current rate continues to recover the operational costs. Our staff works hard to control or reduce costs and we will continue to review the rates on a regular basis and revise or adjust them as necessary. We are also evaluating the dormitories to investigate options for improving them and providing a more comfortable environment for the users. We will endeavor to provide advance notifications to users should any rate changes or activities occur.

Water Rates

The rates have remained at \$0.04 per gallon since the FY08 increase and we appreciate that everyone works to conserve their water use. Please note that: due to the on-going drought, water hauling efforts, new EPA operator certification requirements and increased EPA regulations; our costs associated with operation of the water plant continue to increase our potable water production costs. It is anticipated that the ARRA funded renovation (discussed above) and upgrade of the water plant will help to control and potentially reduce operating costs so no additional water rate increases are anticipated at this time. We have also been advised that the Tohono O'odham nation has now implemented their new water code for the reservation and established a permit system for all water collection and use. At this time, we are preparing the required documentation to submit and this may have a yet to be determined impact on the mountain water system costs. We continue to monitor and respond to all tribal and EPA requirements as they involve the mountain collection, processing and distribution systems.

KPNO Heavy Equipment and/or Support Labor

We also want to remind you that Kitt Peak has a range of heavy equipment (with trained operators) and trained staff based on the mountain that is available for your support. With advance notice, we can provide support to your organization with staff and/or equipment for lifting, loading or unloading, or excavation projects. Upon request, a listing of our available equipment and established rental rates can be provided. There is no transportation or delivery fee and the costs are on a time used basis. Our equipment operator labor rate is per NSF approved recovery rates for their total support time on an hourly basis. For potential labor support please contact John Dunlop or Dan Eklund to discuss your needs and how we might be able to assist.

TERO Reminder

Phone: 520-383-3304 Email: tero@toua.net

We want to remind you that compliance with the tribal employment ordinance is required under the master lease with the Tohono O'odham Nation and all NSF subleases. Operations on Kitt Peak require that you contact and work with the Tohono O'odham Tribal Employment Rights Office (TERO) on all internal employment opportunities and sub-contacted efforts on the mountain. Please ensure that your mountain operations and all subcontracted efforts remain in compliance. To ensure that our KPNO sub-contractors comply with the TERO ordinances, KPNO has developed a one-page form for contractors to have signed by the TERO office and returned to our contracting office prior to allowing them to start work on the mountain. The form is attached for your information and we suggest that something similar be used by each tenant organization to help ensure compliance with the regulations. KPNO staff in the NOAO Contracts office may be able to provide some guidance if needed and/or provide contracted labor to help support your efforts.

Updated Kitt Peak Staff Contact Listing

Name	Title	Phone	Email
Timothy Beers	Director, KPNO	520-318-8353	tbeers@noao.edu
Nanette Bird	KPNO Directors Admin Assistant	520-318-8279	nbird@noao.edu
Lori Allen	Deputy Director, KPNO	520-318-8486	lallen@noao.edu
Jay Elias	Interim Manager – ETS North	520-318-8231	jelias@noao.edu
John Dunlop	NOAO-North Facilities Manager	520-318-8284	dunlop@noao.edu
Mike Hawes	KPNO Facilities Supervisor	520-318-8734	mhawes@noao.edu
Bellina Cancio	KPNO Admin Assistant (Mountain)	520-318-8603	bcancio@noao.edu
Elizabeth Alvarez	KPNO Assistant to the Director	520-318-8414	ealvarez@noao.edu
Chuck Gessner	NOAO Risk Manager	520-318-8211	cguessner@noao.edu
Rich Fedele	Manager, Public Outreach	520-318-8163	rfedele@noao.edu
Dan Eklund	KPNO Project Manager	520-318-8588	deklund@noao.edu
Skip Andree	Mountain Telescope Ops Manager	520-318-8237	sandree@noao.edu
Cheri Marks-Murphy	KPNO Support Office Assistant	520-318-8135	cmarks@noao.edu



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Sample Form

TRIBAL EMPLOYMENTS RIGHTS OFFICE CERTIFICATION

(Return this Certification to AURA Contracts Office)

This sub-award, in accordance with Article 14 e, is subject to Ordinance No. 01-85, "Papago Employment Rights Ordinance", ORDINANCE OF THE PAPAGO COUNCIL, March 20, 1985 and the implementing regulations issued by the Tohono O'Odham Employments Rights Commission. These regulations apply to the Contractor and any of its sub-contractors during performance of this Sub-Award.

The Contractor is required to contact the TERO Office immediately upon receipt of notification of an award. The Contractor shall present this Certification to the TERO Compliance Office for signature. A copy of the signed Certification shall be returned to the AURA Sub-award Officer prior to performance of the work. AURA may terminate this sub-award in the event the Contractor fails to return a signed copy of this Certification.

Assigned TERO Compliance Officer _____

**Date Reviewed by
Administrator/Director** _____

Approved _____

TERO Fee Received _____

Date Received by Secretary _____

RECAP

**SECTION 3 (Employment/Trng)
applies:**

SECTION 4 (Contracting) applies:

SECTION 11 (TERO Fee) applies:

WAGE SCALE applies:

<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
<input type="checkbox"/>	YES	<input type="checkbox"/>	NO