NIATT

Sustainable Transportation On Campus and in the Community

Proceedings from the 2005 Conference



Campus and Local Transportation

By

Karen Faunce Tami Moore Dr. William McLaughlin

Workshop Track 1: September 22-23, 2005

Our Common Charge: Sustainable Transportation on Campus and in the Community

Recent global events have brought into sharp focus our nation's transportation system and the energy system that underlies it. Conflict overseas and natural disasters in the U.S. have spotlighted our dependence upon foreign oil; the vulnerability of the Gulf Coast to environmental impacts; the implications of our resource dependence and land use investments in war-torn and hurricane-prone areas; issues of security and transportation with regards to emergency evacuation strategies; and the social inequities pertaining to access to resources. We are compelled to ask: Can our tightly-woven transportation-land use-energy-environmental system be sustained over the long run?

We can and should continue to examine the issues of technology, resource use and the role of education in fostering a system of sustainable transportation both locally and nationally. One chapter in this process took place in September, 2005 on the University of Idaho campus where 200 interested individuals from the community and the university addressed topics relating to sustainable transportation; including campus and local transportation, research facilities, educational programs, land use and sustainable development, and alternative fuels. These issues have relevance for universities, local communities, and the national landscape.

Many important insights emerged from the two day conference:

• The creation of a sustainable, multi-modal transportation system in Moscow, Idaho that links the University of Idaho to the greater community is possible through a cooperative approach between entities. In Workshop Track 1, national transportation experts outlined steps toward a positive shift from single occupancy vehicle dependence to a multi-modal sustainable and equitable transportation system developed in cooperation between local governments and universities.

• The University of Idaho has the opportunity to be a leader in research, and a model for the application of renewable energy sources. In Workshop Track 2, University of Idaho Architecture students facilitated a design charette, which yielded several designs for a sustainable energy lab and transit facility on campus.

• *Student involvement is essential in the discussion of sustainable transportation.* In Workshop Track 3, participants discussed how service learning projects can provide both university students and faculty with a more effective way to collaborate with community leaders in addressing land use and environmental issues, and engender a sense of stewardship in future generations.

• *Community values must be brought into the discussion of land use and transportation.* In Workshop Track 4, experts in the field of transportation helped participants identify community values, and then translate those values into attributes that the transportation system should have.

• *Rising petroleum fuel prices and the increasing need for a decentralized fuel source make the time ripe for research and development of alternative fuels, such as Biodiesel.* In Workshop Track 5, a group discussion took place about the advantages and impediments to producing feedstocks, to creating a Biodiesel fuel production facility, and to creating a market for the fuels on the Palouse.

The time is right for the university to embrace a spirit of community and interdisciplinary cooperation, in order to address today's transportation, energy, and environmental problems. UI President Tim White's signature on the Talloires Declaration, a commitment to environmental sustainability in higher education, behooves faculty, students, and staff to seek innovative solutions for common problems facing the university, and inevitably, the community as a whole.

Former Mayor Comstock and current Mayor Chaney both came to the conference, and affirmed the positive relationship that exists between the city and the university, as well as our common challenges. I trust that we can accept the charge to face these challenges together.

Michael Kyte

Michael Kyte Director, National Institute of Advanced Transportation Technology University of Idaho

WORKSHOP TRACK 1:



Will Toor **Boulder County,** Colorado

Highlights from his Keynote Speech

- During its first year at UC Boulder, the faculty/staff transit pass program reduced parking demand by 350 spaces.
- It's two and a half times more expensive to meet demand through adding parking spaces than to reduce demand with a transit pass program.
- A strong partnership between the university and the community is key to developing a sustainable transportation system.



Geoff Straw Director, Unitrans UC Davis, California

The transit system at UC Davis was "the first area where the two entities (the city and the university) got along."

Campus and Local Transportation

Introduction

Campus and Local Transportation was the concern of participants in Workshop Track 1 of the conference, Sustainable Transportation on Campus and in the Community, held at the University of Idaho in September of 2005. Twentythree individuals, representing the city, the university, state transportation agencies, private firms, and charities gathered to discuss the assets and transportation challenges faced within the city of Moscow and on campus, asking the questions: How can we make transportation to and within the University of Idaho campus more sustainable and environmentally-friendly? What does a sustainable transportation system mean for the university? What plans, policies, and programs should be considered?

Small group work, brainstorming sessions, and presentations engaged the participants in the discussion. University faculty, staff and students provided the history and data pertaining to the current transportation situation at UI; and national transportation experts, Will Toor, Boulder County, Colorado Commissioner, and Geoff Straw, manager of Unitrans- the student run transit operation at the University of California, Davis- shared their expertise and vision of what an integrated sustainable system of transportation, in and around a university campus, might look like. The workshop was facilitated by William McLaughlin, Professor, Department of Conservation Social Sciences, at the University of Idaho.

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- Kegulate Lampus Delivery
- Better modal conflict mitigation
- Vehicles VS. Other modes (reviewing (studying circulation))
 Scheduling Classes; activities et. Could make the system more Supportive of systemetic trans (flatting; more unit bearing; et.))
 Understand white the could could of the systemetic trans
 - Understand what you can coutrol VS. Manage
 - Peak rush is liveable we do not need to over react
 - Quick fixes may just create other problems

Facilitator Dr. William McLaughlin leads the workshop participants in a brainstorming exercise to create a vision for sustainable transportation on and around campus.

Campus and Local Transportation



The only thing in Idaho less well-funded than education is public transportation."

- Tom LaPointe, Director, Valley Transit

Opening Exercise:

Dr. McLaughlin was explicit in his instructions that the participants should move around and sit with unfamiliar people, in order to create diverse working groups for the exercise. The groups were given fifteen minutes to create a list of current issues in local transportation. Some of the groups addressed the transportation issues for moving around on campus, some groups addressed transportation issues for getting to and from campus.

The groups addressing on campus issues noted the following:

• **Context:** Terrain and weather, including steep hills, snow and ice removal, protection for pedestrians and cyclists from inclement weather, and safety issues need to be taken into consideration when addressing transportation planning.

• **Safety:** Safe traffic interactions between different modes- cars, bikes, motor-cycles, scooters, and pedestrians need to be developed.

• Access: Accessibility should include ADA accommodations, efficient emergency and delivery routes, user friendly transit routes, carpool and vanpool accommodation and accessible parking.

• Assessment: There is a need for a *systems view* of transportation on campus. An assessment process that analyzes supply and demand for parking, transit availability to and from campus housing, the different needs of students, faculty and staff, as well as route studies for the different modes is essential.

• **Infrastructure and Design:** There needs to be an educational component for promoting an integrated, sustainable on-campus system. Infrastructure needs to exist that promotes alternative fuels, as well as a campus transit system that provides an alternative to cars coming in from off-campus.

The groups addressing transportation to and from campus noted the following:

• Access: Transportation to and from campus needs to consider students coming from rural and outlying areas. Bike paths and pedestrian routes, including sidewalks, need to be improved. Emergency access must be considered. More bus routes that access campus are needed. A park and ride, vanpool and carpool systems need to be developed to reduce single occupancy vehicle traffic. Transit between Moscow and Pullman can be improved.

• **Safety:** Highway 8 has very limited safe pedestrian crossing opportunities. Simultaneously, housing developments across Highway 8 has increased the number of pedestrian crossings on a daily basis. Similarly 6th street has many multimode traffic conflicts during peak class change times.

• Assessment: Analysis of traffic flow and residential patterns would determine the feasibility of various transit systems to and from campus. Campus

Sustainable Transportation On Campus and in the Community

scheduling analysis would reveal peak pedestrian crossing times in and around campus. The use of existing public transportation (Wheatland Express) should be studied to better integrate its use in the community.

• **Policy:** The University of Idaho has the opportunity to review policies pertaining to bike traffic guidelines, class scheduling, and age/grade restrictions for parking and commuting to campus. Coordination between city and campus traffic planning entities needs to take place.

• **Funding:** "The only thing in Idaho less well-funded than education is public transportation."- Tom LaPointe, Director, Valley Transit. Local match funding for federal dollars must be sought for any improvements in the area of campus/community transit.

Local Presenters:

History of Campus and Local Transportation Nels Reese, Professor, Department of Architecture, University of Idaho

Architecture professor Nels Reese gave an overview of the UI campus history, with a particular emphasis on transportation. Reese was the director of facilities planning at one time, and attended UI as a student before that. Reese told participants that in the early 1900's the campus had the aesthetic of being "a city on the hill," separate from the city of Moscow, and containing an eleven-acre green. Reese pointed out that this time period for the campus illustrates a paradigm of a campus with little car traffic. In the 1960s there was a large building campaign. Car traffic at UI increased and drivers could "race through the middle of campus." When Mt. St. Helens erupted in 1980, many streets were closed for ash removal. The campus community noticed a quality of life improvement, and the barricades remained, deemphasizing car travel once again. Reese was the campus architect during

these years, and a student of his proposed the idea for a centrally located student union. Though it was considered a good idea, it took twenty years for "The Commons" to come into existence. Reese pointed out that "vision to completion takes time," but projects that emphasize "democratic" interaction between campus groups, and provide the opportunity for people to move in different modes ("speed is not the only thing") enhances the experience on campus.

> The "City on the Hill." Historic Administration Building, ca. 1898 http://www.lib.uidaho.edu/specialcollections/uibldngs.html



"Speed is not the only thing."

-Nels Reese, Professor, Department of Architecture, University of Idaho



Facts about Campus Transportation Evan Reed, Howard Cooley, Angelica Monet Graduate students, Department of Civil Engineering, University of Idaho

Next, three graduate students in Civil Engineering from the University of Idaho, Evan Reed, Howard Cooley, and Angelica Monet reported their findings from a study of campus transportation. Their report stated that sustainable transportation on campus should have three goals: social, economic and environmental, and that these could be measured using specific indicators.

• Socially the goal will be to have a healthy and equitable transportation system providing diversity between modes of transportation.

o Health and equity will be monitored by the indicators of health and fitness and mobility for nondrivers.

• Economically the goal will be to have a cost efficient transportation system that is affordable to the university, students, and taxpayers.

o Cost efficiency will be measured by the indicator of facilities costs to the University for parking and roads improvements.

• Environmentally the goal will be to have efficient land usage practices not invade on habitat and also not cause excessive emissions by unnecessary travel.

o Land use mix will be the indicator for the environmental goal.

The students presented preliminary statistics from their indicator study, demonstrating some of the means for measuring such indicators on a college campus. Their complete report is posted online at http://www.webs1.uidaho.edu/sustainable_transportation/track1group1.pdf.

Kimi Lucas Manager of Parking and Transportation Services, University of Idaho

Ms. Lucas spoke to the group about the parking situation on campus. Lucas quoted Will Toor of Boulder, from his speech earlier in the day, when he stated, "a university is a diverse community held together by complaints about parking." She described her job as Parking Manager as "never dull." She

The biggest myth about parking is the myth of a parking shortage. In fact, there is plenty of parking on campus, there are always empty spaces. What there is not, is parking which is fifty feet from where each person wants to be.

> - Kimi Lucas, Manager of Parking Services University of Idaho

has spent the last two years in her position trying to streamline the parking and ticketing process, to create an open atmosphere in the office, and to educate the university population about the parking situation on campus.

For the first time, the office is working on transportation issues as well. Lucas is working with Moscow Valley Transit and the Wheatland Express to further develop transportation between UI and WSU campuses, and they are developing a park and ride program. Many of these programs are in their infancy, she said,

and further input is needed. Students make a great deal of difference in these discussions. Lucas gave the example of a student, Jacob Parker, who put a tremendous amount of energy into the crossing problem on Highway 8, near the university. By attending Moscow Transportation Commission meetings, and making presentations on pedestrian safety issues, Parker helped ensure that two crosswalks were created on Highway 8, and the discussion continues for improving safety. The actions of individuals do make a difference, she stated, and she encouraged students to make their voices heard. In conclusion, she noted that there are many benefits to accommodating modes of transportation other than cars, including health benefits to the individual. Dr. McLaughlin asked Lucas what was the biggest myth about parking, and she said that it is the myth of a parking shortage. In fact, there is plenty of parking on campus, there are always empty spaces. What there is not, is parking which is fifty feet from where each person wants to be.

As a break, and a lead-in to the presentations that followed, Dr. McLaughlin led a brief brainstorming activity, in which each group quickly came up with some key phrases to define a Sustainable Transportation campus. What would it look like in five to seven years? Participants worked in groups, and their responses are listed below.

Group A: Bike lockers More green spaces Walking and biking taking place Multi-modal systems	Group B: More green campus Downtown pedestrian mall Pedestrian friendly community
Limit parking opportunities Block 6 th street Dedicated bike lanes that don't end suddenly Make a dedicated Sustainability Office on campus for edu- cation and management Tunnel under W. Pullman Road Parking incentives for hybrid cars and bio-fuel vehicles	Roundabout for cyclists Economical self-sustaining transit Multi-modal connectivity- park and ride, shuttles Seasonal availability for all modes- snow removal, heated sidewalks
Group C: Reserved parking for ADA and elderly and service vehicles Intermodal connections Extended bike paths Telecommuting and non-traditional hours Increased routes and hours for bus service Covered bike path and lockers for bikes No Single Occupancy Vehicles on campus Parking permit restrictions Tuition credits for non-parking permit students on campu	Group D: Culture change Buses using alternative fuels Less pollution Light rail in the region Heated sidewalks Pedestrian improvements Civic-Academic integration Expanded bus service



Photo by Larry Dalton http://www.newsreview.com/sacramento/Content?oid=oid%3A48465

Case Study Presentations: Transportation Approaches in Other Locations and Campuses

Geoff Straw, University of California, Davis

Geoff Straw is the director of Unitrans, the bus system that provides sustainable transportation to the 64,000 Davis, California citizens, plus the 22,000 college students at the University of California, Davis. Straw said that as director he is continually challenged to foster a working relationship between the city and university constituents, while honoring their sometimes divergent visions, and maintaining the mission of Unitrans, which began as a university bus system- the platform on which the student body president ran- in 1968. The student association purchased two used double-decker buses from London, and now Unitrans operates over 40 buses on 15 routes, on campus and throughout the city. Some of the fleet includes trademark double-decker buses, one of which was converted from diesel, to run on clean natural gas. The rest of the modern fleet also run on clean natural gas, and one experimental model uses a hydrogen-CNG blend. The system remains student-run, with oversight from a few non-student support staff.

Straw was enthusiastic about the successes of Unitrans. The system serves as a model for other cities and universities that are posed with the question of how to efficiently handle growth, traffic problems, economic constraints, and a sustainable vision. Straw said that Unitrans operates a transit service in a city of 64,000, which is similar to those found in populations of 400,000 – 500,000. This is in part due to the innovative student thinking from which the project originated. Also, an atmosphere of cooperation between the city and the university has provided the opportunity to grow the project to its current scale. Unitrans has a uniquely grass-roots feel, while it is supported by federal, state and local funds. Students pay a fee each semester, and then can access the service for free. Local citizens ride for a fee, which is affordable, thanks to federal capitol and operations monies. The city passes through a percentage of state funds. All of this gives Unitrans a budget of 3.5 million per year. Straw said that this transit system was "the first area where the two entities (the city and the university) got along."

In order to develop routes, students employed by Unitrans mapped student addresses and population densities. Because the campus is closed to cars, bus routes to get students on and around campus were prioritized. Straw said that the corridor with the heaviest student density hosts 20 to 40 buses per hour- creating an "elephant train" of buses. Unitrans' "Red Route" is the city service route that provides transportation to the schools, shopping districts and employment centers

Ridership has tripled since 1991, when Unitrans created a flat fee approach that was built into student fees, and stopped charging students per ride. Also, Davis is a very "rideable" community, so bikes are very common on and around campus. Students who ride bikes, generally don't need the buses, but the overall impact of having a closed campus, a rideable community and a state-of-the-art bus system means that alternative modes of sustainable transportation are not only popular, but practical.

Straw ended his presentation by describing the West Village Project in Davis. This plan came about as a proposed solution Davis' affordable housing problem. People who work in Davis often cannot afford to live there, and the city and county's commitment to limited growth, means that people are living out of town and commuting great distances to work and study in Davis. This complicates the traffic and parking issues around campus and throughout the city. The proposed West Village Project is a planned community focused on UC Davis students, faculty and staff. Using a smart growth design, the community includes high density housing, a commercial center, cafés, an elementary school, and bus services. The project is located on university owned land. In order to mitigate problems for the city, cars from the village cannot enter city streets, except through a single entrance and exit. Bike and pedestrian routes are numerous and well-maintained, according to the plan. Straw conveyed to the group his enthusiasm for these innovative solutions that make Davis a model of cooperation between the city and the university; and of sustainability, both economically and environmentally.



Will Toor, Boulder County, Colorado

Boulder, Colorado has a population of about 100,000 with a university population of 29,000. Will Toor is a county commissioner with a passion for sustainability. Up to the 1980's, transportation planning in the city was focused on the expansion of roads to accommodate increased single occupancy vehicle traffic as the city grew. This expansion, however did not serve to maintain the quality of life that citizens held dear, so alternatives needed to be explored. Since then, the university and local government have interfaced to make Boulder a multi-modal community, keeping vehicle traffic at a constant level, even while the city grew.

In the 1990s, the existing public transit system was underused, except by those who had no other transportation option. By surveying citizens Boulder on what they desired in a public transportation system, the planning committee was able to develop new routes and provide a system which provided:

- Understandable routes
- Frequent bus runs- every 10 minutes with no schedules to memorize
- Streamlined transfers, without waits in the downtown transit center
- Color coding, for easy recognition of bus routes
- A friendly feel

Then the committee created an education and marketing campaign to promote use of the new system. Using federal funding, and later, local funds as well, routes were increased to the point that currently over 50% of the community is within walking distance of one of the routes. The long range plan is to provide service to the rest of the community in the next ten years.

Toor stated that the routes were developed with "an emphasis on environment," providing comfortable bus shelters, good pedestrian crossing, and underpasses. There is also "information architecture"electronic signage, which informs riders of the wait until the next bus arrives.

The development of Boulder's transit system was brought about by a cooperative effort between the university and the city. However, it was the students, said Toor, that were the "driving force." Though



the administration was skeptical, the student association at UC Boulder voted to tax themselves, and create a demand for an improved transit system. Support from the rest of the university was generated by the students' enthusiasm.

Currently over 65,000 people have transit passes- students, staff and faculty at the university, employees in the downtown area, and members of neighborhood associations, who can buy their passes as a group. The introduction of passes has increased bus ridership by 300%.

Another facet of the effort to get people out of their cars in Boulder was the development of improved pedestrian routes, and more attractive public areas to encourage people to walk. Some areas of downtown now exclude cars, allowing people to bring their children to public areas to play without concern for traffic. The downtown area has been revitalized into a cultural and entertainment district, giving a financial boost to local businesses which were being out-competed by the area malls.

To encourage a bicycling alternative, a friendly environment for cyclists has been created, which includes:

- Bike parking
- On and off-street routes
- Signalized intersections
- Underpasses
- Routes that divert cyclists away from car traffic, providing faster travel time
- Bike racks on buses
- An on-campus bike center for repairs and rentals

Innovative funding strategies have to be used to create such an environment. The bike and pedestrian improvements have been made through a combination of different funding sources, including local transportation dollars, federal enhancement funds, federal air quality/ congestions mitigation funds, and state funding from lotteries. Also, to create demand and support for cycling improvements, students at the university voted to increase their transit pass fees in order to create bicycle programs. The current cost per student per semester is \$35.00 for the transit pass, and for supporting the biking programs. Also, flood utility dollars could used to create green spaces and bike routes anywhere improvements were being made to the water flow systems beneath the roads.



Bear Creek, before and after. Flood dollars were used to build an underpass for bicycles.

Toor closed his presentation by saying that the results have been significant. There has been a 17% shift away from single occupancy vehicle traffic during the work commute. He estimated that 2/3 of these former drivers are now using bikes, and 1/3 has converted to using public transit.

The group was inspired by the presentations of Geoff Straw and Will Toor. The participants from Moscow wanted to know how applicable these models of sustainable transportation were in a community that has such a small population by comparison. Local participants speculated that lack of critical mass, and lack of funding were two impediments to reaching the level of multimodal options that were available to people living in Boulder or Davis. Straw said that university students and employees were the most likely to be the impetus for public transit improvement. He suggested emphasis on a small number of routes. Both Toor and Straw also encouraged Moscow and Pullman locals to work to create a friendly environment for walkers. They suggested improved safety routes for pedestrian crossings as an example.

Group Work

On the second day of the workshop, the group re-convened to reflect upon and refine the ideas that were presented on the previous day. Facilitator Bill McLaughlin encouraged people to share which of their assumptions had been reframed by the work done the day before. People shared the following:

- The efforts of the individual toward sustainability make a difference
- Perhaps it is possible to have a non-motorized campus
- Restricting motor traffic on campus did not shut the university down
- Good alternatives to driving are essential
- Students wield an enormous amount of power to create change on campus

Dr. Nels Reese eloquently stated that the appeal of alternative modes of transportation lies in its ability to bring people together. The opportunity for people to interact, to be connected, which is provided by modes other than riding alone in one's car, "reminds people of their relationship to the world."

Dr. McLaughlin then asked Will Toor and Geoff Straw to comment on what they've observed in Moscow, in terms of the city and university's ability to pursue development of alternative transportation modes.

Geoff Straw commented that Moscow is "very walkable," and this is the first criterion for creating a transit community. People, said Straw, need to be able to get to and from the various transit options without using their cars. Moscow's walking and biking options are numerous enough that people can access public transit options without driving. He pointed out, however, that since Moscow is small, relative to Davis, that the demand density for public transit may not yet exist. He recommended that a gradual and integrated approach to sustainability would include but not be limited to the addition of more public transit options. It would have to "grow slowly and be a long-term commitment." A collaborative effort between campuses- University of Idaho and Washington State University- could create a local grass roots effort to create a clear vision of sustainability.

Will Toor was impressed by how quickly one can get from one place to another in Moscow. He said that the non-motorized modes of walking and biking should be emphasized in a community of this size. Because Idaho has such limited funding for transportation- in fact the state is unique in its lack of transportation funding at the local or state levels- the university, said Toor, will have to be a leader in promoting and funding the vision of sustainable transportation. He added that students will have to be the driv-

ing force in order to get the university to spend its limited dollars. Meanwhile, collaborative effortsthough they are tricky in different regulatory environments- are essential in accessing different funding pools over time.

Dr. McLaughlin then guided the group in a "fishbowl" exercise, in which participants divided into groups, where some discussed the transportation issues on and around campus, and another group observed and recorded their observations. McLaughlin then described a series of scenarios on campus in the context of a single day, that illustrated traffic patterns and densities, class schedules, and the habits and needs of the different people on campus. Those discussing the scenarios shared impressions of the situations among themselves, while those who were observing the discussions created a list of common themes that arose. The themes that the observers recorded were:

- Unsafe pedestrian crossings on Highway 8
- Safety concerns, especially for pedestrians on campus
- Various aspects of scheduling, facilities use, parking, and the need for flexibility to accommodate unscheduled events
- Use of other modes- carpooling and mass transit
- How to attract people to other modes, such as carpooling incentives
- Keeping car traffic out of key areas on campus
- Need for long-term solutions, rather than quick-fixes
- Transportation options in the city determine use of other modes on campus



Participants engage in small group work.

The discussion was then directed to deciding which ideas to bring to the larger conference during the presentation time that afternoon. For the rest of their time together, the group focused on creating recommended action items, based on ideas generated in the workshop. In the larger conference, representatives from the workshop stated the need for a common vision of sustainability on campus and in the community. They said that engaging in the process toward sustainability means engaging in a collaborative process with the key stakeholders from the university and the community. The key stakeholders include UI students, university and city parking and transportation officers, interested faculty and staff, city officials, the university president and administration, and a Director of Sustainability- a position that could be created on campus. Action steps included circulation studies, efficient use of existing resources, and promoting more modal choices.

Conclusion

Will Toor stated in his keynote address that "transportation is often the focal point for conflict between a university and a community." However, attendees at the workshop on Campus and Local Transportation reported a new-found enthusiasm for participating in a dialogue between entities. Many had the realization that a non-motorized campus was possible; that alternative transportation modes are viable, even desirable; that the efforts of a single individual make a difference; and that a powerful opportunity exists to create a long-term cooperative vision for sustainable transportation in Moscow.

Recommended Reading

Will Toor and Spenser W. Havlick, *Transportation and Sustainable Campus Communities: Issues, Examples, Solutions*. Order online at www.islandpress.org.

University of Colorado, Boulder, Environmental Center, *Blueprint for a Green Campus*. Available online at http://ecenter.colorado.edu/greening_cu/2000/index.html

Smart Growth Online: http://www.smartgrowth.org/library/articles.asp?art=1427



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Gem Valley Appraisal (gem@moscow.com)